

Pulling Together to Tackle Climate Change

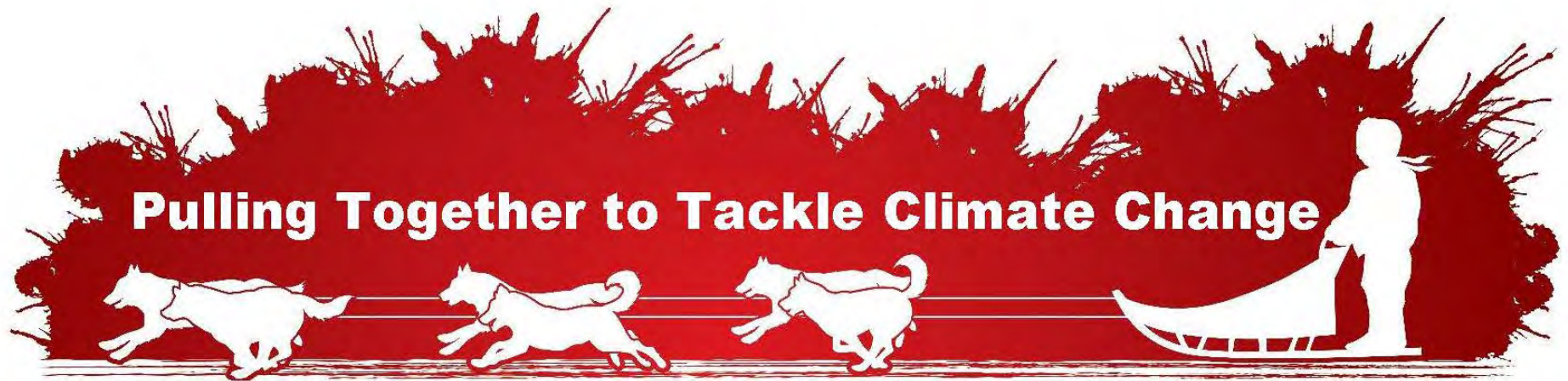


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CLIMATE CHANGE ADAPTATION STRATEGY AND ACTION PLAN

FEBRUARY 2019

NWT ASSOCIATION OF COMMUNITIES

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1. SETTING THE CONTEXT

1.1. This Strategy and Action Plan will set a course for climate change adaptation action in the NWT

On October 29-31, 2018, the Northwest Territories Association of Communities (NWTAC) hosted the NWT Climate Change Forum and Charrette (the Forum). This event brought together NWT communities and various climate change partners (including indigenous, territorial and federal governments and organizations, researchers, funders, and non-profit groups) to work together to develop a community-centred territory-wide strategic and collaborative approach to climate change adaptation.

This Climate Change Strategy and Action Plan represents the culmination of this event. The concerns that communities raised and discussions that took place at the Forum are presented in summary form and directly inform the development of the strategic direction and action plan tasks. The Strategy and Action Plan will provide a crucial compass and road map for stakeholders to take action on climate change. Responsibility for implementation will be shared amongst all partners.



1.2. Climate change matters now more than ever

Climate change isn't a distant, abstract problem — it's here now. NWT communities are at the forefront of climate change.

What is Climate Change?

Climate Change is any significant long-term change in temperature, precipitation and winds. The NWT is experiencing rapid average annual temperature increases – up to four times faster than global averages.

This rapid warming is causing significant changes in the natural environment including ice, permafrost, water, vegetation and wildlife. The frequency and severity of extreme weather events is also increasing. These changes are causing problems for human health, public safety, food security, infrastructure and economic and cultural activities.



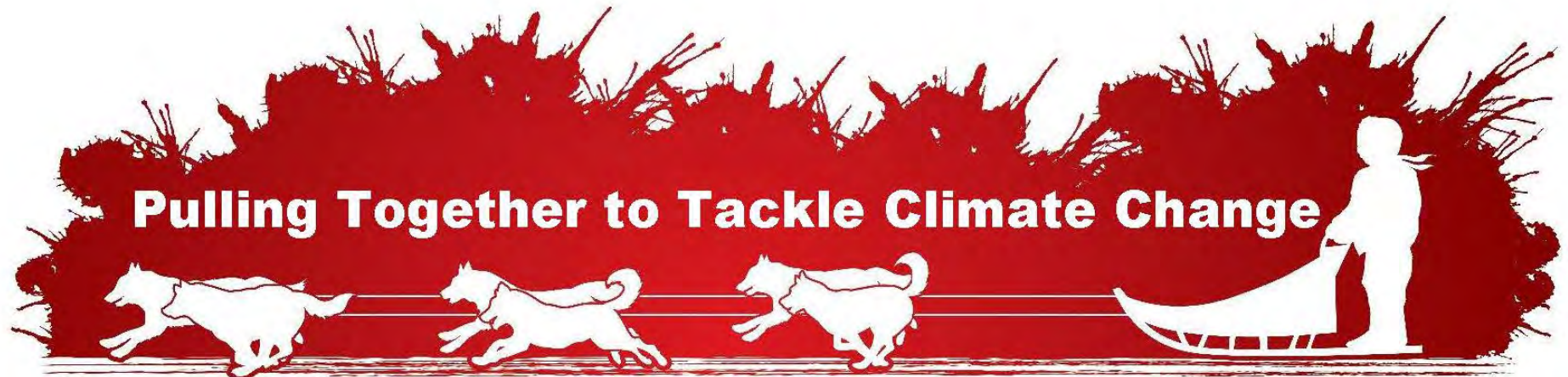
In the NWT, chronic underfunding and lack of capacity make it difficult for community governments to address the vulnerability they feel as a result of these rapid changes. Climate change is not just an environmental issue, or a social justice issue, or an economic issue — it's all of those at once. It may be the biggest challenge humanity has ever faced, and we need to work together to tackle it.

The Government of the Northwest Territories (GNWT) has taken some steps to respond to climate change. Two strategies have been released in the last year: the 2030 NWT Climate Change Strategic Framework (Framework) and the 2030 Energy Strategy. A 5-year Action Plan to implement the Framework is in development.

While some progress is being made, additional efforts are needed to address the urgency of the challenges that communities face in the NWT. There are clear gaps and issues related to leadership, strategic direction, funding, capacity and access to relevant climate change information. This Strategy and Action Plan aligns with current efforts and help address the gaps and challenges that communities have identified. The Action Plan will provide a roadmap to galvanize all partners to move forward together to tackle climate change.

1.3. We need to pull together to tackle climate change

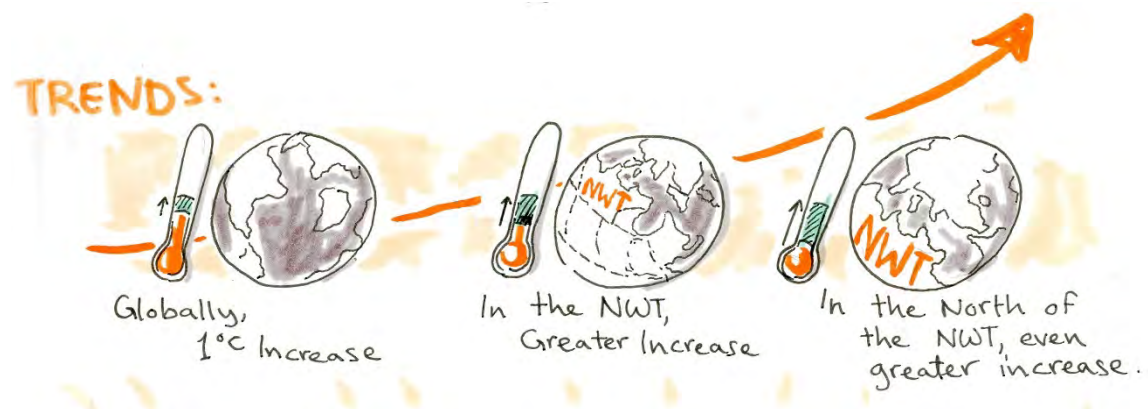
Responsibility for implementation of this Strategy and Action Plan is shared amongst all of the partners who participated in the Forum: territorial, federal, and indigenous governments, communities, researchers, funders, non-profit groups and other organizations. This Strategy and Action Plan is a living document and will change to reflect progress and new information and ideas. The NWTAC Board will review the Strategy and Action Plan annually. Updates and progress will be reported via the NWTAC website and email lists.



2. BACKGROUND

2.1. NWT Climatic Conditions

Over the past 100 years, global average surface temperatures have warmed by about 1°C , due mostly to human activities such as burning fossil fuels and deforestation.



In arctic and subarctic regions, average surface temperatures have increased much faster (due to a phenomenon referred to as arctic amplification). In recent decades, the average annual air temperature in the southern NWT has warmed by about 2°C and the northern NWT has warmed by about 4°C .

Without significant global action to reduce greenhouse gas emissions, future projections suggest that the average annual air temperatures in the NWT will continue to rise dramatically – from 4°C to 6°C in the southern NWT and 8°C to 10°C in the northern NWT by the year 2100.

While future temperature increases cannot be predicted with certainty, it is clear the NWT is warming up and that this trend will continue. The numerous detrimental effects already being experienced in the NWT due to climate change will persist and increase in severity in future years as the warming progresses.

2.2. NWTAC Climate Change Activities

The NWTAC is a non-profit, non-governmental organization formed in 1966 to represent the interests of municipal governments in the Northwest Territories.

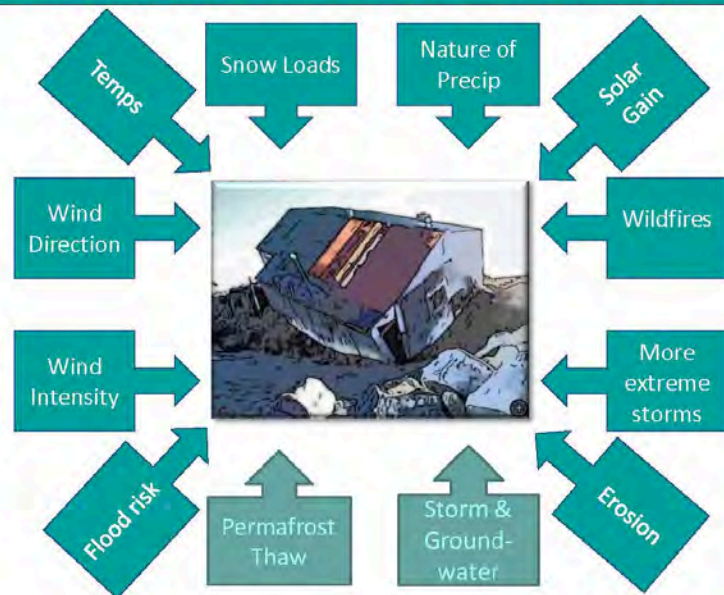


NWTAC membership has grown to include all 33 NWT communities and is a strong, effective voice for community governments. It supports the development of communities by providing advocacy and leadership, delivery of programs and the exchange of information.

Since 2010, the NWT Association of Communities (NWTAC) has worked with partners to create and implement a number of initiatives to help communities deal with climate change, including advocacy efforts, educational materials, adaptation research and development of northern infrastructure standards.

In September 2017, the NWTAC partnered with Crown and Indigenous Relations and Northern Affairs Canada (formerly INAC) to add a Climate Change Community Liaison position to its staff complement. This position works with communities to access federal climate change funding, including Climate Change Preparedness in the North and Climate Change Health Adaptation programs. The Liaison position assists communities in identifying partnership opportunities and provides support for project planning and proposal development.

CUMULATIVE IMPACTS OF CLIMATE CHANGE EROSION OF FACTORS OF SAFETY



In November 2017, the NWTAC released a strategic plan to move the organization into the future and tackle emerging issues. Climate change was one of the key priorities and several action items were identified to help communities deal with climate change impacts by fostering community innovation and resilience. One of those actions was securing funding to host a Climate Change Conference.

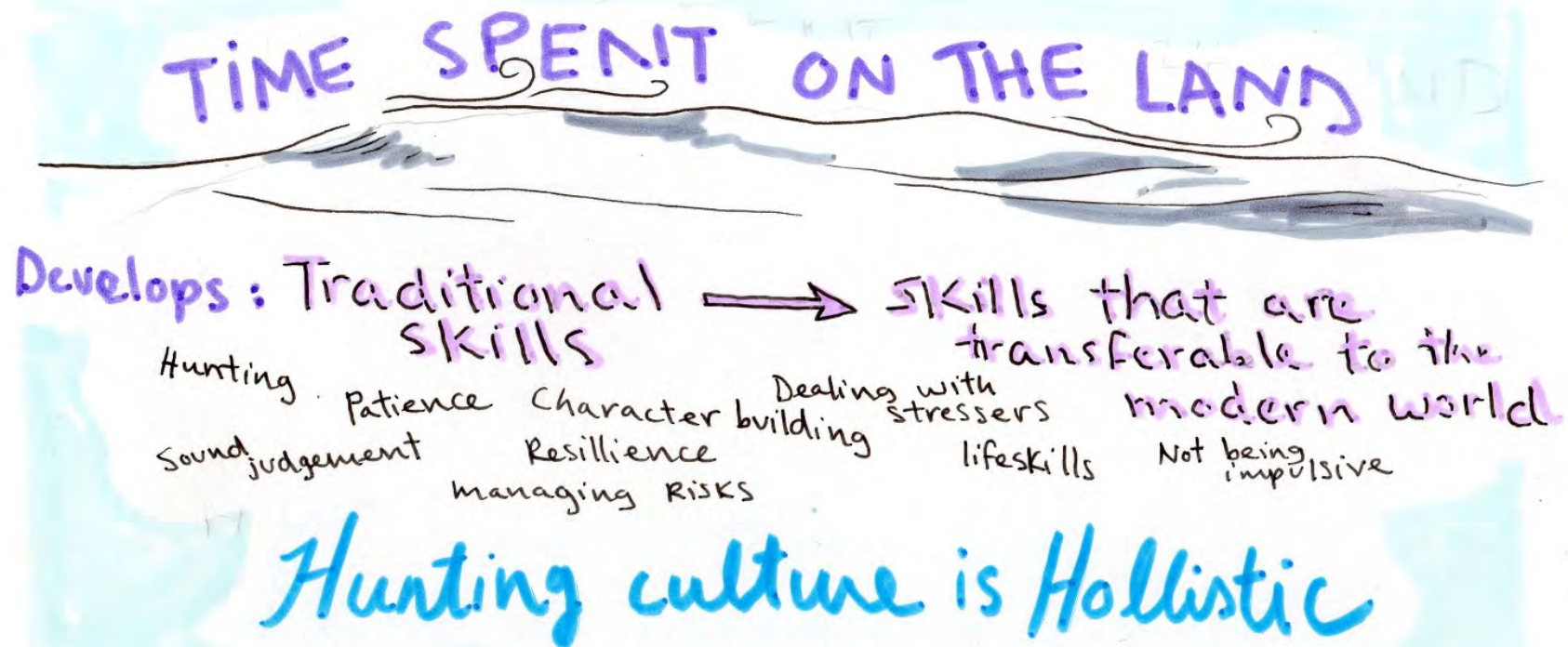
In 2018, the NWTAC was successful in obtaining funding to organize a Climate Change Forum and

Charrette, which was held in Yellowknife from October 29-31, 2018. The event was attended by approximately 165 participants from across the NWT and Canada. Through case studies, peer learning, interactive sessions and a strategic regional charrette, Forum participants collaborated to provide valuable ideas to move the climate change agenda forward.

The NWTAC has used the community input received during the Climate Change Forum and Charrette as the basis for drafting this document, including the resolutions presented at its February 2019 Annual General Meeting.

3. KEY ISSUES FOR COMMUNITIES

Interactive issue tables brought Forum participants together with subject matter experts to discuss the key climate change impacts that communities are experiencing. Outcomes from these issue table discussions are summarized in this section.

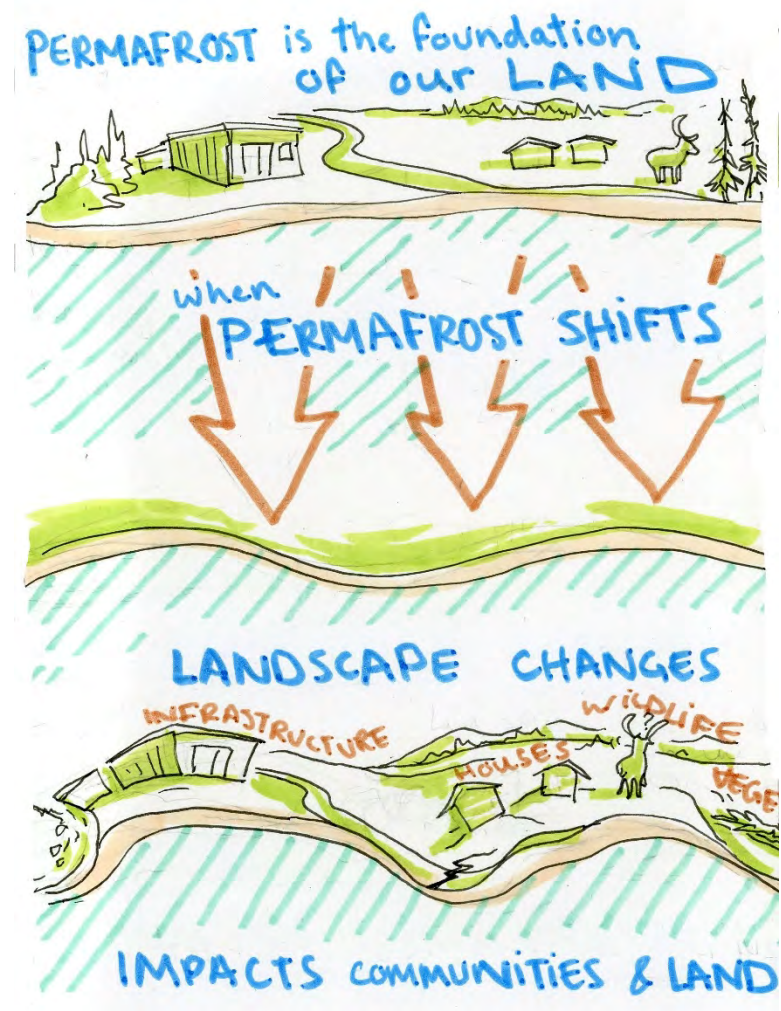


3.1. Permafrost

Much of the NWT is underlain by permafrost, particularly in the northern NWT where average annual air temperatures are increasing rapidly. This warming is causing the active layer in the permafrost to thaw or degrade. Communities are seeing significant impacts as the permafrost degrades, including:

- numerous changes on the land, including damage to pingos and lakes, ground slumping and river and coastal erosion; and,
- direct impacts to infrastructure such as roads, building foundations, marine docks and airport runways.

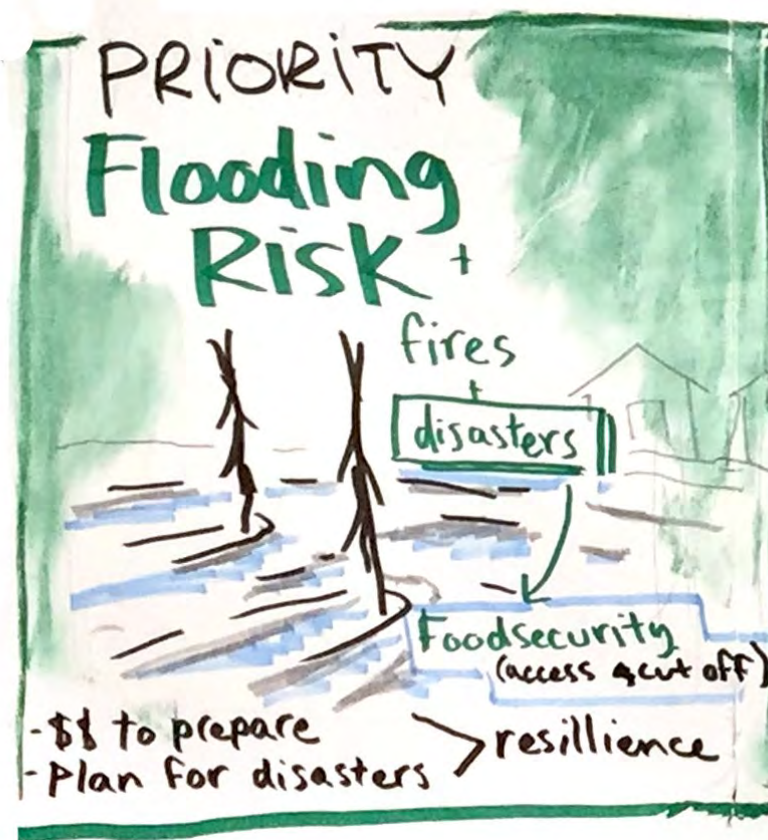
The changes on the land make travel and harvesting more difficult and dangerous. Communities are spending more money fixing problems related to permafrost thawing but aren't getting more funding to cover these costs. There is interest in hazard mapping and technical recommendations that can guide communities when making decisions about where to build new projects.



3.2. Flooding and Extreme Weather

Warmer winter temperatures, permafrost thaw and changes in annual precipitation are all factors leading to increasing risks of flooding and extreme weather events. Community concerns include the lack of accurate, short-term weather forecasts to help guide people when travelling on the land and the need for better preparation for future floods. With respect to weather forecasts, there are several gaps that need to be addressed including an improved network of weather stations, access to existing data and the ability to produce accurate, short-term weather forecasts. Potential solutions to help communities deal with flooding risks include:

- improving the ability to predict potential flooding, based on local knowledge, monitoring and flood plain mapping;
- updating community emergency plans to manage the situation in the event of a flood; and,
- Better flood preparations, such as boats being available to collect people from flooded areas.





3.3. Coastal and River Erosion

Most NWT communities are located by rivers, lakes or along the coastline. A significant increase in the rate and extent of coastal and river erosion is being caused by:

- the combined effects of warmer winter temperatures, thawing permafrost and more extreme weather events; and,
- less ice cover in winter

Increased river erosion results in much more sediment being deposited in the water which can have negative impacts on fish habitat and/or marine transportation. In northern communities such as Tuktoyaktuk and Aklavik, rising sea levels and winter storms are causing coastal erosion and affecting

community infrastructure. Methods exist to try to protect riverbanks and coastal areas from erosion but these are very expensive solutions and may not protect communities in the long term.

3.4. Wildfires

Changing weather conditions are resulting in increasingly dry conditions for forest and tundra vegetation and creating more lightening strikes, which in turn, is causing an increase in the occurrence and severity of wildfires in the NWT. Wildfires represent a serious threat to communities and residents, including:

- public safety;
- health issues due to smoke and poor air quality;
- potential damages to buildings and infrastructure; and,
- negative impacts on wildlife and wildlife habitat.



Wildfires are a natural occurrence on the landscape. However, if the NWT experiences more severe wildfires due to a warming climate, the GNWT may not have the capacity (human or financial resources) to put out all wildfires. More work is needed to prepare communities by:

- updating and implementing community wildfire protection plans, including fireguards in and around communities; and,
- educating residents on FireSmarting practices.

ENR is seeking federal funding to support this work.

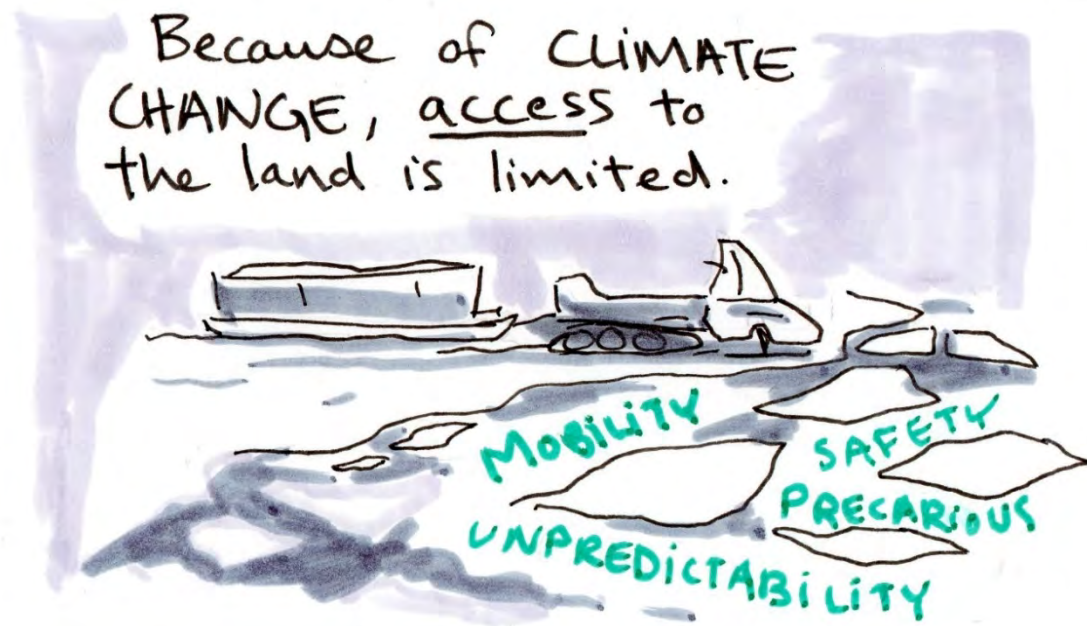
3.5. Access to the Land

As the northern climate warms, community residents are experiencing more problems accessing and travelling on the land and ice. Safe access to the land is more difficult due to:

- changes in weather conditions;
- changes in permafrost conditions;
- changes in water levels and/or ice conditions; and,
- Loss of historical trails due to severe wildfires.

As residents experience more danger or difficulty in using historical trails or transportation routes to

travel, this impacts their ability to pursue traditional harvesting activities. Changes in the timing of the fall freeze-up and spring break-up make it dangerous to travel during certain periods and changing weather and wildlife migration patterns mean residents cannot rely as much on traditional and local knowledge to guide them. The use of new technologies for navigation and communications may be one solution to address some of the difficulties.



3.6. Human Health & Well-Being

The numerous changes and impacts occurring on the landscape are directly affecting residents' safety, health and well-being in different ways, including:

- changes in wildlife migration patterns, changes in timing of events, increasing costs and difficulties in travelling on the land – all of which makes it harder to acquire country foods, berries and traditional medicines;
- people have become more dependent on store bought items, which contributes to serious health issues such as diabetes and obesity;
- smoke and poor air quality due to wildfires are causing problems for people with respiratory issues; and,
- people are experiencing “solastalgia” which is anxiety and mental stress caused by environmental changes and the resulting loss of a sense of connection with one’s home or community or region.



3.7. Transportation

Communities are experiencing several transportation challenges due to the warming climate. These include:

- ice road seasons are becoming shorter and less reliable due to later freeze-ups and earlier break-ups;
- changes in water levels in rivers can affect the timing and viability of marine transportation;
- for the road system and airport runways, permafrost thaw and degradation is an increasing problem as it causes sudden slumping and potholes, which are expensive to repair; and,
- transportation difficulties affect the movement of people and goods which impacts daily life and increases the cost of living.

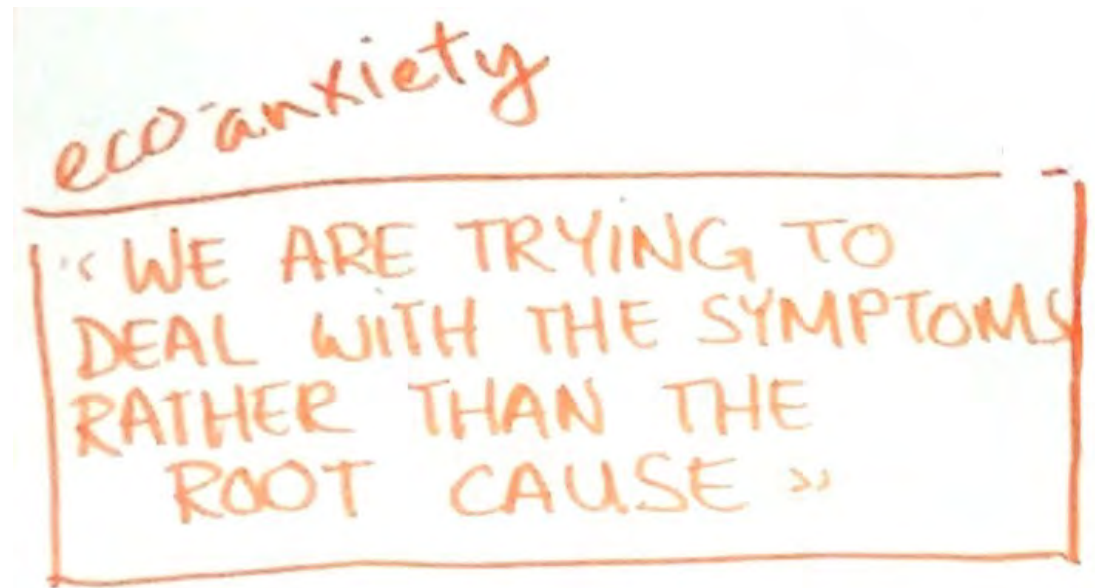


3.8. Water and Waste

Community governments are responsible for operating water treatment plants, providing water delivery and managing sewage systems and landfill sites. Climate change-related impacts such as permafrost thaw and changing water conditions in lakes and rivers may make it more challenging and

costly for communities to provide these services while continuing to meet all relevant operating standards and regulations. Specific water and waste concerns related to climate change can include:

- the potential for contaminants in the local water supply;
- residents' perceptions about water quality and safety; and,
- potential impacts on sewage lagoons and landfill sites due to permafrost thawing and soil instability.



3.9. Agriculture and Food Security

Ensuring continued access to traditional foods is one way to address food security but this may be more difficult in future as the climate warms and changes on the land make it more dangerous for residents to pursue traditional harvesting activities. As the northern climate warms, a longer growing season can improve the yields from community-scale agriculture such as gardens and greenhouses, thus providing residents with fresh local produce. Local challenges to be addressed to support agriculture include:

- access to suitable land;
- obtaining capital for infrastructure and operating funding; and,
- training residents on proper northern agricultural techniques and practices.



3.10. Economic Development

As the northern climate warms, it is anticipated that new opportunities for community economic development or local jobs may arise in sectors such as agriculture, tourism, forestry and environmental monitoring. Barriers to be addressed to pursue these opportunities may include:

- lack of capacity;
- need for training; and,
- funding for infrastructure.

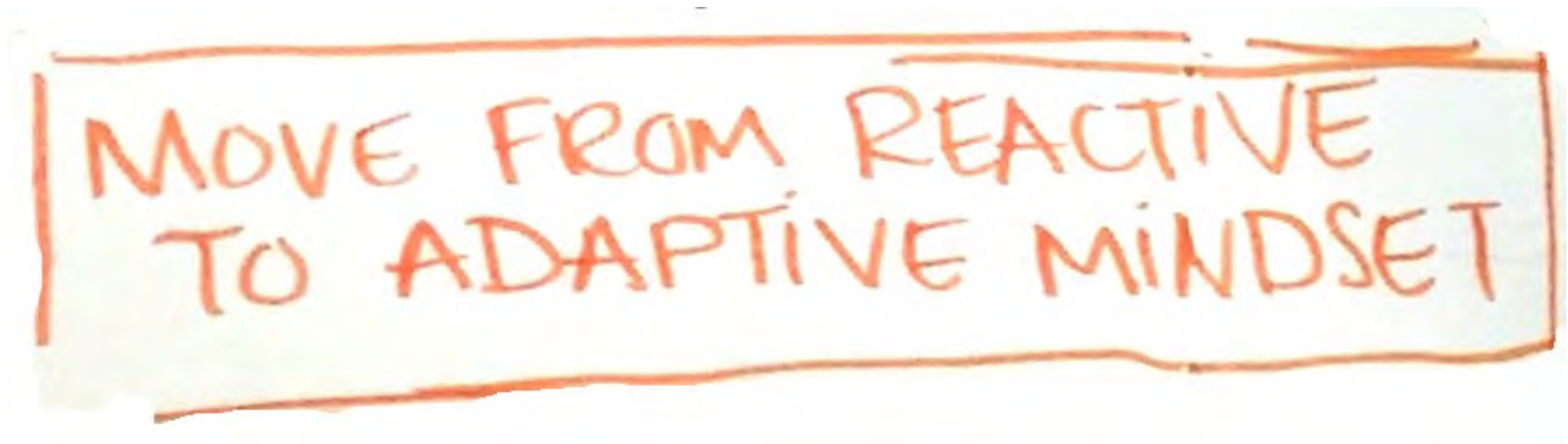


4. CHALLENGES AND OPPORTUNITIES IDENTIFIED BY REGIONAL CHARRETTE TABLES

The Charrette was the culmination of the iterative process that took place during the Forum. This planning exercise grouped participants by their home region to encourage strategic and collaborative discussions on top regional challenges and opportunities.

Outcomes from the charrette are summarized in the following five regional tables.

The need for increased human and financial capacity was identified by all five regions as a challenge that is limiting their ability to respond to climate change impacts.



INUVIK - BEAUFORT DELTA

2018 CLIMATE CHANGE FORUM & CHARRETTE

Priority:
Transportation & Access to the land.



Priority:
Economic Development



Priority:
Human Health



Priority:
PERMAFROST

- Shifts cause damage to infrastructure
- Impacts communities by affecting access to the land.
- Impacts on water quality, etc



It is under the surface, not visible. But we NEED, and could get, more information?

we need to understand permafrost

We cannot stop the thaw of permafrost.

Pulling together

(general partnerships)

Gov. Researchers
Communities together
Parks Canada IRC
cruise ships(?) CTC



Challenges

Impacts:

roads



Airstrips



Buildings



Wildlife

Housing

can't build here

- river/water quality

Ideas

- Standards
- Construction Maintenance
- tracking records / recording observations
- Capacity
- Education
- Contractors
- People to monitor

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Inuvik – Beaufort Delta Region

Challenges	<ul style="list-style-type: none"> • Permafrost thaw is harming infrastructure, changing wildlife habitat, and making it more difficult to get out on the land. • Transportation network is less reliable and more costly to maintain. • Lack of capacity and lack of information sharing is limiting ability to do something about climate change impacts. • Less access to traditional foods is having a negative impact on human health and wellness.
Opportunities	<ul style="list-style-type: none"> • Mobilize information – traditional knowledge, scientific information, standards, climate change models – to support decision-making and action. • Share information through education, training, internet, maps, plain language materials. • Consider transportation options created by a changing climate (e.g. new shipping routes, longer ferry season). • Create and update Community Energy Plans. • Increase access to traditional and local foods through community food trading, local agriculture, learning from others.
Partnerships	<ul style="list-style-type: none"> • Partnerships between communities are key to share impacts/challenges and potential solutions. • Partnerships between academic and government researchers to obtain the best information possible. • Partnerships between scientists/researchers, communities and land users, and traditional knowledge holders to support research, monitoring and adaptation decisions. • Partner with Parks Canada, private operators and others to develop tourism.


Priority:
Community
Buildings



PERMAFROST

↓
Transportation
infrastructure

Priority:
Renewable
Energy



MUST COLLABORATE


Challenge
transportation \$\$

\$\$ Shipping
food

\$\$ Getting out
on the land

IDEA

Get someone
to go by
boat to
other communities



SAHTU

2018 CLIMATE CHANGE FORUM & CHARRETTE

Priority:
**ACCESS TO TRADITIONAL
FOODS**

Elders not getting local
foods like in the past.

• Changing
ground

• Unpredictable
weather

• Erosion losing
berries

MANY BENEFITS
TO COUNTRY
FOODS

It is what
gives us our dignity
as Dene people.

Pulling together

SRRB +
RRCs

Involve Land
Corps.

Guardian
Program

Northright Air to
Ship local food
economically

Lobby for \$

Researchers/
WLU-Andrew
Spring

TRADE!

Traditionally this was the way

ELDER
Not open
to it

used
to be
moose

NOW
muskox

Not a
trad food

harder
to prepare

Opportunity
idea

Learn ways
to cook and
prepare
muskox

Opportunity -
Community
feasts

WAYS TO TRADE
AND SHARE
BETWEEN
COMMUNITIES.

Country
food
store

Introduce
Commercial
harvesting

Challenges

Diabetes +
Heart problems
linked to
Western
foods.

Many families
in Yellowknife

Opportunity
People trade
country foods
between families

BUT
SHIPPING

Oct 31 2018

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Sahtu Region

Challenges	<ul style="list-style-type: none"> • Less access to traditional foods is having a negative impact on human health and culture • Permafrost thaw is harming infrastructure and reducing the winter road season. • Increased erosion and shifting sandbars are making river navigation more difficult. • The business case and support for maintenance of infrastructure are not adequate for renewable energy projects.
Opportunities	<ul style="list-style-type: none"> • Increase access to traditional and local foods through community food trading. • Education and programs to support harvesting and eating other, less traditional animals such as muskox. • Support the growth of a regional economy for traditional foods (e.g. country food store, commercial harvesting, partnerships, funding, training). • Support participation of youth through training and mentoring, housing, jobs. • Focus resources and information sharing to monitor and map permafrost thaw and apply this information to community and infrastructure planning.
Partnerships	<ul style="list-style-type: none"> • Partnerships between communities are essential for food sharing/trading. Partnerships with the Sahtu Renewable Resources Board, Renewable Resource Councils, Land Corps, Sahtu Guardians, private transport companies, and with researchers will support success of food trading/sharing. • Permafrost challenges require stronger partnerships between governments (community, First Nation Governments, GNWT, and federal). Department of Education, Yukon College, Aurora College all need to partner with communities to provide education and training on permafrost research and adaptation.

DEHCHO

2018 CLIMATE CHANGE FORUM & CHARRETTE

PRIORITY PERMAFROST



Challenges
 Melting - changing landscape
 - Challenging Infrastructure
 - Impacting travel/access

Need more info (?) on this type of permafrost.

PRIORITY ALTERNATIVE ENERGY

- Region NOT GRID CONNECTED
- TRANSITION TO LOWER CO₂
- Current lacks of efficiency
 ↳ Heat/Power
 High cost / high emissions



RESEARCH options to use RESIDUAL HEAT

Explore federal funding pots
 Regional DCFU with NTPC

Challenges Barriers

Isolated Small Communities

Geothermal hard to access



Deals/Opportunities

Natural Gas

Geothermal



PRIORITY Flooding Risk +



- \$\$ to prepare
 - Plan for disasters
 ↳ resilience

Pulling Together

Fed Feasibility Study \$

NTPC

Partner with Power Corp.

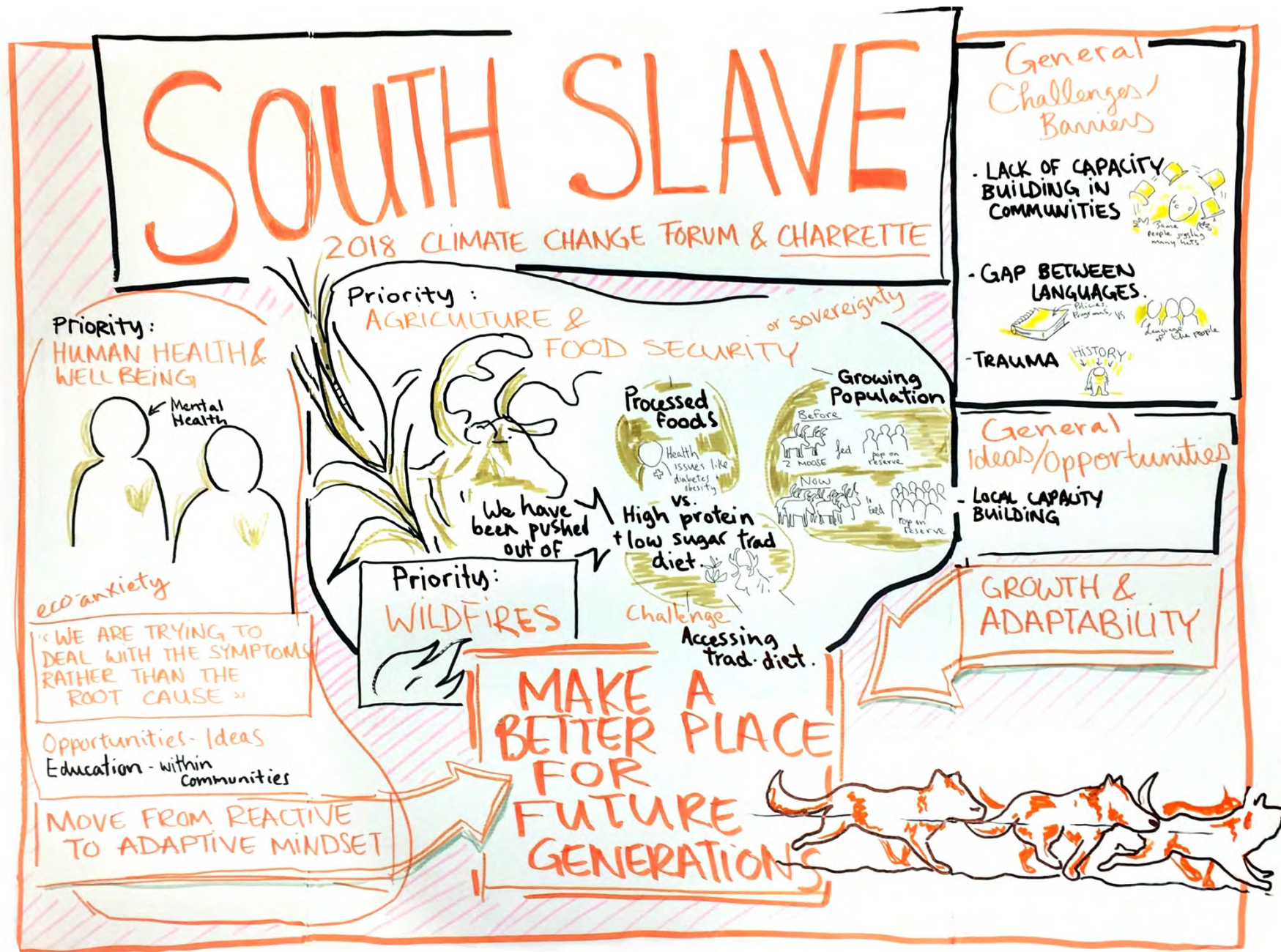
GNWT
 ARCTIC ENERGY ALLIANCE



Olson McCraen 2018

Dehcho Region

Challenges	<ul style="list-style-type: none"> • Lack of information on cost and feasibility of alternative energy options. • Communities are not well prepared for disasters and emergencies (e.g. flood, wildfire). • Permafrost thaw is harming infrastructure, changing wildlife habitat, and making it more difficult to travel on the land. • Permafrost/hazard mapping is not available for communities to use for planning and decision-making. • Food security is threatened by permafrost thaw, difficulty accessing country food, and limited preparedness for disasters.
Opportunities	<ul style="list-style-type: none"> • Develop partnerships to get support and expertise for feasibility studies and funding. • Strong interest in exploring alternative energy and heat opportunities (e.g. geothermal, natural gas, wood and residual heat). • Provide funding and support for communities to complete disaster/emergency preparedness plans. • Increase cooperation, collaboration, and sharing within the region, and between regions. • Use Standards when building. • Mobilize information – traditional knowledge, scientific information, connections between individual actions and climate issues – to support decision-making and action.
Partnerships	<ul style="list-style-type: none"> • Build strong partnerships to move forward with energy projects: communities can partner with each other and with Dehcho First Nations, Arctic Energy Alliance, GNWT, Federal government, Northwest Territories Power Corp. • Regional coordination is necessary to support a food sharing network; could be coordinated by Dehcho First Nations. • Need to work as a region to be better prepared for floods, fires, other disasters. Partner with GNWT, FireSmart, federal programs. • To address permafrost challenges, communities need to collaborate with each other more, and they need partnerships with the NWT Geological Survey, Scotty Creek Research Station, remote sensing experts, and other researchers.



South Slave Region

Challenges	<ul style="list-style-type: none"> • Difficulty accessing traditional foods and locally produced food; this is having a negative impact on human health and wellness. • Lack of capacity and lack of access to information is limiting our ability to do something about climate change impacts.
Opportunities	<ul style="list-style-type: none"> • Collect and share local/regional case studies and success stories. • Develop agriculture and food policies that promote traditional ways such as food sharing and trading networks, and use best agricultural practices such as permaculture, organic methods, etc. • Provide the public with clear, reliable information on energy and climate change adaptation. • Hold local forums to focus on community climate change issues. • Create Local Sustainability Coordinator positions in communities. These can act as a “power connector” to oversee comprehensive Community Plans.
Partnerships	<ul style="list-style-type: none"> • Build partnerships with knowledge translators, elders and traditional knowledge holders, technical experts. • Partnerships between communities and Aurora College (and potentially other northern-focussed colleges/universities) are needed to develop co-op placement/internships in communities.

NORTH SLAVE

2018 CLIMATE CHANGE FORUM AND CHARRETTE

Eco-depression - Country Food vs. Western Food

Priority:
HEALTH & WELLNESS



On the land activities

Priority:
CAPACITY BUILDING

- Develop resources in community to address climate change
- COMMUNICATION & EDUCATION
- Plain Language

What is it?

INVESTING IN COMMUNITY
TO DEVELOP PEOPLE'S SKILLS
AND KNOWLEDGE



Challenges

Hard to translate some words
Not enough funding \$\$\$
trying to get everyone together
talking to the right people

Opportunities

Plain language
Proposal writing + project management workshops
Dedicated staff
Youth involvement
Education
to support local position
TK

Priority:
INFORMATION & AWARENESS

Studies
Data
UNDERSTANDABLE

Pulling together

GNWT
Ecology North
NWTAC
ENR
INDIGENOUS GOVERNMENTS

PRIORITY: **FOOD SECURITY**

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North Slave Region

Challenges	<ul style="list-style-type: none"> • Lack of capacity, training and support is limiting ability to plan and act on climate change impacts. • Less access to hunting grounds and traditional foods is having a negative impact on human health and wellness. • Solastalgia (anxiety and mental stress caused by environmental changes and losing a sense of connection) and other mental health issues. • Lack of transparency with communities on energy governance, policy and provision of information.
Opportunities	<ul style="list-style-type: none"> • Create and fund dedicated coordinator positions in communities to work on energy and climate change. • Offer training and support for proposal writing and project management. • Implement a strong communication campaign for all levels of society including youth that clearly explains impacts, choices and trade-offs of climate change. • Support community agriculture and shifts to other harvestable species. • Share successful agricultural practices between communities. • Make energy funding and information on energy and climate accessible to communities.
Partnerships	<ul style="list-style-type: none"> • Partnerships with regional health authorities and partnerships between governments (community, First Nation Governments, GNWT, and federal) are needed to address climate change impacts on health. • Partnerships with the Northern Farm Training Institute, local resource people and collaboration between communities will support local food production. • Partnerships with non-profits (Arctic Energy Alliance, NWT Association of Communities, and all levels of government are needed to move forward on community energy efficiency.

(A more detailed report on the 2018 Climate Change Forum and Charrette is available at <https://climatechange.toolkitnwtac.com>.)

5. STRATEGIC DIRECTION

It is critical for communities to have access to climate change information and expertise to predict and understand the impacts. Communities also need support to build local capacity and access to technical expertise and funding to tackle local energy and climate change adaptation challenges.

The NWTAC used the results from the 2018 Forum and Charrette to identify and develop the following strategic directions to help communities deal with energy and climate change:

5.1. Formalize NWTAC Role and Build Capacity

The NWTAC has played and can continue to play a pivotal role in helping communities address energy and climate change challenges. To take on this role, the NWTAC will focus on the following actions:

- Formalize NWTAC's role
- Seek a formal partnership with the GNWT
- Pursue funding for additional dedicated staff and increased organizational capacity

5.2. Advocacy

The NWTAC will continue its advocacy work on behalf of the communities. Target audiences for climate change-related advocacy efforts include GNWT departments, the Government of Canada and the Federation of Canadian Municipalities. Key advocacy messages on climate change include:

- The severity, financial cost and human dimensions of current and future impacts
- The need for partnerships, funding and actions

5.3. Understanding Impacts

The NWTAC will help communities understand the current and future impacts from climate change by coordinating and/or supporting work in the following areas:

- Adaptation research – helping influence the research agenda to reflect community concerns and priorities
- Community / regional risk assessments – focusing on thawing permafrost, flooding, wildfires, transportation and human health
- Hazard mapping – collaborating with the GNWT to produce community hazard maps

5.4. Education and Outreach

The NWTAC will continue its efforts to help communities understand and manage the impacts from climate change. Key activities will include:

- Disseminating results and findings from research or analytical studies
- Providing information on eligible funding programs and opportunities
- Training – working with partners to build community capacity and knowledge through training delivered at a local or regional level

5.5. Building Resilience and Adapting to Changes

Key areas of concern for communities include permafrost-related impacts on buildings and infrastructure, identifying and preparing for natural disasters (flooding and wildfires), addressing health and well-being of residents (safety, food security, mental health) and improving energy efficiency and local energy systems.

To help communities make progress in these areas, the NWTAC will advocate for additional support and capacity in the following areas:

- Pathfinder – helping communities to develop initial project ideas
- Planning – incorporating energy and adaptation planning in existing community plans
- Funding for initiatives – helping communities identify and pursue funding opportunities
- Project management – helping communities start and complete energy and adaptation projects

5.6. Economic Development

As the northern climate continues to warm, new opportunities for community economic development or local jobs may arise in sectors such as agriculture, tourism, forestry and environmental monitoring.

The NWTAC will support communities' economic development efforts by:

- Advocating for funding to support eco-tourism and agriculture initiatives; and,
- Working with partners to deliver training.
- Continue to provide Grant Opportunities Newsletter from the Public Sector Digest.



6. PARTNERS

To make progress on climate change concerns, communities may need to interact with external partners to access technical expertise, obtain funding or establish partnerships. The climate change roles for key partners are summarized below:

- **Government of Canada** – Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) and Environment and Climate Change Canada (ECCC) are two key federal departments on climate change:
 - CIRNAC works with all federal departments to represent northern climate change interests and needs. Key CIRNAC funding opportunities of interest to communities include the Climate Change Preparedness in the North Program (CCPN) and the Indigenous Community Based Climate Monitoring Program; and,
 - ECCC is responsible for implementing the Pan-Canadian Framework on Clean Growth and Climate Change (PCF) and supports various actions on climate change including monitoring, scientific research and policy development. One new initiative of note is the creation of the Canadian Centre for Climate Services (CCCS). The CCCS is interested in supporting the development of a northern hub to serve the climate data needs of the three territories.

- **Government of the Northwest Territories** – many GNWT departments are involved in climate change work. Key departments include Environment and Natural Resources (ENR), Municipal and Community Affairs (MACA), Health and Social Services (HSS), Infrastructure (INF) and Industry, Tourism and Investment (ITI). Recently, the GNWT released the NWT Climate Change Strategic Framework and is working to finalize a 2019-2023 Action Plan to implement the framework.

While the NWTAC recognizes these efforts, it is concerned that the GNWT needs to do much more to effectively address climate change and support communities. Areas requiring improvement include better leadership, increased funding, training and capacity-building and access to relevant climate change information.

- **Indigenous Governments** – these governments can play an important role in identifying regional climate change concerns and opportunities while ensuring that the land, resources and self-government rights are respected. Indigenous governments also support research and monitoring efforts, including the use of traditional and local knowledge to support decision-making for climate change adaptation.

- **NGOs / Researchers** – some local non-government organizations, such as Ecology North, Ducks Unlimited and the Canadian Parks and Wilderness Society (CPAWS-NWT) are involved in various climate change projects or initiatives. A significant amount of research on climate change is underway in the NWT but isn't easily accessible. Government-led efforts include the GNWT Knowledge Agenda, the GNWT-Wilfrid Laurier partnership and the work of the Aurora Research Institute.



7. NWTAC ACTION PLAN – ADAPTATION

The table summarizes the actions the NWTAC will take to help communities tackle climate change:

Strategic Direction	Goals	Actions	Timeframe	NWTAC Resolution	Status
Capacity	Capacity	Seek new funding from the GNWT to increase organizational capacity	Summer 2019		New
		Take steps to increase NWTAC climate change capacity	Fall 2019		New
		Advocate for and support the creation of Sustainability Coordinators for every community government in the NWT.		2019-10G	
		Lobby the GNWT to create and adequately resource Pathfinder positions at a regional level to mobilize resources and support community and regional climate change adaptation efforts.		2019-10G	
	Leadership	Lobby the GNWT to allocate adequate resources to successfully implement the Climate Change Strategic Framework. This includes the creation and staffing of permanent climate change positions within ENR and in other departments, and funding and support to enable communities to participate in Action Plan development.		2019-10D 2019-10G	
		Advocate for and support the creation of an independent, arm-length Climate Change Centre for the NWT		2019-10E	
	Funding and Resources	Continue to lobby governments for increased public funding to address climate change challenges	Ongoing		Underway
		Complete the Climate Change Impacts Costing Study (in partnership with the GNWT)	Spring 2020		Underway
		Lobby governments about the severity, financial costs and human dimensions of current and future climate change impacts	Summer 2020 and ongoing		New

Strategic Direction	Goals	Actions	Timeframe	NWTAC Resolution	Status
	Partnerships	Lobby governments about the need for partnerships, funding and actions to address impacts	Ongoing		Underway
		Continue to consult with governments on partnerships opportunities that support community efforts on climate change	Ongoing		Underway
		Facilitate communications and promote partnerships with communities to address climate change challenges			
Understanding Impacts	Climate change Information	Advocate for and support the delivery to each community government of models and forecasting of expected climate trends and resulting risks for their community		2019-10A	
		Work with partners to ensure that communities receive assistance in analysing, interpreting and applying climate information to support decision making.		2019-10A	
	Hazard mapping	Advocate for and support the completion of hazard mapping for all NWT communities in a strategic and timely manner.	2019	2019-10C	Underway
		Work with partners to support community participation in the development of hazard maps and their application to community planning by developing tools for outreach, communication, education and training.		2019-10C	
	Research	Work with communities, governments and partners to ensure that the research needs of the communities are being promoted when setting research agendas		2019-10F	
		Advocate for and support the completion of vulnerability assessments of all community assets.		2019-10B	New
		Continue to participate in the development of Infrastructure Standards	Ongoing		Underway

Strategic Direction	Goals	Actions	Timeframe	NWTAC Resolution	Status
Education & Outreach	Training	Work with partners to develop plain language materials to educate the public about permafrost thaw and assist private homeowners in protecting their properties from the impacts of permafrost.		2019-10B	
		Seek funding to offer Climate Change Course (with School of Community Government)	Ongoing		Ongoing
		Work with partners to identify training needs and deliver training	2020 and ongoing		New
		Work with partners to develop and deliver information and outreach materials on climate change for communities	Ongoing		Ongoing
	Funding	Engage and support communities in accessing federal and territorial funding for community and regional climate change initiatives	Ongoing		Underway
Resilience and Adaptation	Planning	Advocate for the provision of adequate funding and resources for communities to develop and implement plans to strengthen resilience (i.e. adaptation plans, drainage plans, emergency management plans)		2019-10B 2019-10H 2019-10I	
		Work to ensure the consideration of permafrost thaw in all development and adaptation planning for NWT infrastructure		2019-10B	
		Support communities in incorporating adaptation planning in community plans	2020 and ongoing		New
	Projects	Provide communities with support in developing adaptation projects and identifying potential funding initiatives	2020 and ongoing		New
Economic development	Projects	Work with the GNWT and other partners to ensure that adequate funding and resources are allocated to support the development of community agriculture and local food initiatives.			
	Infrastructure	Lobby governments for funding for infrastructure to support agriculture, eco-tourism and other climate change-related economic development initiatives	2019/2020		New

8. RESOLUTIONS

Resolutions are democratically adopted by members of the NWTAC and are an effective way to bring important issues to the attention of Territorial or Federal Governments and other national agencies. Stakeholder input at the Forum directly informed the development of climate change resolutions that were presented to the NWTAC membership for consideration at the February 2019 Annual General Meeting:



2019-10 Climate Change Adaptation

WHEREAS Climate Change is occurring in the North at more than twice the rate of the rest of Canada;

AND WHEREAS The North is particularly vulnerable to climate change due to its reliance on temperature sensitive systems such as permafrost;

AND WHEREAS All NWT communities are experiencing the impacts of climate change;

AND WHEREAS the 2018 NWT Climate Change Forum and Charrette was an important gathering where communities voiced their concerns and the challenges they face in addressing vulnerabilities caused by the climate change.

AND WHEREAS taking proactive tactics to addressing climate change adaptation is the preferred approach;

AND WHEREAS We will see the best success by working collaboratively with our many partners;

THEREFORE BE IT RESOLVED THAT the NWT Association of Communities enact the following suite of climate change adaptation resolutions:

2019-10-A Climate change models and forecasting for each NWT community

WHEREAS The ability of communities to predict the impacts of climate change is highly dependant upon having access to appropriately developed climate models;

AND WHEREAS Communities need access to up-to-date models and forecasts to support planning for a myriad of community government responsibilities including emergency preparedness and disaster planning, community development plans, infrastructure maintenance and replacement, recreation and trails, etc.

THEREFORE BE IT RESOLVED THAT the Canadian Centre for Climate Services (CCCS) provide each community government with models and forecasting of expected climate trends and resulting risks.

AND FURTHER THAT CCCS deliver this information in a format that will align with standards being developed through the Northern Infrastructure Standardization Initiative;

AND FURTHER THAT CCCS make this information publicly accessible online;

AND FURTHER THAT CCCS lead efforts to assist communities in analysing, interpreting and applying climate information to support decision making.

2019-10- B Permafrost

WHEREAS Permafrost thaw poses significant risks to community and privately owned infrastructure, the transportation network, access to the land, food security, waste management, and many other issues affecting residents;

AND WHEREAS the total costs of permafrost degradation on public assets is estimated to be in the order of \$1.3 billion.

AND WHEREAS Surface water has a significant impact on permafrost and the development and implementation of Community Drainage Plans is critical;

AND WHEREAS the Housing Corporation is an important partner with the communities in meeting the climate change adaptation challenge;

AND WHEREAS Communities wish to support their ratepayers by educating them about permafrost and climate change and how best to protect their properties;

THEREFORE BE IT RESOLVED THAT the GNWT provide adequate funding and resources to assist municipalities in completing and implementing Community Drainage Plans;

AND FURTHER THAT the Housing Corp. adequately consult with communities about their development plans and ensure that they comply with all land use and adaptation plans;

AND FURTHER THAT the GNWT develop requirements to ensure the consideration of permafrost thaw in all development and adaptation planning for NWT infrastructure.

AND FURTHER THAT the GNWT work with the NWT Association of Communities and other partners to develop plain language materials to educate the public about permafrost thaw and assist owners of privately-owned homes and other infrastructure in protecting their properties from the impacts of permafrost thaw.

AND FURTHER THAT the GNWT take a leadership role in conducting a vulnerability assessment of all community assets.



2019-10-C Hazard mapping

WHEREAS Hazard mapping is a critical element in climate change adaptation and building the resiliency of communities;

AND WHEREAS Hazard mapping is not a one size fits all type of undertaking and requires collaboration across many disciplines and organizations;

AND WHEREAS securing funding to develop and apply Hazard Mapping is critical to their completion;

THEREFORE BE IT RESOLVED THAT the GNWT work with the NWTAC and other partners to ensure that hazard maps are developed by the GNWT in a timely and strategic manner.

AND FURTHER THAT the federal government should ensure that adequate funding is available to complete hazard mapping for all NWT communities;

AND FURTHER THAT the NWT Association of Communities work with the GNWT and other partners to identify opportunities to support communities in participating in the development of hazard maps and their application to community planning by developing tools for outreach, communication, education and training.

2019-10-D Governance and leadership on climate change in the GNWT

WHEREAS Leadership is essential to respond to the climate change challenges and coordinate efforts across departments and organizations;

AND WHEREAS The October 2017 Report of the Auditor General of Canada on Climate Change in the Northwest Territories found that ENR had not addressed deficiencies affecting its leadership on climate change that were identified more than 10 years ago.

AND WHEREAS ENR, in its response to the Auditor General's Report committed to examine its authority, roles, and responsibilities, and the resources required to effectively carry out the Climate Change Strategic Framework (CCSF).

AND WHEREAS The CCSF and draft Action Plan do not give adequate attention to authority, roles, responsibilities and resources to carry out the commitments made beyond stating the status quo.

AND WHEREAS The current configuration of GNWT departments and initiatives that have been tasked with addressing climate change do not support a strategic, multidisciplinary and collaborative approach.

THEREFORE BE IT RESOLVED THAT the GNWT ensure that ENR is given the appropriate recognition and authority to act as the lead for climate change in the Government of the Northwest Territories

AND FURTHER THAT the GNWT commit to allocate the full complement of resources necessary for ENR to fulfill their responsibility as lead on climate change and for the CCSF to be successfully implemented. This includes the creation and staffing of permanent climate change positions within ENR and in other departments.

AND FURTHER THAT NWT Association of Communities work with the GNWT and other partners to advocate for federal funding and other resources to fill any funding or resource shortfalls.



2019-10-E Climate Change Secretariat or Network

WHEREAS The Auditor General's Report found that in the absence of leadership from ENR on climate change, there has been a piecemeal and uncoordinated approach to adaptation efforts within the GNWT and amongst communities.

AND WHEREAS The Auditor General's Report found that ENR did not fulfill its commitment to provide departments and communities with information needed to take action on climate change;

AND WHEREAS Every regional consultation held by ENR during the 2016/17 CCSF engagement sessions raised the concern that existing climate change information and analysis was not shared, and that this was a barrier to adaptation;

AND WHEREAS A knowledgeable public will be better equipped to contribute to territorial efforts on climate change and build resilience in communities.

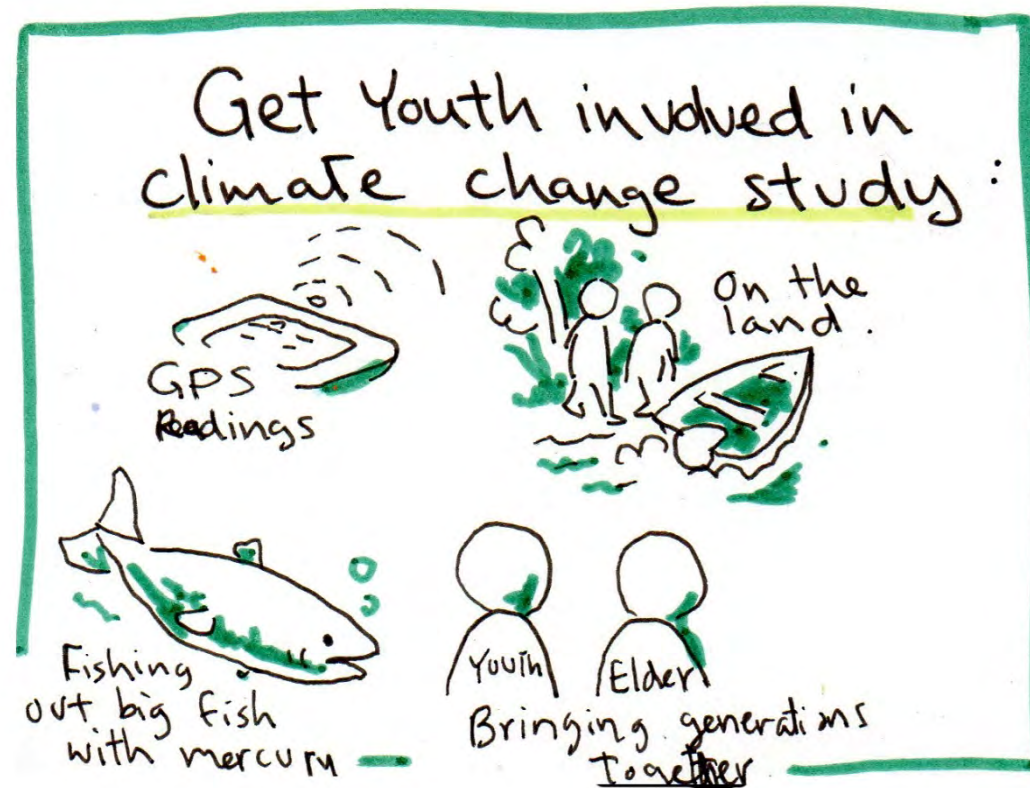
AND WHEREAS The Yukon and Nunavut both have a Climate Change Secretariat in place, as do many of the provinces.

AND WHEREAS An arms-length climate change centre (e.g. Secretariat/Office/Network) can provide effective co-ordination of all aspects of climate change adaptation and mitigation. A climate change centre will mobilize resources, including information and expertise to enable their citizens to take leadership on climate change issues.

THEREFORE BE IT RESOLVED THAT the GNWT create an arms-length climate change centre

AND FURTHER THAT Part of development of the CC Centre include investigation of effective models of climate change secretariat/offices that are providing leadership and coordination on climate change in Canada and abroad in order to find relevant examples and best practices which may be useful to the NWT. These findings will be shared with the public;

AND FURTHER THAT the GNWT work with the NWT Association of Communities and other partners to support the development and implementation of an improved approach to leadership, coordination, and information sharing on climate change in the NWT, which should include a Climate Change Centre.



WHEREAS Most communities have not been involved in setting the research agendas in their communities;

AND WHEREAS Communities are often not made aware of the outcomes of the research being completed in their communities and many research papers must be purchased;

AND WHEREAS The lack of a northern university means that the academic knowledge base relating to Arctic issues is scattered throughout the country;

BE IT THEREFORE RESOLVED THAT the GNWT and Federal Government work with the NWT Association of Communities, communities, and with its various partners to ensure that the research needs of the communities are being promoted and supported when setting research agendas;

AND FURTHER THAT communities engage the researchers who are already working in their communities to assist them in addressing their research needs.

2019-10-G Bridging the community capacity gap

WHEREAS NWT communities are chronically underfunded by 37% and this funding shortfall limits their ability to be resilient in the face of climate change.

AND WHEREAS Lack of capacity was a recurring concern voiced by participants from every region at the 2018 Climate Change Forum and Charrette. Limited financial and human capacity, and difficulty accessing information, expertise and other resources is hampering progress to adapt to a changing climate.

AND WHEREAS Collaboration with communities on the development of Climate Change Strategic Framework Action Plans will support transparency in priority-setting and accountability for actions.

THEREFORE BE IT RESOLVED THAT the GNWT allow for the creation of Sustainability Coordinators for every community government in the NWT and adequately resource these positions.

AND FURTHER THAT the GNWT to create and adequately resource Pathfinder positions at a regional level to mobilize resources and support community and regional climate change adaptation efforts.

AND FURTHER THAT the GNWT provide funding and support to enable communities to participate in CCSF action plan development.



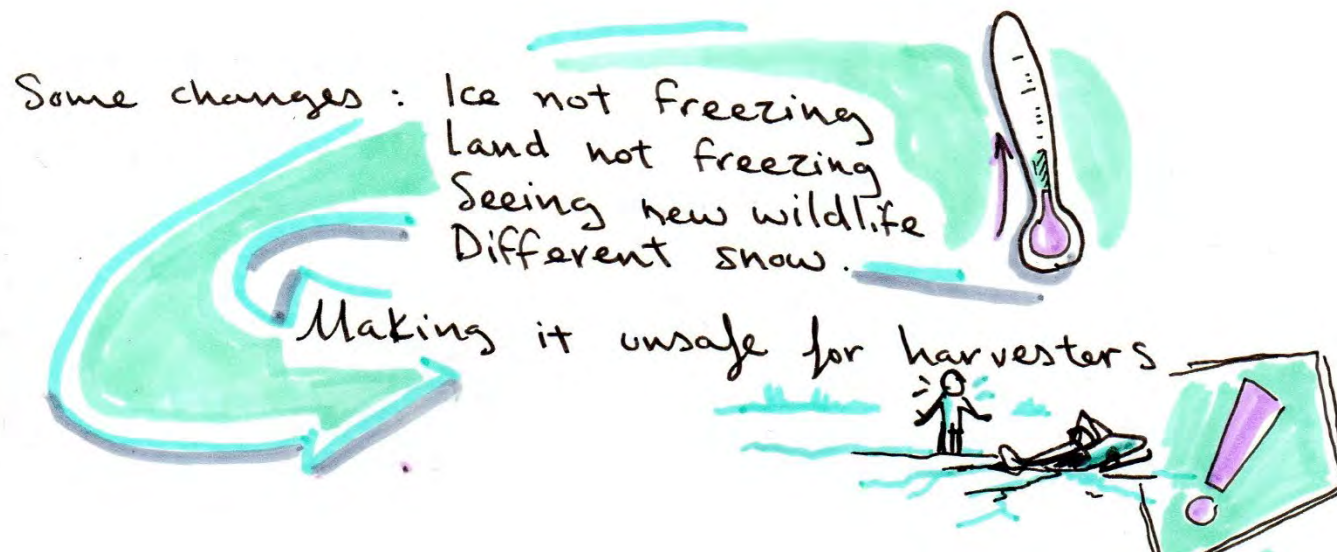
2019-10-H Emergency management plans

WHEREAS Extreme weather events are becoming more frequent

AND WHEREAS This makes the importance of emergency planning and status of emergency plan completion and implementation in communities more critical

AND WHEREAS It is critical that emergency plans incorporate the consideration of climate change forecasting and predicted impacts into planning

THEREFORE BE IT RESOLVED THAT GNWT allocate adequate funding and support to update emergency management plans to include climate change and provide resources to fully implement plans for every community in a timely and strategic manner.



2019-10-1 Adaptation Plans

WHEREAS the development of Adaptation Plans is a critical element in ensuring the resiliency of communities;

AND WHEREAS securing funding to develop and implement Community Adaptation Plans is critical to their completion;

AND WHEREAS the GNWT identified Supporting Communities both fiscally and from a resource basis as a priority within the Pan-Territorial Adaptation Strategy;

THEREFORE BE IT RESOLVED THAT the Federal Government should ensure that adequate funding is available to ensure that Adaptation Plans are completed for all NWT communities including a thorough evaluation of all municipal infrastructure.

AND FURTHER THAT the GNWT assist communities to complete their Adaptation Planning and Hazard Mapping and Implementation;

AND FURTHER THAT the GNWT explore opportunities to assist communities through the development of various tools.

