



2030 NWT CLIMATE CHANGE STRATEGIC FRAMEWORK 2019-2023 Action Plan

CADRE STRATÉGIQUE SUR LE CHANGEMENT CLIMATIQUE DES TNO 2030 Plan d'action 2019-2023

Le present document contient la traduction française du résumé

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EXECUTIVE SUMMARY

Climate change is impacting the Northwest Territories' (NWT) natural environment, the health and safety of its residents, culture and heritage, infrastructure, and the economy. The Government of the Northwest Territories (GNWT) recognizes the need to address climate change, and as such, became signatory to the federal Pan-Canadian Framework for Clean Growth and Climate Change, and furthermore identified the development of a territorial climate change strategy as a priority of the 18th Legislative Assembly.

On May 1, 2018, the GNWT released the 2030 NWT Climate Change Strategic Framework (the Framework). The Framework focuses on three key goals: transition to a lower carbon economy; improve knowledge of climate change impacts; and build resilience and adapt to a changing climate. The 2030 NWT Climate Change Strategic Framework 2019-2023 Action Plan (the Action Plan) is a key implementation piece of the Framework. It has been developed by the GNWT in collaboration with various partners, and is the first of two five-year plans to address the goals of the Framework.

Engagement on the development of the draft Action Plan took place during the spring and summer of 2018, and included territorial and federal governments, Indigenous governments and/or organizations, community governments, non-government organizations, industry, and academia. A public review period on the draft Action Plan was conducted during November 2018, resulting in additional input and valuable feedback for consideration and incorporation into the Action Plan.

The Action Plan is interconnected with the implementation of the Energy Action Plan 2018-2021 (Energy Action Plan) and the NWT approach to carbon pricing, with actions to support the NWT's transition to a lower carbon economy (Goal 1). The majority of the actions in the Action Plan are focused on improving knowledge of climate change impacts (Goal 2), through planning, management and use of information, and enhanced research and monitoring. Actions to build resilience and adapt to a changing climate (Goal 3) are also key actions in the Action Plan, and aim to support ecosystem viability, manage

the natural environment and demands on it, protect and support people, and design, build and maintain resilient infrastructure. The two cross-cutting themes include actions applying to all three goals, which are focused on leadership, communication and capacity-building as well as understanding the economic impacts and opportunities resulting from climate change.

The structure of the Action Plan is divided into three parts. Action items with secured funding and resources under the three goals and two cross-cutting themes are outlined in Part 1: Actions. Partnerships will be key to their implementation. There are over 100 action items identified within Part 1, with implementation for most of these actions to commence in 2019. Important priorities that will require the pursuit of funding are included in Part 2: Areas for Future Collaboration. Significant federal and GNWT investment is required to advance these priorities in the short term, and work is underway to pursue potential funding sources that have been identified for each action area. Part 3: Implementation, Reporting and Measuring Progress, outlines steps needed

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to form new partnerships and strengthen current partnerships, and to secure funding to implement Part 2. Mechanisms for regular reporting and evaluation, including a formal review of the Action Plan in 2024 and prior to developing the 2025-2029 Action Plan, are also described in Part 3. Lastly, preliminary indicators have been identified in the approach for measuring progress, serving as a basis to develop a comprehensive set of indicators in 2019.

Implementing the Framework is a high priority for the GNWT. Despite its small population and limited resources, advocating widely and continuing to seek resources to support the full implementation of the Action Plan will be important steps in addressing the significant climate change impacts felt in the territory. With an increased understanding of climate change impacts, the NWT will be well-positioned to incorporate

innovative approaches into adaptation planning and execution, and will have an opportunity to become a leader in the area of climate change adaptation in the North. This could lead to exporting knowledge and expertise, and attracting researchers, resulting in northern investment and economic opportunities.

Le changement climatique a une incidence sur l'environnement naturel des Territoires du Nord-Ouest (TNO), la santé et la sécurité de ses résidents, la culture et le patrimoine, l'infrastructure et l'économie. Le gouvernement des Territoires du Nord-Ouest (GTNO) reconnaît la nécessité de s'attaquer au problème du changement climatique et, à ce titre, est devenu signataire du Cadre pancanadien sur la croissance propre et les changements climatiques établi par le gouvernement fédéral. De plus, il a décidé que l'élaboration d'une stratégie territoriale sur le changement climatique était une priorité de la 18^e Assemblée législative.

Le 1^{er} mai 2018, le GTNO a publié le Cadre stratégique sur le changement climatique 2030 des TNO (le Cadre). Le Cadre met l'accent sur trois objectifs clés : la transition vers une économie à faibles émissions de carbone; le développement des connaissances sur les répercussions des changements climatiques; le renforcement de la résilience et l'adaptation au changement climatique. Le Plan d'action 2019-2023 du Cadre stratégique sur le changement climatique 2030 des TNO (le Plan d'action) est un élément clé de la mise en œuvre du Cadre. Il a été élaboré par le GTNO en collaboration avec divers partenaires et constitue le premier de deux plans quinquennaux visant à atteindre les objectifs du Cadre.

Les échanges avec le public concernant l'élaboration de l'ébauche du Plan d'action ont eu lieu au printemps et à l'été 2018 et comprenaient les gouvernements territoriaux et fédéral, les gouvernements ou organisations autochtones, les administrations communautaires, les organisations non gouvernementales, l'industrie et le milieu universitaire. L'ébauche du Plan d'action a été au public en novembre 2018, ce qui a donné lieu à des commentaires supplémentaires et à une précieuse rétroaction à prendre en considération et à intégrer au Plan d'action.

Le Plan d'action est lié à la mise en œuvre du Plan d'action énergétique 2018-2021 (Plan d'action énergétique) et de l'approche des TNO en matière de tarification du carbone, qui comprend des mesures pour appuyer la transition des TNO vers une économie à faibles émissions de carbone (objectif 1). La majorité des mesures du Plan d'action sont axées sur le développement des connaissances sur les répercussions des changements climatiques (objectif 2) grâce à la planification, la gestion et l'utilisation de l'information, ainsi que l'amélioration de la recherche et de la surveillance. Les mesures visant à renforcer la résilience et à s'adapter à un climat changeant (objectif 3) sont également des mesures clés du Plan d'action et visent à soutenir la viabilité de l'écosystème, à gérer

l'environnement naturel et les exigences qui s'y rattachent, à protéger et à soutenir la population, ainsi qu'à concevoir, à construire et à maintenir des infrastructures résilientes. Les deux thèmes intersectoriels comprennent des mesures qui s'appliquent aux trois objectifs axés sur le leadership, la communication et le renforcement des capacités, ainsi que la compréhension des répercussions et des possibilités économiques découlant des changements climatiques.

La structure du Plan d'action est divisée en trois parties. Les mesures de suivi assorties d'un financement et de ressources garantis dans le cadre des trois objectifs et de deux thèmes intersectoriels sont décrites à la partie 1, intitulée « Mesures ». Les partenariats seront essentiels à leur mise en œuvre. La partie 1 prévoit plus de 100 mesures, dont la plupart devraient être mises en œuvre à partir de 2019. Les priorités importantes qui nécessiteront un financement sont incluses dans la partie 2, intitulée « Domaines de collaboration éventuelle ». Des investissements importants du gouvernement fédéral et du GTNO sont nécessaires pour faire progresser ces priorités à court terme, et des travaux sont en cours pour trouver des sources de financement potentielles qui ont été déterminées pour chaque domaine d'action. La partie 3, intitulée « Mise en œuvre, rapports et mesure des progrès » décrit

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les étapes à suivre pour former de nouveaux partenariats, renforcer les partenariats actuels et obtenir des fonds pour mettre en œuvre la partie 2. Les mécanismes de production de rapports et d'évaluation périodiques, y compris un examen officiel du Plan d'action en 2024 avant l'élaboration du Plan d'action 2025-2029, sont également décrits à la partie 3. En dernier lieu, des indicateurs préliminaires ont été identifiés dans l'approche de mesure des progrès servant de base à l'élaboration d'un ensemble complet d'indicateurs en 2019.

La mise en œuvre du Cadre est une priorité capitale pour le GTNO. En dépit de sa faible population et de ses ressources limitées, la défense des intérêts à grande échelle et la poursuite de la recherche de ressources pour appuyer la mise en œuvre complète du Plan d'action seront des mesures importantes pour atténuer les répercussions considérables des changements climatiques sur le territoire. Grâce à une meilleure compréhension des répercussions des changements climatiques, les TNO seront bien placés pour intégrer des approches

novatrices pour planifier et exécuter des mesures d'adaptation, et auront l'occasion de devenir un chef de file dans le domaine de l'adaptation aux changements climatiques dans le Nord. Cela pourrait mener à l'exportation de connaissances et d'expertise et à l'attraction de chercheurs, ce qui se traduirait par des investissements et des possibilités économiques dans le Nord.

INTRODUCTION



Photo: Pat Kane

2030 NWT Climate Change Strategic Framework Vision

– By 2030, the NWT will enjoy a strong, healthy economy that is less dependent on fossil fuels (compared to 2005) and will have developed the knowledge, tools and measures needed to increase resilience and adapt to the changing northern climate.

The NWT Climate Change Strategic Framework 2019-2023 Action Plan (Action Plan) puts into motion the vision of the [2030 NWT Climate Change Strategic Framework](#) (Framework).

This 2019-2023 Action Plan guides the implementation of the Framework over the next five years, and is intended to present a broad summary of all significant actions underway and areas for future collaboration to address climate change in the NWT. A subsequent Action Plan will be developed, in conjunction with partners, to cover the period from 2025 to 2029, following a formal review in 2024.

The Action Plan builds on the goals and priorities established in the Framework and reflects the input received during an engagement process conducted from April to August 2018. Extensive input and feedback was received from within the GNWT and preliminary information was provided by partners identified. The resulting draft Action Plan was released for a four-week public review period in November 2018, and comments were carefully considered and incorporated into this Action Plan as appropriate.

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PARTNERS

As outlined in the Framework, the responsibility for taking action on climate change is shared by all segments of NWT society. During the implementation of the Action Plan, further collaboration with partners and potential partners will be a priority to develop areas for future collaboration into concrete actions. Key partners in the implementation of the Action Plan include:

- Government of the Northwest Territories;
- Government of Canada;
- Indigenous governments and/or organizations;
- Community governments;
- Co-management boards;
- Non-governmental organizations;
- Industry; and
- Academia (academic institutions and researchers).

See Appendix A for a list of potential partners and associated acronyms referred to in this document.

FLEXIBLE APPROACH

The Framework sets out three goals and identifies priority areas of action for achieving the Vision. Many of the action areas summarized in the Action Plan reflect the current state of knowledge on climate change impacts on the NWT and the collective wisdom of partners on how to respond to the challenges resulting from these impacts.

Partners, including the GNWT, will need to continue to work together to implement the Action Plan. The GNWT's commitment and investment to addressing climate change is demonstrated by the actions it is leading or partnering on to achieve, as listed in the Action Plan. The federal government is also providing support on several actions. As a small jurisdiction with limited resources, federal support, as well as support from other partners, will be needed to implement areas for future collaboration listed in the Action Plan. Many of these are dependent on federal funding support under the Pan-Canadian Framework on Clean Growth and Climate Change as well as other funding sources that may become available. To this end, steps will need to be taken by all partners to seek funding and establish partnerships. Work is underway to co-develop Canada's Arctic and Northern Policy Framework, which is expected to provide overarching guidance

to federal priorities, activities and investments in the Arctic, and may lead to further opportunities for collaboration and funding. A list of potential funding sources for areas for future collaboration, as well as the acronyms used when referring to funding sources, is included in Appendix B.

As funding opportunities are secured to implement areas for future collaboration, specific actions will be defined, refined, tracked and reported on. It is also expected that new actions will be identified and added to the Action Plan as implementation begins. Over time, it will be necessary to measure progress and periodically re-evaluate and validate priorities and future actions, based on new information, technologies and funding.

The GNWT will be responsible for leading and implementing many of the actions outlined in the Action Plan. The Department of Environment and Natural Resources (ENR), as the lead department for climate change, will oversee the implementation of the Action Plan and coordinate progress reporting on an annual basis for all GNWT and partner-led actions identified in the Action Plan. An annual report will provide an account of how the NWT is making progress on addressing the challenges associated with climate change.

INTRODUCTION

INTERCONNECTED INITIATIVES

While the Action Plan is intrinsically linked with the implementation of the [2030 Energy Strategy](#) and the NWT approach to carbon pricing, this document does not include specific actions defined within those initiatives. Rather, actions included within the [2030 Energy Strategy: Energy Action Plan 2018-2021](#) (released June 1, 2018) and the NWT approach to carbon pricing (released July 11, 2018) contribute significantly to meeting Goal #1 of the Framework through mitigation of greenhouse gases (GHGs). The GNWT Departments of ENR, Infrastructure and Finance will continue to work collaboratively to ensure coordination and implementation of these three interconnected initiatives.

OFFICE OF THE AUDITOR GENERAL OF CANADA RECOMMENDATIONS

The Framework details recommendations from the Office of the Auditor General (OAG) of Canada's October 2017 report on climate change in the NWT and outlines where additions were made to the Framework, or forecasted for the Action Plan, to meet these recommendations. Throughout the Action Plan, specific action items that address OAG recommendations are highlighted.

ACTIONS

The Action Plan is organized using tables that reflect actions and areas for future collaboration under the Framework's three goals and cross-cutting themes.

- Goal #1: Transition to a lower carbon economy
- Goal #2: Improve knowledge of climate change impacts
- Goal #3: Build resilience and adapt to a changing climate
- Cross-cutting: Leadership, communication and capacity
- Cross-cutting: Economic impacts and opportunities

The Action Plan has been divided into three parts:

- **PART 1: ACTIONS**
Climate change work currently initiated or resourced to begin within the 2019-2023 timeframe.
- **PART 2: AREAS FOR FUTURE COLLABORATION**
Critical or high priority action areas that require funding, additional capacity or other forms of support in order to proceed.
- **PART 3: IMPLEMENTATION, REPORTING AND MEASURING PROGRESS**
Steps needed to implement, report and measure progress on the Action Plan.

For each action and area for future collaboration, partners or potential partners have been identified. Additional information on the climate change related roles and responsibilities of various partners is provided in Appendix C.

1.0 ACTIONS



Climate change actions currently initiated or resourced to begin within the 2019-2023 timeframe are identified in Part 1 of the Action Plan. Actions with secured funding and resources

are listed under the Framework's three goals and two cross-cutting themes. These actions are largely led and resourced through the GNWT and

partners, with some support from the federal government, academic institutions and other partnerships.

GOAL #1: TRANSITION TO A LOWER CARBON ECONOMY

The Framework, the [2030 Energy Strategy](#) and the NWT approach to carbon pricing are three interconnected policy measures that together contribute to the goal of transitioning to a lower carbon economy.

The [Energy Action Plan 2018-2021](#) outlines approximately \$177 million in investments to improve the security, affordability and sustainability of energy supply and use in the NWT, including energy efficiency, electricity generation in diesel communities, renewable energy for community heating, and energy used for transportation and industry. These investments and other innovative projects, such as the Taltson hydro-electric project, represent the primary approach for reducing NWT GHG emissions, 96%

of which are due to fossil fuel use. The [Energy Action Plan 2018-2021](#) outlines 42 actions and initiatives to achieve the six strategic objectives of the [2030 Energy Strategy](#), while supporting partnerships with Indigenous governments and communities.

Further, in July 2018 the NWT announced its intention to introduce a carbon tax, effective July 1, 2019, starting at \$20 per tonne of GHG emissions, increasing annually to \$50 per tonne, with an exemption for aviation fuel. Carbon tax offsets include a 100% rebate at source of the carbon tax on heating fuel for most residents, businesses and governments, and annual rebates of carbon tax on fuel used to generate electricity for residential and business use, but not for industry. Large emitters will receive an annual rebate of 75% of the carbon tax paid on non-motive and heating fuel and the remaining 25%

will be put into individual accounts to be used for projects that reduce GHG emissions. Carbon tax legislation was introduced in the February-March 2019 Session of the 18th Legislative Assembly.

The Action Plan also summarizes remaining mitigation approaches not captured in the [2030 Energy Strategy](#), namely composting of organic waste, considerations for mitigation in new resource development projects and researching natural carbon sinks.

The following GHG emission reduction actions are being pursued to complement the actions and initiatives within the [Energy Action Plan 2018-2021](#) and further support the transition to a lower carbon economy as well as a lower carbon lifestyle for the residents of the NWT.

1.0 ACTIONS

Action Areas	Action Items	Status	Potential Partners ¹ (Lead in Bold)	Timeline	Existing Resources
1.1 Transitioning to a lower carbon economy	A. Implement the actions and initiatives outlined in the 2030 Energy Strategy: Energy Action Plan 2018-2021 ²	Ongoing	INF , AEA, NTPC, HCorp, Federal Departments, IGOs, Community Governments, Industry, NGOs	2019-2021	Existing federal and GNWT resources
	B. Implement NWT carbon pricing	Initiate in 2019	FIN	2019-2023 and ongoing	Existing GNWT resources
1.2 Addressing climate change in environmental assessment and licensing/permitting of resource development and other projects	A. Collaborate on policy development, information requirements and tools to integrate climate change considerations	Discussions initiated within the GNWT and with regulatory boards	ENR , ITI, Lands, Regulatory Boards , Industry, NGOs	2019-2020 and ongoing	Existing GNWT and Regulatory Board resources
	B. Include climate change considerations in GNWT submissions to regulatory boards	Discussions initiated within the GNWT	ENR , GNWT	2019-2020 and ongoing	Existing GNWT resources
1.3 Determining the potential value of natural carbon sinks	A. Undertake work to estimate carbon stored in NWT ecosystems	Initiated	ENR , FIN, Academia, NRCan (CFS), NGOs	2019-2020	Existing GNWT, NRCan (CFS) and academia resources
1.4 Improving GHG emissions tracking and reporting	A. Improve GNWT emissions tracking	Ongoing	ENR , INF, ECCC	2019-2020 and ongoing	Existing GNWT resources
	B. Refine GNWT and NWT emissions reporting methods ³	Ongoing	ENR , INF, FIN, ECCC	2019-2020 and ongoing	Existing GNWT resources

¹ See Appendix A for potential partners acronyms.

² This action item intends to address recommendations from [Office of the Auditor General of Canada's 2017 report](#) on climate change in the NWT. Refer to the [2030 NWT Climate Change Strategic Framework](#) (Appendix A) for further details.

³ See footnote 2

GOAL #2: IMPROVE KNOWLEDGE OF CLIMATE CHANGE IMPACTS

The NWT is experiencing numerous changes and impacts due to a rapidly warming climate; however, many knowledge gaps need to be better understood and addressed. Overarching action areas required to improve climate change knowledge include the planning, management and use of information, along with enhanced research and monitoring networks. Using the best available information to improve the understanding of current and future impacts of climate change based on traditional, local and scientific knowledge will be paramount.

In recent years, numerous research and monitoring initiatives or programs addressing climate change knowledge gaps have been undertaken by the GNWT, Indigenous and community governments, non-government organizations, the federal government, and academic institutions and researchers. To ensure that this type of work results in products or tools that help decision-makers cope and adapt to climate-related impacts, there are three key steps that need to be completed for most subject areas:

- Acquiring baseline data or information through research and monitoring
- Processing and assessing the data or information
- Using the processed data or information to make future projections and/or produce tools that support decision-making

Climate-related research and monitoring efforts have focused mostly on the acquisition of baseline data or information, and less so on processing and assessing data and information to turn into projections or tools that decision-makers can use. The actions items reflected will help close this gap.

1.0 ACTIONS

Action Areas	Action Items	Status	Potential Partners (Lead in Bold)	Timeline	Existing Resources
PLANNING, MANAGEMENT AND USE OF INFORMATION					
2.1 Supporting the GNWT Knowledge Agenda – climate change research	A. Leverage existing research programs to incorporate community-based participation through the development of community and academic partnerships ⁴	Ongoing	GNWT , IGOs, Academia, Community Governments, NGOs	2019-2023 and ongoing	Existing GNWT resources and academic research networks
	B. Support additional interdisciplinary research addressing economic, health, social and environmental change related to climate change	Ongoing	GNWT , IGOs, Academia, Community Governments	2019-2023 and ongoing	Existing GNWT resources and academic research networks
	C. Link traditional and local knowledge holders with researchers in discussions or research about climate change	Ongoing	ENR, IGOs , Academia, Community Governments	2019-2023 and ongoing	Existing GNWT resources and academic research networks
	D. Work with other jurisdictions, industry and academia on climate change related research, development and best practices for public infrastructure	Ongoing – participation in federal/provincial/territorial sessions and interaction or partnerships with academia, NRCan and NRC	INF	2019-2023 and ongoing	Existing GNWT resources
	E. Collaborate with the Transportation Association of Canada and the Canadian Permafrost Association on climate change related initiatives	Ongoing	INF , ITI (NTGS)	2019-2023 and ongoing	Existing GNWT resources

⁴ This action item intends to address recommendations from [Office of the Auditor General of Canada’s 2017 report](#) on climate change in the NWT. Refer to the [2030 NWT Climate Change Strategic Framework](#) (Appendix A) for further details.

Action Areas	Action Items	Status	Potential Partners (Lead in Bold)	Timeline	Existing Resources
PLANNING, MANAGEMENT AND USE OF INFORMATION					
2.2 Supporting conservation network planning	A. Develop a renewed strategy for conservation network planning	Ongoing	ENR , Lands, EIA, IGOs, NGOs, Land Use Planning Boards	2019-2021	Existing GNWT resources and application to the Nature Fund
2.3 Enhancing the use of traditional and local knowledge	A. Build climate change education into the Take A Kid Trapping and hunter education programs	Ongoing	ENR , IGOs, MACA, HSS	2019-2023 and ongoing	Existing GNWT resources
	B. Support the collection, analysis or synthesis of traditional knowledge through the NWT Cumulative Impact Monitoring Program to better understand environmental trends and cumulative impacts for use in decision-making	Annual review of project proposals	ENR , IGOs, Community Governments, Co-management Boards, Academia	2019-2020 and ongoing	Existing GNWT resources and leveraged funding from project partners
2.4 Improving management and use of data/information ⁵	A. Inventory and evaluate NWT environmental data and data products to support climate change actions	Ongoing	ENR , ISSC, ITI (NTGS)	2019-2021	Existing GNWT resources
	B. Develop and implement a central online resource to share climate change knowledge and information	A new position will be staffed in 2019 to support this work	ENR , ISSC	2019-2021	Existing GNWT resources
	C. Improve dissemination of climate change results and products	A new position will be staffed in 2019 to support this work	ENR	2019-2023	Existing GNWT resources

⁵ These action items intend to address recommendations from [Office of the Auditor General of Canada's 2017 report](#) on climate change in the NWT. Refer to the [2030 NWT Climate Change Strategic Framework](#) (Appendix A) for further details.

1.0 ACTIONS

Action Areas	Action Items	Status	Potential Partners (Lead in Bold)	Timeline	Existing Resources
RESEARCH AND MONITORING TO IMPROVE KNOWLEDGE					
2.5 Climate and weather	A. Evaluate monitoring network requirements, potential monitoring redundancies and prioritize monitoring gaps	Initiated	ENR, ECCC (MSC)	2019-2020	Existing GNWT and ECCC resources
	B. Continue, and develop options to enhance, climate monitoring at NWT monitoring sites	Ongoing	ENR, ECCC, PCA, Industry, Academia	2019-2023 and ongoing	Existing GNWT and ECCC resources
	C. Develop a plan for a northern climate hub to support delivery of climate services and products	Initiate in 2019	ENR, ECCC (CCCS)	2019-2020	Existing GNWT and ECCC resources
	D. Develop climate projections and climate indices	Initiated	ENR, ECCC, NRCan (CFS), Academia	2019-2023 and ongoing	Existing GNWT and ECCC resources
	E. Continue to monitor rates and dynamics of coastal erosion along the Beaufort Sea	Ongoing	NRCan (GSC), Community Governments, Federal Departments, ECE (ARI)	2019-2020 and ongoing	Existing NRCan resources
2.6 Permafrost	A. Collect existing ground temperature data along the Dempster and Inuvik-Tuktoyaktuk highways	Initiated	ITI (NTGS), INF, NRCan (GSC)	2019 and ongoing	Existing GNWT resources
	B. Develop a plan to undertake regional terrain sensitivity and geohazard mapping and monitoring	Initiated	ITI (NTGS), ENR, ISSC, NRCan (GSC), Academia	2019	Existing GNWT resources
	C. Compile ground temperature and geotechnical datasets for the NWT	Initiated	ITI (NTGS), INF, ENR, NRCan (GSC), Academia	2019 and ongoing	Existing GNWT resources

Action Areas	Action Items	Status	Potential Partners (Lead in Bold)	Timeline	Existing Resources
RESEARCH AND MONITORING TO IMPROVE KNOWLEDGE					
2.6 Permafrost (cont.)	D. Undertake community terrain mapping through a pilot study of two communities	Initiated	ITI (NTGS) , ENR, Academia	2019-2021	Existing GNWT resources
	E. Undertake permafrost related research along the Dempster and Inuvik-Tuktoyaktuk highways	Initiated	ITI (NTGS) , INF, NRCan (GSC), Academia	2019 and ongoing	Existing GNWT resources and leveraged project partner funding
	F. Collaborate and advise on academic permafrost research in NWT	Initiated	ITI (NTGS) , Academia	2019-2023 and ongoing	Existing GNWT resources
	G. Work to increase human resource capacity to enable progress on permafrost-related actions	Initiated	ITI (NTGS) , INF, ENR, NRCan (GSC)	2019-2023 and ongoing	Existing GNWT resources
2.7 Water and wetlands	A. Continue NWT water quality and water quantity monitoring which can contribute to the assessment of climate-related changes in quality and flow over time (including Community-based Water Monitoring Programs)	Ongoing	ENR , ECCC, IGOs	2019-2023 and ongoing	Existing GNWT resources
	B. Continue to support the snow survey network to contribute to a better understanding of climate-related change in winter precipitation	Ongoing	ENR	2019-2023 and ongoing	Existing GNWT resources
	C. Undertake NWT Wetland Inventory Mapping	In progress	Ducks Unlimited Canada , IGOs	2019-2021	Existing Ducks Unlimited Canada resources
	D. Assess cumulative impacts to water, including climate change, as reflected in the NWT Cumulative Impact Monitoring Program Water Blueprint	Annual review of Blueprint to form basis of project proposals	ENR , Academia, ECCC, IGOs, Community Governments	2019-2020 and ongoing	Existing GNWT resources

1.0 ACTIONS

Action Areas	Action Items	Status	Potential Partners (Lead in Bold)	Timeline	Existing Resources
RESEARCH AND MONITORING TO IMPROVE KNOWLEDGE					
2.8 Forests and vegetation	A. Monitor changes to forest growth, productivity, health and regeneration after natural and human-caused disturbances in the context of the changing climate	Ongoing	ENR , NRCan (CFS), Academia	2019-2023 and ongoing	Existing GNWT, NRCan (CFS) and academic research networks
	B. Conduct vulnerability assessments for forest landscape areas of interest	Initiated	ENR , NRCan (CFS)	2019-2020	Existing GNWT and NRCan (CFS) resources
	C. Improve understanding of changing wildland fire regimes	Initiated	ENR , NRCan (CFS), Academia	2019-2023	Existing GNWT and NRCan (CFS) resources
	D. Produce baseline NWT-wide vegetation classifications	Ongoing	ENR , ISSC, NRCan (CFS)	2019-2020	Existing GNWT and NRCan (CFS) resources
	E. Complete forest health surveys and reporting	Ongoing	ENR , NRCan (CFS)	2019-2023 and ongoing	Existing GNWT and NRCan (CFS) resources
2.9 Wildlife	A. Conduct wildlife climate change vulnerability assessments ⁶	Ongoing	ENR , IGOs, Resource Management Boards, ECCC, Academia	2019-2023 and ongoing	Existing GNWT resources
	B. Continue monitoring invasive and non-indigenous species and assess impacts from range shifts on wildlife	Ongoing	ENR , Resource Management Boards, IGOs, ECCC, Academia	2019-2023	Existing GNWT resources
	C. Establish the NWT Pests, Pathogens and Invasive Species Council	Establish in 2019	ENR , NWT PPISC, IGOs, Resource Management Boards	2019-2023	Existing GNWT resources

⁶ This action item intends to address recommendations from [Office of the Auditor General of Canada's 2017 report](#) on climate change in the NWT. Refer to the [2030 NWT Climate Change Strategic Framework](#) (Appendix A) for further details.

Action Areas	Action Items	Status	Potential Partners (Lead in Bold)	Timeline	Existing Resources
RESEARCH AND MONITORING TO IMPROVE KNOWLEDGE					
2.9 Wildlife (cont.)	D. Utilize the NWT Pests, Pathogens and Invasive Species Council to support rapid response programs and educational materials on future pests, pathogens and invasive species issues due to the changing climate	Initiate once the Council has been established	ENR , NWT PPISC	2019-2023	Existing GNWT resources
	E. Disseminate current and new information on the health and distribution of wildlife, including diseases and parasites	Ongoing	ENR	2019-2023	Existing GNWT resources
	F. Continue using remote sensing techniques to assess wildlife habitat and impacts due to climate change	Ongoing	ENR , ECCC (CWS)	2019-2023	Existing GNWT resources
	G. Enhance the knowledge of species presence, distribution and status to determine future needs based on a changing climate	Reports on the General Status Ranks for NWT are published every five years	ENR , Resource Management Boards, IGOs, ECCC, DFO	2019-2023 and ongoing	NatureServe Network and existing GNWT resources
	H. Assess cumulative impacts to caribou, including from climate change, as reflected in the NWT Cumulative Impact Monitoring Program Caribou Blueprint	Annual review of Blueprint to form basis of project proposals	ENR , Academia, IGOs, Community Governments	2019-2020 and ongoing	Existing GNWT resources

1.0 ACTIONS

Action Areas	Action Items	Status	Potential Partners (Lead in Bold)	Timeline	Existing Resources
RESEARCH AND MONITORING TO IMPROVE KNOWLEDGE					
2.10 Fish and marine mammals	A. Continue to improve baseline monitoring of species health and distribution with an emphasis on priority species of marine, anadromous and freshwater fishes, and marine mammals	Ongoing	DFO , ECCC, NRCan, IGOs, Resource Management Boards	2019-2023	Existing federal resources and academic research networks
	B. Continue monitoring temperature-dependent contaminants in subsistence species	Ongoing	DFO , ECCC, IGOs, Health Canada (guidelines)	2019-2023	Existing federal resources and academic research networks
	C. Continue to monitor impacts of diseases and parasites on species	Ongoing	DFO , Health Canada, IGOs	2019-2023	Existing federal resources and academic research networks
	D. Assess cumulative impacts to fish, including climate change, as reflected in the NWT Cumulative Impact Monitoring Program Fish Blueprint	Annual review of Blueprint to form basis of project proposals	ENR , Academia, DFO, IGOs, Community Governments	2019-2020 and ongoing	Existing GNWT resources
2.11 Human health and well-being	A. Communicate alerts and develop advisories related to extreme weather, natural disasters impacting health, zoonotic diseases and poor outdoor air quality	Ongoing	HSS , ENR, MACA	2019-2023 and ongoing	Existing GNWT resources
2.12 Public safety	A. Ensure residents, first responders, communities and the GNWT are better prepared to deal with the impacts of climate-related hazards	Public awareness activities conducted annually will be updated to reflect current hazards	MACA , Community Governments, IGOs, NWTAC, PSC, NRCan (GSC)	2019-2023 and ongoing	Existing GNWT resources

Action Areas	Action Items	Status	Potential Partners (Lead in Bold)	Timeline	Existing Resources
RESEARCH AND MONITORING TO IMPROVE KNOWLEDGE					
2.12 Public safety (cont.)	B. Update community emergency plans and incorporate methods for identifying and monitoring climate change related hazards and adapting to the increase in frequency and severity of such hazards	Ongoing	MACA, Community Governments , IGOs, GNWT	2019-2020 and ongoing	Existing GNWT resources allow delivery of five emergency workshops annually
2.13 Culture and heritage	A. Continue research to assess impacts to heritage resources from climate-driven landscape disturbances	Ongoing	ECE , IGOs	2019 and ongoing	Existing GNWT resources and CIRNAC's Climate Change Preparedness in the North
2.14 Public and community infrastructure	A. Complete community infrastructure risk assessments and high level adaptation options	Initiated	MACA , ENR, NWTAC, Community Governments, IGOs	2019 and ongoing	Infrastructure Canada and CIRNAC's Climate Change Preparedness in the North
	B. Seek funding to fill community infrastructure gaps	Ongoing	MACA , INFC, NWTAC, Community Governments, IGOs	2019 and ongoing	Existing MACA resources
	C. Improve documentation of GNWT infrastructure stability via more rigorous asset management activities on both vertical (i.e. buildings) and horizontal (i.e. highways and runways) infrastructure	Implemented – Documentation of asset management activities arising from routine inspections of vertical and horizontal infrastructure		INF	2019-2023 and ongoing

1.0 ACTIONS

Action Areas	Action Items	Status	Potential Partners (Lead in Bold)	Timeline	Existing Resources
RESEARCH AND MONITORING TO IMPROVE KNOWLEDGE					
2.14 Public and community infrastructure (cont.)	D. Update climate change risk assessments for both vertical and horizontal GNWT infrastructure ⁷	Implemented – Engineering risk assessments updated every five years for vertical infrastructure and annually for horizontal infrastructure	INF	2019-2023 and ongoing	Existing GNWT resources
	E. Collect and analyze ground temperature data to support the general knowledge base for GNWT infrastructure planning, design, construction and climate change impact monitoring ⁸	Implemented – Annual reporting generated from thermistor strings in building foundations, highways and runways	INF	2019-2023 and ongoing	Existing GNWT resources
	F. Continue to explore the potential for remote sensing and other technology to acquire data to allow monitoring and analysis of settlement and movement of GNWT infrastructure ⁹	Implemented – Satellite information reporting to be obtained from ISSC	INF, ISSC	2019-2020	Existing GNWT resources

Over the next five years, efforts will be largely focused on implementing the action items outlined for Goal #2. The results of this work are needed to understand how the changing climate is affecting the NWT and to implement effective measures to build resilience or adapt.

⁷ This action item intends to address recommendations from [Office of the Auditor General of Canada’s 2017 report](#) on climate change in the NWT. Refer to the [2030 NWT Climate Change Strategic Framework](#) (Appendix A) for further details.

⁸ See footnote 7

⁹ See footnote 7

GOAL #3: BUILD RESILIENCE AND ADAPT TO A CHANGING CLIMATE

Results obtained from the research and monitoring work outlined under Goal #2 will be used to better manage and adapt to climate change related impacts already occurring, and those yet to come. Where impacts are already evident and understood, some focused adaptation efforts are underway.

In recent years, the NWT has begun to integrate climate change considerations, which can include acknowledgment of current and future impacts and planning for adaptation, into plans, policies, operational practices and management functions. However, much more work is needed to adjust to current impacts and a wide range of possible future conditions and unanticipated events.

From 2019 to 2023, the focus for building resilience and adapting to a changing climate will be on four overarching action areas:

- *Supporting Ecosystem Viability* – As the northern landscape continues to warm and undergo rapid changes, ensuring the viability and sustainability of ecosystems is critically important to improving ecological, social and economic resilience at the landscape level in the NWT.
- *Managing the Natural Environment and Demands on it* – Components of the natural environment, such as water, forests and wildlife, are currently monitored and managed by the GNWT, Indigenous governments and others. As more information is known and anticipated about the current and future impacts resulting from climate change, steps need to be taken to adjust management approaches and decisions to acknowledge vulnerabilities and uncertainties, to incorporate traditional knowledge and new information, and to build resilience to address anticipated and accelerating changes.

- *Protecting and Supporting People* – The protection of people and culture is of utmost importance. Supporting communities, increasing community capacity and providing knowledge and options, will help NWT residents with building resilience and adaptation. As the northern climate changes, various levels of government must be able to anticipate, address and minimize risks and impacts to human health, public safety and culture and heritage.
- *Designing, Building and Maintaining Resilient Infrastructure* – For existing infrastructure, ongoing monitoring under Goal #2 will determine where potential upgrading or adaptation is needed to address climate change mitigation and impacts. For new infrastructure, the development of specific northern standards and changes to certain practices are needed to ensure that assets and facilities are resilient to future climatic conditions and climate change related risks.

The following action items are being pursued under these action areas to build resilience and adapt to a changing climate.

1.0 ACTIONS

Action Areas	Action Items	Status	Potential Partners (Lead in Bold)	Timeline	Existing Resources
SUPPORTING ECOSYSTEM VIABILITY					
3.1 Implementing the GNWT Land Use Sustainability Framework	A. Integrate climate change adaptation and mitigation factors into GNWT decision processes affecting land, water and natural resources	Work in preliminary stages of development	Lands , GNWT	2019-2020 revisions and testing	Existing GNWT resources
	B. Develop climate change indicators	Work in preliminary stages of development	ENR , GNWT	2020-2021 and ongoing	Existing GNWT resources
3.2 Completing/ reviewing regional land use plans	A. Work collaboratively within regional planning processes to incorporate climate change considerations into land use plans	Reviews of the Sahtu and Gwich'in Land Use Plans are beginning or underway; regional land use planning is underway in the Dehcho, and beginning in the Wek'èezhìi and the southeastern NWT	Lands , ENR, ITI, ECE, EIA, IGOs, Federal Government, Land Use Planning Boards and Committees	2019-2020 and ongoing	Funding for land use planning is a federal responsibility – GNWT continues to work with all planning partners
3.3 Implementing the conservation network	A. Establish Thaidene Nënë candidate protected area	Ongoing	ENR, IGOs , PCA, Lands, ITI, EIA	2019-2020	Existing GNWT resources, with potential additional support from Canada Nature Fund
	B. Establish Dinàgà Wek'èhodi candidate protected area	Ongoing	ENR, IGOs , Lands, EIA, ITI, ECCC (CWS)	2019-2020	Existing GNWT resources, with potential additional support from Canada Nature Fund
	C. Establish Ts'ude niline Tu'eyeta candidate protected area	Ongoing	ENR, IGOs , Lands, EIA, ITI, ECCC (CWS)	2019-2020	Existing GNWT resources, with potential additional support from Canada Nature Fund
	D. Conclude planning and decisions for remaining candidate areas	Initiated	ENR, IGOs , Lands, EIA, ECCC (CWS)	2019-2023	Existing GNWT resources, with potential additional support from Canada Nature Fund

Action Areas	Action Items	Status	Potential Partners (Lead in Bold)	Timeline	Existing Resources
MANAGING THE NATURAL ENVIRONMENT AND DEMANDS ON IT					
3.4 Applying permafrost expertise	A. Provide permafrost expertise for NWT projects and initiatives	Initiated	ITI (NTGS)	2019-2023 and ongoing	Existing GNWT resources
3.5 Implementing wildlife plans/strategies (key species, species at risk, invasive species)	A. Finalize and implement the Bathurst Caribou Range Plan, including the conservation of key habitats where climate change impacts are expected to be pronounced	Ongoing	ENR , Resource Management Boards, IGOs, Industry, NGOs	2019-2023 and ongoing	Existing GNWT resources and Polar Knowledge Canada funding
	B. Finalize the Boreal Caribou Range Plans, including management of climate change impacts on the ecosystem	Initiated	ENR , ECCC, Resource Management Boards, IGOs, Industry, NGOs	2019-2023 and ongoing	Existing GNWT resources and ECCC Canada Nature Fund
3.6 Capturing carbon in forests	A. Increase forest carbon sequestration by silvicultural practices, including planting in areas that have not returned to forest after natural disturbances and thinning in areas that are overly dense	Initiate in 2019	ENR , INF, ECCC	2019-2023	Existing GNWT resources and ECCC's Low Carbon Economy Fund

1.0 ACTIONS

Action Areas	Action Items	Status	Potential Partners (Lead in Bold)	Timeline	Existing Resources
PROTECTING AND SUPPORTING PEOPLE					
3.7 Responding to human health risks	A. Promote and support health and wellness activities to build community resiliency to climate change impacts	Ongoing	HSS , ENR, Community Governments, IGOs	2019-2023 and ongoing	Existing GNWT resources
	B. Work with communities to identify potential cleaner air shelters and modifications required to reduce impacts of wildland fire smoke on human health	Ongoing	HSS , Community Governments, IGOs	2019-2023 and ongoing	Existing GNWT resources
3.8 Increasing local food security and food production	A. Support country food-related research, including climate change impacts to community food security	Funding will be provided or leveraged to help support research over the next three years	ENR , HSS, ITI, IGOs	2019-2021	Existing GNWT resources
	B. Implement a sustainable livelihoods action plan to support country food research and programs	In development	ENR , HSS, ITI, IGOs	2019-2023	Existing GNWT resources
	C. Implement the NWT Agriculture Strategy to increase local food production	Ongoing	ITI , IGOs, Community Governments	2019-2022	Existing GNWT resources
3.9 Improving capacity and resilience of health and social services	A. Assess if essential services can be provided during extreme weather and climate-related events	Ongoing	HSS	2019-2023 and ongoing	Existing GNWT resources

Action Areas	Action Items	Status	Potential Partners (Lead in Bold)	Timeline	Existing Resources
PROTECTING AND SUPPORTING PEOPLE					
3.10 Updating community emergency plans and operations and maintenance procedures	A. Address climate-related hazards and adaptation measures in updated community emergency plans and operations and maintenance procedures (e.g. floods, blizzards, wildland fires, permafrost thaw, coastal erosion)	Phased approach – Five communities per year targeted for completion	Community Governments, MACA, IGOs, ENR, NRCan	2019-2023 and ongoing	Existing GNWT resources
3.11 Enhancing wildland fire disaster mitigation	A. Update and implement community wildland fire protection plans	Ongoing	Community Governments, ENR, MACA	2019-2023 and ongoing	Existing GNWT and community resources
	B. Support the implementation of FireSmart principles and consider the use of FireSmart programs for all communities	Ongoing	ENR, MACA, Community Governments	2019-2023	Existing GNWT resources
3.12 Community hazard mapping	A. Design a hazard mapping program, including permafrost, flooding, wildland fire, erosion and other climate-related impacts	Initiated	ENR, MACA, Lands, ITI, NWTAC, Community Governments, NRCan, Academia	2019-2023 and ongoing	Existing GNWT resources and CIRNAC's Climate Change Preparedness in the North program
3.13 Safely accessing land, water and ice	A. Pilot community focused ice information products to support on-ice travel and travel in ice filled waters	Initiate in 2019	ECCC (CIS and CCCS), ENR	2019-2022	Existing ECCC resources
	B. Implement the SmartICE monitoring and information service in select NWT communities to facilitate safe passage over ice	Community engagement initiated	SmartICE, IGOs, Community Governments	2020-2023	Existing federal resources
	C. Incorporate extreme weather warnings into public alerting system	Initiated protocol updates	MACA, ECCC	2019	Existing GNWT resources

1.0 ACTIONS

Action Areas	Action Items	Status	Potential Partners (Lead in Bold)	Timeline	Existing Resources
DESIGNING, BUILDING AND MAINTAINING RESILIENT INFRASTRUCTURE					
3.14 Supporting the Northern Infrastructure Standardization Initiative (NISI)	A. Continue active participation in the development of additional standards for northern infrastructure (NISI Phase II)	Three new standards being developed, two additional standards proposed	INF, MACA, SCC, ENR, HCorp, NWTAC	2019-2020 and ongoing	Existing GNWT and external resources
3.15 Adapting infrastructure to a changing climate	A. Construct the Tlicho All Season Road	Project initiated	INF	2019-2023	Transportation Division within INF
	B. Construct the Great Bear River Bridge	Project initiated	INF	2023	Funded under Transport Canada's National Trade Corridors Fund
	C. Complete permitting and construct the Mount Gaudet All Season Road	Project initiated	INF	2023	Funded under Transport Canada's National Trade Corridors Fund

As the climate is changing, continuing to develop tools and measures to build resilience and adapt to current and future changes is imperative. As greater understanding of climate change impacts are realized, as a result of this effort, the NWT will be well-positioned to incorporate innovative approaches into adaptation planning and execution, and has an opportunity to become a leader in the area of climate change adaptation in the North. This could lead to exporting knowledge and expertise, and attracting researchers, resulting in northern investment and economic opportunities.

CROSS-CUTTING: LEADERSHIP, COMMUNICATION AND CAPACITY-BUILDING

Improved leadership, communication and capacity-building focused on climate change are required to support all three goals of the Framework.

- *Leadership* – As the lead GNWT department for climate change, ENR will work collaboratively within the GNWT and with all external partners to provide overall leadership, coordination and guidance on climate change issues throughout the territory. The existing Energy and Climate Change Committee-of-Cabinet, Deputy Ministers Energy and Climate Change, and Assistant Deputy Ministers Climate Change committees, and a newly established GNWT Director-level Climate Change Working Group, will play a coordinating role across departments in seeking funding, establishing partnerships and sharing information on the

implementation of the Action Plan. ENR will also continue to engage with Indigenous and community governments, industry, non-governmental organizations and others to seek input on desired approaches for coordinating and guiding the implementation of the Action Plan in the NWT, such as through the potential establishment of external guidance mechanisms to foster collaboration, provide a venue for shared decision making, and ensure transparency.

- *Communication* – Climate change is a complex, cross-cutting issue that requires clear information about current and future challenges, and the options available to address these challenges. ENR will work with partners to identify and respond to the climate change information needs that exist within the GNWT and throughout the territory, with a focus on improving coordination and two-way communication with Indigenous and community governments through strengthened or new partnerships.

- *Capacity-building* – The GNWT is exploring avenues to build capacity within the GNWT and the NWT to meet the challenges of climate change going forward at local, regional and territorial levels. Increasing capacity will enable communities and individuals to build resilience and adapt to climate-related changes, but also to increase participation and leadership in broader climate change initiatives, including this Action Plan.

The following action items are being pursued to enhance leadership, communication and capacity-building.

1.0 ACTIONS

Action Areas	Action Items	Status	Potential Partners (Lead in Bold)	Timeline	Existing Resources
LEADERSHIP					
4.1 Reflecting climate change in governance and policy tools ¹⁰	A. Establish internal GNWT guidance mechanisms ¹¹ : <ul style="list-style-type: none"> • Director-level Climate Change Working Group • Assistant Deputy Ministers Climate Change Committee • Deputy Ministers Energy and Climate Change Committee • Energy and Climate Change Committee-of-Cabinet 	Ongoing – Semi-annual reporting schedule	GNWT	2019 and ongoing	Existing GNWT resources
	B. Coordinate GNWT climate change related project work	Ongoing	ENR, GNWT	2019-2023 and ongoing	Existing GNWT resources
	C. Add climate change considerations to new/revised territorial legislation and policies	Ongoing	ENR	2019 and ongoing	Existing GNWT resources
	D. Complete a jurisdictional scan of effective policy tools to support the Action Plan's implementation	Ongoing	ENR, GNWT	2019 and ongoing	Existing GNWT resources
	E. Include climate change content in existing community and Indigenous government training resources, and expand online governance training to include climate change	Initiated	MACA, ENR, NGO	2019-2020 and ongoing	Existing GNWT resources

¹⁰ These action items intend to address recommendations from [Office of the Auditor General of Canada's 2017 report](#) on climate change in the NWT. Refer to the [2030 NWT Climate Change Strategic Framework](#) (Appendix A) for further details.

¹¹ The functions of Deputy Ministers Climate Change Committee and Energy and Climate Change Committee-of-Cabinet are presented in their respective Terms of Reference documents, available at: https://www.eia.gov.nt.ca/sites/eia/files/terms_of_reference_-_energy_climate_change_dms_committee.pdf and https://www.gov.nt.ca/sites/flagship/files/resources/2017-04-01_tor_energy_and_climate_change_coc_0.pdf.

Action Areas	Action Items	Status	Potential Partners (Lead in Bold)	Timeline	Existing Resources
LEADERSHIP					
4.2 Pursuing funding sources for climate change initiatives	A. Develop funding requests to address climate change priorities	Ongoing	ENR , GNWT, IGOs	2019-2023 and ongoing	Existing GNWT resources
4.3 Establishing external guidance mechanisms to foster collaboration	A. Develop options for the establishment of a NWT climate change council or advisory body ¹²	Ongoing	GNWT , IGOs, NWTAC, NGOs, Industry	2019 and ongoing	Existing GNWT resources
COMMUNICATION					
4.4 Information sharing and education initiatives	A. Develop and implement a climate change outreach and communication plan ¹³	Initiated	ENR	2019-2021 and ongoing	Existing GNWT resources
CAPACITY-BUILDING					
4.5 Supporting community-based monitoring efforts	A. Continue community-based monitoring and implement additional community-based monitoring sites on a priority basis	Ongoing	ENR, MACA , IGOs, Community Governments, SmartICE	2019-2023 and ongoing	CIRNAC's Indigenous Community-based Climate Monitoring program

¹² This action item intends to address recommendations from [Office of the Auditor General of Canada's 2017 report](#) on climate change in the NWT. Refer to the [2030 NWT Climate Change Strategic Framework](#) (Appendix A) for further details.

¹³ See footnote 12

1.0 ACTIONS

Action Areas	Action Items	Status	Potential Partners (Lead in Bold)	Timeline	Existing Resources
CAPACITY-BUILDING					
4.6 Training for Indigenous and community governments	A. Ensure residents, first responders, communities and the GNWT are trained to be better prepared to deal with the impacts of all hazards, ranging from low through to very high risks	Ongoing	MACA , Community Governments, NWTAC, IGOs, ECCC	2019-2023 and ongoing	Existing GNWT resources
	B. Deliver workshops on adaptation, mitigation and best practices	Aim to deliver one to two workshops per year	MACA , Community Governments, IGOs	2019-2023 and ongoing	Existing GNWT resources
	C. Deliver climate change training through School of Community Government programming and workshops	Ongoing	MACA , ENR, NWTAC, LGANT, IGOs, Community Governments	2019-2023 and ongoing	Existing GNWT resources
4.7 Adaptation planning and support (regional and local level)	A. Integrate adaptation planning into emergency management, community plan and strategic plan workshop content	Initiate workshop content update in 2019	ENR, MACA , NWTAC, Community Governments	2019-2021 and ongoing	Existing GNWT resources
	B. Support regional or community adaptation planning and implementation of adaptation initiatives	Initiated	ENR , MACA, NWTAC, IGOs, Community Governments, Federal Departments	2019-2021 and ongoing	Existing GNWT resources

Through implementation of this Action Plan, the GNWT, working with partners, will provide leadership for a coordinated territorial approach to climate change mitigation and adaptation, and will support communication and capacity-building to help residents and communities.

CROSS-CUTTING: ECONOMIC IMPACTS AND OPPORTUNITIES

The projected economic impacts of climate change in the NWT over the next 20 years need to be determined to understand the ensuing costs if action is not taken to build resilience or adapt as

the climate changes. The results of this work will support further adaptation planning.

Some of the changes from a warming climate, as well as actions required to reduce GHG emissions, may result in economic opportunities or benefits to communities and residents in specific sectors.

Funding will be sought to further explore these opportunities. The following action area is being pursued to determine economic impacts and opportunities across the three goals of the Framework.

Action Areas	Action Items	Status	Potential Partners (Lead in Bold)	Timeline	Existing Resources
5.1 Estimating the overall economic cost implications of the combined impacts that may occur in the NWT due to climate change	A. Undertake a study focusing on: <ul style="list-style-type: none"> • Impacts on infrastructure • Impacts on quality of life • Impacts on economic activities • Cost-benefit analysis of adaptation measures 	Initiated	ENR, FIN, HSS, ITI, NWTAC	2019-2020	Funding secured from Natural Resources Canada

2.0

AREAS FOR FUTURE COLLABORATION



Photo: Pat Kane

The effects of climate change are advancing more rapidly in the NWT and northern Canada than the rest of Canada and the world. These realities were a motivating factor for the GNWT signing on to the Pan-Canadian Framework on Clean Growth and Climate Change (Pan-Canadian Framework) and partnering with Canada to implement the national framework.

Although the GNWT and partners have made significant commitments and investments toward addressing climate change, additional federal government and internal GNWT support and

resources will be needed to advance the 2030 NWT Climate Change Strategic Framework's goals of transitioning to a lower carbon economy, improving knowledge of climate change impacts, and building resilience and adapting to a changing climate as well as address the cross-cutting themes of leadership, communication and capacity-building, and economic impacts and opportunities.

In Part 1 of the Action Plan, action items with secured funding and resources have been identified. These actions are largely led and

resourced by the GNWT and partners, with some support from federal, academic and other partners.

To be able to advance the high priority action areas identified under Part 2 – Areas for Future Collaboration, significant federal investment and funding under the Pan-Canadian Framework is required. Funding and/or support from the GNWT, academia, non-government organizations, industry and other funding agencies will also be critical to advance this Action Plan.

AREAS FOR FUTURE COLLABORATION

The process the GNWT, through collaboration with partners, will undertake to identify funding sources, form partnerships, develop funding requests, and secure funding and capacity to carry

out the action areas identified in Part 2 will be outlined in Part 3 – Implementation, Reporting and Measuring Progress.

As funding and capacity are secured for Part 2 – Areas for Future Collaboration, they will be actioned and moved into Part 1 – Actions, and reported on annually.

GOAL #1: TRANSITION TO A LOWER CARBON ECONOMY

Action Areas	Potential Partners (Lead in Bold)	Potential Resources
6.1 Determining the potential value of natural carbon sinks <ul style="list-style-type: none"> Determine the potential economic value of stored carbon in the ecosystem 	ENR , FIN, Academia, NRCan (CFS), NGOs	Explore options for federal and NGO funding
6.2 Implement composting in small to medium-sized communities to reduce greenhouse gas emissions from community landfills <ul style="list-style-type: none"> Undertake planning and feasibility work Provide support for projects 	ENR , Community Governments	FCM's Green Municipal Fund

GOAL #2: IMPROVE KNOWLEDGE OF CLIMATE CHANGE IMPACTS

Action Areas	Potential Partners (Lead in Bold)	Potential Resources
7.1 Enhancing the use of traditional and local knowledge <ul style="list-style-type: none"> Document, use and transfer climate change related knowledge as prioritized by Indigenous governments to support decision-making pertaining to action areas 	IGOs , GNWT, NGOs	CIRNAC's Climate Change Preparedness in the North Fund and SSHRC
7.2 Climate and weather <ul style="list-style-type: none"> Undertake further climate modeling to predict future landscape change Implement a northern climate services hub 	ENR, ECCC (CCCS) , Academia, NRCan (CFS)	ECCC Canadian Centre for Climate Services and GNWT

2.0

AREAS FOR FUTURE COLLABORATION

Action Areas	Potential Partners (Lead in Bold)	Potential Resources
<p>7.3 Permafrost</p> <ul style="list-style-type: none"> Establish a permafrost monitoring network for the NWT Establish a permafrost data management system Analyze collected ground temperature data Assess sensitive permafrost terrain and inventory permafrost-related geohazards Interpret future permafrost behaviour across natural and built environments 	<p>ITI (NTGS), Lands, ENR, INF, ECE, Federal Departments, Regulatory Boards, Industry, IGOs, Community Governments, NRCan (GSC, CCMEQ), Academia</p>	<p>GNWT, Polar Knowledge Canada's Science and Technology Program, NSERC, NRCan and academic research networks</p>
<p>7.4 Water and wetlands</p> <ul style="list-style-type: none"> Review monitoring networks to assess appropriateness for determining trends and/or impacts related to climate change Prioritize and enhance water monitoring networks to improve assessments of climate change impacts Undertake climate change vulnerability assessments on priority surface water bodies to inform management decisions Identify and assess use of innovative technology for the remote assessment of water, snow pack and ice to assess changes, including those related to a changing climate 	<p>ENR, ECCC, ISSC, NRCan (CCMEQ), IGOs</p>	<p>ECCC's Environmental Damages Fund, CIRNAC's Climate Change Preparedness in the North, Polar Knowledge Canada's Science and Technology Program and GNWT</p>
<p>7.5 Forests and vegetation</p> <ul style="list-style-type: none"> Explore the use of remote sensing tools for inventory and update of vegetation cover Produce baseline NWT-wide vegetation classifications for remaining regions Update baseline vegetation land cover inventory (2001-2010 base) for fires, land use and other climate-related changes 	<p>ENR, NRCan (CFS), Academia</p>	<p>GNWT, NRCan's CFS and academic research networks</p>
<p>7.6 Wildlife</p> <ul style="list-style-type: none"> Assess indirect effects of climate change (such as parasites, diseases and pathogens) on species at risk Conduct monitoring, including community-based monitoring, to track species as they extend their ranges and become established in the NWT and assess resulting long-term impacts Develop surveillance systems to support predictions of species distribution changes Enhance monitoring of invasive and non-indigenous species for ongoing assessment of impacts from range shifts on wildlife 	<p>ENR, ECCC, Resource Management Boards, IGOs</p>	<p>GNWT, ECCC's Habitat Stewardship Program for Species at Risk Fund and Canada Nature Fund</p>

AREAS FOR FUTURE COLLABORATION

Action Areas	Potential Partners (Lead in Bold)	Potential Resources
<p>7.7 Human health and well-being</p> <ul style="list-style-type: none"> Support health vulnerability assessment(s) by external parties (e.g. consultants, researchers, etc.) to evaluate the impact of climate change on the physical and mental health and social well-being of northern communities Work with partners and the public to establish the requirements for a baseline surveillance and monitoring system for health related climate change indicators, such as mental health and social well-being, injuries, food and water security, environmental contaminants, extreme weather events and natural disasters, zoonotic diseases, chronic diseases and infectious disease 	<p>HSS, ENR, MACA</p>	<p>ISC's Climate Change Health Adaptation Program and HC's Climate Change and Health Adaptation Capacity Building Contribution Program</p>
<p>7.8 Public safety</p> <ul style="list-style-type: none"> Update the NWT Hazard Identification Risk Assessment to better predict which hazards could occur more frequently or become more extreme in the future Develop disaster mitigation plans for communities potentially impacted by the adverse effects of climate change Evaluate approaches to improve flow monitoring, flood prediction and emergency planning Monitor the condition of community trails 	<p>MACA, ENR, SmartICE, ECCC, Community Governments, IGOs, GNWT, Academia</p>	<p>CIRNAC's Climate Change Preparedness in the North Fund and Indigenous Community-based Climate Monitoring Program, Federation of Canadian Municipalities Funds and GNWT</p>
<p>7.9 Culture and heritage</p> <ul style="list-style-type: none"> Conduct vulnerability mapping for heritage resources at risk of destruction from coastal erosion in the Beaufort Sea Region 	<p>ECE, Academia, IGOs</p>	<p>ArcticNet, CMN, CIRNAC, SSHRC and academic research networks</p>
<p>7.10 Community infrastructure</p> <ul style="list-style-type: none"> Prioritize community infrastructure gaps to mitigate the impacts of climate change 	<p>MACA, Community Governments</p>	<p>INFC's Canada Infrastructure Bank, GNWT and Community Governments</p>

2.0

AREAS FOR FUTURE COLLABORATION

GOAL #3: BUILD RESILIENCE AND ADAPT TO A CHANGING CLIMATE

Action Areas	Potential Partners (Lead in Bold)	Potential Resources
8.1 Habitat management, biodiversity and restoration <ul style="list-style-type: none"> Undertake a gap analysis for the NWT Biodiversity Action Plan Develop strategies to prevent, as well as adapt to, invasive and non-indigenous wildlife, fish, marine mammal, insect and plant species 	ENR , NWT PPISC, ECCC, NGOs, IGOs	ECCC and GNWT
8.2 Supporting regional priorities <ul style="list-style-type: none"> Support communities experiencing impacts through focused resilience and adaptation initiatives 	GNWT , IGOs	CIRNAC's Climate Change Preparedness in the North Fund
8.3 Applying geohazard expertise <ul style="list-style-type: none"> Increase technical capacity for addressing climate change related geohazards in development applications and public and community infrastructure 	Lands , ITI (NTGS)	GNWT
8.4 Permafrost research coordination and application <ul style="list-style-type: none"> Ensure permafrost research conducted by Canadian and international agencies is coordinated and communicated to inform NWT decision-making 	ITI (NTGS)	GNWT
8.5 Implementing wildlife plans/strategies (key species, species at risk, invasive species) <ul style="list-style-type: none"> Work with wildlife co-management partners to consider and address climate change impacts on habitat for all barren-ground caribou herds within the NWT Plan for the enhanced resiliency of wildlife by understanding climate change impacts and stressors on mitigation measures Consider regulatory amendments (seasons, conditions and areas) to the <i>Wildlife Act</i> depending on changes in species distribution 	ENR , ECCC, Resource Management Boards, IGOs, Industry, NGOs	GNWT, ECCC Canada Nature Fund and Polar Science Canada
8.6 Responding to human health risks <ul style="list-style-type: none"> Develop and deliver educational and outreach materials to support communities in building resiliency and adapting to human health concerns 	HSS , ENR, NWTAC	ISC's Climate Change Health Adaptation Program and HC's Climate Change and Health Adaptation Capacity Building Contribution Program

AREAS FOR FUTURE COLLABORATION

Action Areas	Potential Partners (Lead in Bold)	Potential Resources
<p>8.7 Increasing local food security and food production</p> <ul style="list-style-type: none"> Building on the priorities to be identified in a sustainable livelihoods action plan, work collaboratively with partners to identify and secure funding to support projects Invest strategically in food production opportunities that address climate change risk mitigation through the implementation of the NWT Agriculture Strategy and Canadian Agriculture Partnership between the GNWT and the federal government 	ENR, ITI , HSS, EIA, IGOs, Community Governments, Academia	ISC's Climate Change Health Adaptation Program, other federal funding sources, GNWT and NGOs
<p>8.8 Enhancing wildland fire disaster mitigation</p> <ul style="list-style-type: none"> Establish modified community fuel breaks based on a risk-management approach 	ENR , Infrastructure Canada	INFC's Disaster Mitigation and Adaptation Fund
<p>8.9 Community hazard mapping</p> <ul style="list-style-type: none"> Develop outstanding components of the hazard mapping program, including permafrost, flooding, wildland fire, erosion and other climate-related impacts Provide information and training to communities to use hazard maps 	ENR , MACA, Lands, ITI, NWTAC, Community Governments, Academia	GNWT, CIRNAC's Climate Change Preparedness in the North fund and other federal funding sources
<p>8.10 Protecting threatened heritage resources</p> <ul style="list-style-type: none"> Conduct detailed studies/excavations of significant heritage resources at threat of destruction from climate-driven processes Develop remote sensing based monitoring protocols for heritage resources at risk of impact 	ECE , Academia, IGOs	CIRNAC's Climate Change Preparedness in the North, SSHRC and academic research networks
<p>8.11 Upgrading public and community infrastructure</p> <ul style="list-style-type: none"> Prepare and submit federal funding application for planning and environmental studies for the Slave Geological Province Road Develop a collaborative GNWT and Yukon Government climate research network using existing and additional monitoring instrumentation and coordinate new research and development projects along the Inuvik-Tuktoyaktuk and Dempster highways Undertake improvements, as needed, to respond to specific climate change related impacts to infrastructure 	INF, Yukon Government, Community Governments, MACA	INFC's Canada Infrastructure Bank, GNWT and Community Governments
<p>8.12 Responding to risks to private infrastructure</p> <ul style="list-style-type: none"> Provide guidance and information to the public regarding risks and management options for privately owned infrastructure affected by climate change 	ENR , Community Governments, GNWT	NRCan's Climate Change Adaptation Program, GNWT and Community Governments

2.0

AREAS FOR FUTURE COLLABORATION

CROSS-CUTTING: LEADERSHIP, COMMUNICATION AND CAPACITY-BUILDING

Action Areas	Potential Partners (Lead in Bold)	Potential Resources
9.1 Climate change information sharing and education initiatives <ul style="list-style-type: none"> Develop education resources focused on different audiences Deliver regular workshops Strengthen traditional knowledge based initiatives to include a climate change component 	ENR , NWTAC, ECE, HSS, ITI, MACA, IGOs, Federal Departments	GNWT, ECCC's Climate Action Fund and NGOs
9.2 Training for Indigenous governments and organizations to support climate change monitoring <ul style="list-style-type: none"> Support Indigenous Guardians Programs led by Indigenous governments in the NWT to monitor climate change using traditional, local and scientific knowledge where requested 	IGOs , ENR, Federal Departments	Federal guardians program funding

CROSS-CUTTING: ECONOMIC IMPACTS AND OPPORTUNITIES

Action Areas	Potential Partners (Lead in Bold)	Potential Resources
10.1 Undertaking sectoral assessments and adaptation planning <ul style="list-style-type: none"> Scope key sectors, including, but not limited to, transportation, ice roads, mining, agriculture, forestry, tourism and fisheries, to determine economic impacts and opportunities Explore opportunities to collaborate with think-tanks, academics and international stakeholders regarding the costs and benefits of climate-related changes in the NWT 	ENR, ITI , Industry, NGOs	NRCan, SSHRC, NGOs and CanNor
10.2 Regional forest harvest that substitutes low biomass for imported fossil fuels <ul style="list-style-type: none"> Assessment and implementation of community led harvesting for fuelwood for personal dwellings and district heating systems 	ENR , INF, Community Governments	CanNor, NRCan and non-government funding

IMPLEMENTATION, REPORTING AND MEASURING PROGRESS



IMPLEMENTATION

Part 1 – Actions

The actions in Part 1 of this Action Plan are largely supported through GNWT investments, with some federal and external funding. Lead partners will be responsible for implementing the actions and reporting annually on their progress.

Part 2 – Areas for Future Collaboration

Areas for future collaboration in Part 2 will require significant multi-year investments and significant federal government and GNWT funding to implement. The GNWT has limited funding to support work with Indigenous and community

governments to begin to implement specific actions; however, the following steps will need to be taken by the GNWT and partners to secure funding to support Part 2, thereby ensuring these very important areas for future collaboration are addressed.

3.0

IMPLEMENTATION, REPORTING AND MEASURING PROGRESS

- *Identify Potential Funding Sources* – ENR is working with GNWT departments, the federal government, Indigenous and community governments, and others to identify available funding programs and initiatives. Federal funding support is integral to implementing the priority areas identified for future collaboration. Substantial funding programs and initiatives are being initiated by the federal government to support the Pan-Canadian Framework. Other potential external funding sources, such as academic or private charitable foundation funding, will also be explored to advance priority areas identified in Part 2 of the Action Plan.
- *Forming Partnerships* – Forming new partnerships and strengthening existing partnerships will become increasingly necessary to access funding sources. Since climate change is impacting the natural environment, human health, public safety, culture and heritage, and infrastructure, governments and organizations will need to form partnerships and work collaboratively. Ongoing engagement with Indigenous and community governments, industry, non-governmental organizations, researchers and others to identify needs, refine priorities, and cultivate working relationships and partnerships will be a priority to advance areas for future collaboration over the next five

years. Supporting and enabling communities to determine and address climate change priorities is necessary.

- *Develop Funding Requests* – Providing assistance and support to Indigenous and community governments to access funding is one of the roles of the GNWT and the NWT Association of Communities. As funding sources are identified and partnerships are formed, funding requests will need to be developed by the GNWT, Indigenous and community governments, and others to access targeted funding sources.

The GNWT will explore both internal and external funding opportunities to support the Action Plan's implementation. There are a range of possible external funding sources and the GNWT will seek to leverage them to fund additional areas for future collaboration identified in the Action Plan.

- *Secure Funding* – Once funding is secured for a specific area for future collaboration, a new action will be added under the appropriate goal or cross-cutting theme and reported on annually. As such, the Action Plan will be a living document and may be subject to adjustments between 2019 and 2023 as progress is reported.

ANNUAL REPORTING

ENR will coordinate annual reporting to track progress on actions, provide updates on any new actions stemming from areas for future collaboration and identify resources expended to implement the Action Plan. ENR and the Department of Infrastructure will align annual reporting for the Action Plan and 2018-2021 Energy Action Plan.

The annual report will be shared widely with partners, Indigenous and community governments, and the public. As progress is made on actions and knowledge is gained by partners, the annual report and the Action Plan can be adapted to reflect these learnings.

The Action Plan will be a living document and undergo regular updates based on action updates or additions, and based on significant changes in federal approach or new developments in the climate change field.

IMPLEMENTATION, REPORTING AND MEASURING PROGRESS

MEASURING PROGRESS

The GNWT is committed to reporting annually on the progress being made by partners to address climate change and will undertake a formal review of the 2030 NWT Climate Change Strategic Framework and 2019-2023 Action Plan in 2024.

To support the annual reporting and the 2024 review, preliminary work has been initiated to identify quantitative and qualitative indicators to track progress and assess effectiveness for Part 1 actions. More comprehensive work to add to and further refine preliminary indicators using a program logic model will proceed in 2019 when the implementation of the Action Plan is initiated. A comprehensive set of indicators with measures focused on outcomes, both qualitative and quantitative, will be part of this undertaking.

Preliminary Indicators to Measure Progress

Goal #1: Transition to a Lower Carbon Economy

- NWT total annual emissions (as per ECCC's National Inventory Report)
- NWT energy-related emissions per capita (tonnes of carbon dioxide equivalent (CO₂e)/capita)
- Progress on projects and programs to address sector-specific targets as outlined in the annual Energy Strategy Action Plan Report

Goal #2: Improve Knowledge of Climate Change Impacts

- Planning, management and use of information
 - Progress to establish online resources
 - Traditional and local knowledge projects supported
 - Knowledge made accessible to the public
 - Information products or tools created (models, projections, maps) and distributed
- Research and monitoring activities by action area
 - # of new research projects funded and/or initiated
 - # of new monitoring programs funded and/or initiated
 - Summary of key findings and results published

Goal #3: Build Resilience and Adapt to a Changing Climate

- Supporting ecosystem viability
 - Successful implementation of the conservation network as measured by meeting objectives and timelines identified in Healthy Land, Healthy People: GNWT Priorities for Conservation Network Planning 2016-2021.
- Managing the natural environment and demands on it
 - Findings from vulnerability assessments
 - Management plans updated and implemented
- Protecting and supporting people
 - # of communities or people directly affected by a climate-related event
 - # of activities/events to support increased resilience and adaptation for on the land activities
 - # of heritage resources threatened by climate-driven processes that are recovered
- Designing, building and maintaining resilient infrastructure
 - Adaptation requirements included in design, construction and operations

3.0

IMPLEMENTATION, REPORTING AND MEASURING PROGRESS

Cross-cutting: Leadership, Communication and Capacity-Building

- Leadership
 - # and type of internal and external guidance mechanisms established and implemented
 - # of partnerships developed with associated projects initiated
 - Semi-annual update to Ministerial Energy and Climate Change Committee
- Communication activities
 - # and type of initiatives or campaigns undertaken
 - Uptake/response to communication initiatives

- Capacity-building activities
 - # of successful funding applications and funding secured
 - Amount of external resources secured to support Indigenous governments and communities
 - # of Indigenous and community governments supported
 - # of community emergency and adaptation plans completed or revised
 - # of communities or Indigenous and northern people that received training

Cross-cutting: Economic Impacts and Opportunities

- # of specific sectors assessments completed and findings from assessments published

2024 REVIEW

In early 2024, a formal review of the Framework and the Action Plan will be conducted to assess the progress made towards the vision and goals. The findings from the review, along with emerging issues, new technologies and new opportunities, will be used to consider potential revisions to the Framework and support the development of the 2025-2029 Action Plan.

LOOKING FORWARD



The NWT's climate will continue to warm and change in the coming decades, and the GNWT is committed to addressing the climate change impacts and potential opportunities that are already happening or are yet to come.

This 2019-2023 Action Plan guides the implementation of the 2030 NWT Climate Change Strategic Framework over the next five years, and presents a broad summary of significant climate change actions initiated or planned in the NWT during that period.

The GNWT's and partners' commitment and investment to addressing climate change are demonstrated by the current actions listed in Part 1 of the Action Plan. As a jurisdiction with limited resources, federal support, as well as support from other partners, will be needed to implement areas for future collaboration reflected in Part 2 that are a priority, but do not currently have resources to be carried out. The GNWT will continue to work collaboratively with all partners to identify funding opportunities, form or strengthen partnerships, develop proposals, secure funding, implement Part 1 and Part 2 of the Action Plan, and provide annual reporting on progress.

The NWT needs a coordinated approach to address these challenges and ensure that its economy is resilient, and that people and communities are prepared to take action and adapt where needed. Despite its small population and limited resources, the NWT will continue to advocate nationally and internationally to highlight the significant climate change impacts felt in the territory. By sharing powerful accounts of climate change impacts, and associated mitigation and adaptation actions and challenges, and by harnessing its unique traditional, local and western scientific knowledge, the NWT can demonstrate leadership in climate change action.

APPENDIX A:

POTENTIAL PARTNERS REFERENCED IN THE ACTION PLAN

Acronyms	Partners	Acronyms	Partners
GNWT	Government of the Northwest Territories Departments and Corporations		
ECE	Department of Education, Culture and Employment	INF	Department of Infrastructure
ECE (ARI)	Department of Education, Culture and Employment (Aurora Research Institute)	ISSC	Informatics Shared Services Centre
EIA	Department of Executive and Indigenous Affairs	ITI	Department of Industry, Tourism and Investment
ENR	Department of Environment and Natural Resources	ITI (NTGS)	Department of Industry, Tourism and Investment (Northwest Territories Geological Survey)
FIN	Department of Finance	Lands	Department of Lands
HCorp	NWT Housing Corporation	MACA	Department of Municipal and Community Affairs
HSS	Department of Health and Social Services	NTPC	Northwest Territories Power Corporation

Acronyms	Partners	Acronyms	Partners
Federal	Government of Canada Departments, Agencies and Councils		
CanNor	Canadian Northern Economic Development Agency	ISC	Indigenous Services Canada
CIRNAC	Crown Indigenous Relations and Northern Affairs Canada	NRC	National Research Council
DFO	Fisheries and Oceans Canada	NRCan	Natural Resources Canada
ECCC	Environment and Climate Change Canada	NRCan (CCMEO)	Natural Resources Canada (Canada Centre for Mapping and Earth Observation)
ECCC (CCCS)	Environment and Climate Change Canada (Canadian Centre for Climate Services)	NRCan (CFS)	Natural Resources Canada (Canadian Forest Service)
ECCC (CIS)	Environment and Climate Change Canada (Canadian Ice Service)	NRCan (GSC)	Natural Resources Canada (Geological Survey of Canada)
ECCC (CWS)	Environment and Climate Change Canada (Canadian Wildlife Service)	PCA	Parks Canada Agency
ECCC (MSC)	Environment and Climate Change Canada (Meteorological Survey of Canada)	PSC	Public Safety Canada
HC	Health Canada	SCC	Standards Council of Canada
INFC	Infrastructure Canada		

APPENDIX A: POTENTIAL PARTNERS REFERENCED IN THE ACTION PLAN

Acronyms	Other Partners	Acronyms	Other Partners
AEA	Arctic Energy Alliance	NWTAC	Northwest Territories Association of Communities
IGOs	Indigenous governments and/or organizations	NWT PPISC	Northwest Territories Pest, Pathogens and Invasive Species Council
LGANT	Local Government Administrators of the Northwest Territories	SmartICE	SmartICE climate change adaptation tool
NGOs	Non-governmental organizations		

APPENDIX B:

POTENTIAL FUNDING SOURCES

Federal Funding Sources			
Canadian Institutes of Health and Research (CIHR)		Health Canada (HC)	
FSCC-North	Food Security and Climate Change in the Canadian North	CCHACBCP	Climate Change and Health Adaptation Capacity Building Contribution Program
Canadian Northern Economic Development Agency (CanNor)		Indigenous Services Canada (ISC)	
Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)		CCHAP	Climate Change Health Adaptation Program
CCPN	Climate Change Preparedness in the North	Infrastructure Canada (INFC)	
EIPCP	Engaging Indigenous Peoples in Climate Policy	CIBA	Canada Infrastructure Bank
ICCM	Indigenous Community-Based Climate Monitoring	DMAF	Disaster Mitigation and Adaptation Fund
NCP	Northern Contaminants Program	Natural Resources Canada (NRCan)	
Environment and Climate Change Canada (ECCC)		CCAP	Climate Change Adaptation Program
AFSAR	Aboriginal Fund for Species at Risk	ICGRDDP	Innovation and Clean Growth Research, Development, and Demonstration Programs
CAF	Climate Action Fund	Natural Sciences and Engineering Council of Canada (NSERC)	
CCCS	Canadian Centre for Climate Services	Polar Knowledge Canada	
CNF	Canada Nature Fund	POLAR	Polar Knowledge Canada's pan-northern science and technology program
ECCP	EcoAction Community Funding Program	Public Health Agency of Canada	
EDF	Environmental Damages Fund	IDCCF	Infectious Diseases and Climate Change Fund
HSP	Habitat Stewardship Program for Species at Risk	Social Sciences and Humanities Research Council of Canada (SSHRC)	
LCEF	Low Carbon Economy Fund	Transport Canada	
Fisheries and Oceans Canada (DFO)		NTAI	Northern Transportation Adaptation Initiatives Program
CRF	Coastal Restoration Fund	NTCF	National Trade Corridors Fund

APPENDIX B: POTENTIAL FUNDING SOURCES

Non-federal Funding Sources			
BSC	Bird Studies Canada – James L. Baillie Memorial Fund	MC	McConnell – Canadian Environmental Grantmaker’s Network and Food Secure Canada
CMN	Canadian Mountain Network		
DUC	Ducks Unlimited Canada	MF	Metcalf Foundation – Carbon Landscapes Fund and Climate Blueprints Fund
ENR	GNWT Environment and Natural Resources Community Climate Change Adaptation Program	NWF	Northern Water Futures (part of Global Water Futures: Solutions to Water Threats in an Era of Global Change)
FCM	Federation of Canadian Municipalities Community Initiatives: Climate Mitigation Studies Funding Extreme Temperature: Climate Adaptation Studies Funding Green Municipal Fund Solid Waste: Climate Mitigation Studies Funding Transportation: Climate Mitigation Capital Project Grants Water: Climate Mitigation Studies Funding Wind Events: Climate Adaptation Studies Funding	SDTC	Sustainable Development Technology Canada – SD Tech Fund
		TC	Tides Canada
		TD-FEF	TD Bank – Friends of Environment Foundation Leadership Program: Building Capacity in Canada’s Environment Sector
		WHC	Wildlife Habitat Canada – Habitat Conservation Grants
		WWF Canada	World Wildlife Fund Canada – Arctic Species Conservation Fund and Go Wild Community Grants
GF	The Gordon Foundation		
IDRC	International Development Research Centre – Research Award: Climate Change 2019		

APPENDIX C:

PARTNERS CLIMATE CHANGE ROLES AND RESPONSIBILITIES

Indigenous Governments

Indigenous governments are those governments that have negotiated, or are in the process of negotiating, a land, resources or self-government agreement with the GNWT and the Government of Canada. Indigenous governments play an important role in identifying local challenges and potential opportunities related to a warming climate and taking action to ensure the economic, environmental, social, political and cultural well-being of Indigenous and northern people, while ensuring that the land, resources and self-government rights are respected. Indigenous governments also have an important role in ensuring that traditional and local knowledge will be incorporated to support decision-making for climate change adaptation, through supporting research and monitoring.

Community Governments

Community governments are municipal corporations, or in the absence of a municipal corporation, a local Indigenous government, recognized by the Minister of Municipal and Community Affairs as the prime public authority responsible for the provision of municipal services. Community governments play an important role in identifying local challenges and potential opportunities related to a warming climate and taking action to ensure the economic, environmental, social, political and cultural well-being of northern people. Community governments also have an important role in ensuring that local knowledge will be incorporated to support decision-making for climate change adaptation, through supporting research and monitoring.

Northwest Territories Association of Communities

The Northwest Territories Association of Communities (NWTAC) is a non-governmental organization whose members include all 33 communities in the NWT. NWTAC has been an expert in the needs of northern communities for over 50 years. NWTAC is the unified voice for communities on municipal goals determined by its members, and promotes the exchange of information among community governments. In response to the interests and concerns of its members, it has developed in-house climate change expertise and is a recognized leader in climate change in the NWT and the North. The NWTAC advocates for the interests of NWT communities to the Government of Canada and the GNWT to ensure that adequate funding, resources and expertise are available for communities to address climate change vulnerabilities.

APPENDIX C:

PARTNERS CLIMATE CHANGE ROLES AND RESPONSIBILITIES

Co-management Boards

Co-management Boards play a role in addressing climate change in the NWT through environmental assessments, the licensing/permitting of resource development and other undertakings, developing and updating regional land use plans, and managing wildlife and renewable resources (in settled land claim regions).

Co-management boards include regulatory boards, resource management boards and land use planning boards. The regulatory boards include: Environmental Impact Review Board (Inuvialuit), Environmental Impact Screening Committee (Inuvialuit), Mackenzie Valley Environmental Impact Review Board, Mackenzie Valley Land and Water Board, Gwich'in Land and Water Board, Sahtu Land and Water Board, Wek'èezhìi Land and Water Board, and Inuvialuit Water Board. The resource management boards include: Gwich'in Renewable Resource Board, Sahtu Renewable Resource Board, Wek'èezhìi Renewable Resource Board, and in the Inuvialuit Settlement Region the Inuvialuit Game Council, Wildlife Management Advisory Council (North Slope), Wildlife Management Advisory Council (Northwest Territories) and Fisheries Joint Management Committee. The land use planning boards include: Gwich'in Land Use Planning Board, Sahtu Land Use Planning Board and the Dehcho Land Use Planning Committee.

Industry

Industry refers to the broad range of companies, businesses, investment corporations, business development corporations, and industry associations that are active participants in and contributors to the NWT economy. These organizations play an important, and in some cases, leading role in addressing climate change opportunities and challenges throughout the NWT. They also advise on and participate in government directions and actions, and are key contributors to socio-economic resilience as climate change alters the NWT. Industry may report data on any impacts to their business, related to policies and programs implemented as part of the 2030 NWT Climate Change Strategic Framework, to help the GNWT monitor, evaluate and report on the performance of this Action Plan. Industry plays an important role in understanding, mitigating and adapting to the effects of climate change.

Non-governmental Organizations

Non-governmental organizations (NGOs) refer to non-profit organizations, either territorial or national, that are independent of governments. In the NWT, NGOs have an important role in advocating for and undertaking steps to address the impacts of climate change on the natural environment and social welfare. Some have a specific role in ensuring the public is informed of climate change related initiatives, and often provide educational tools and information that individuals can use to take action on climate change. NGOs provide expertise and valuable input with regards to climate change mitigation and adaptation.

APPENDIX C: PARTNERS CLIMATE CHANGE ROLES AND RESPONSIBILITIES

Government of the Northwest Territories (GNWT)

Education, Culture and Employment

The Culture and Heritage Division of the Department of Education, Culture and Employment's (ECE's) role is ensuring that residents of the NWT understand its heritage resources are at risk of impact from climate-driven processes, and the recovery of significant heritage resources will be needed. ECE is responsible for working with GNWT partners, Indigenous governments and organizations, and others to ensure the management of these heritage sites. The Aurora Research Institute (ARI) is a division of Aurora College, whose mandate is to improve the quality of life for NWT residents by applying scientific, technological and Indigenous knowledge to solve northern problems and advance social and economic goals.

Environment and Natural Resources

The Department of Environment and Natural Resources (ENR) is the lead department for climate change in the territory and is responsible for:

- leading the development of strategies for the NWT to address greenhouse gas emissions and to adapt to climate change impacts
- leading the sharing of climate change information to support territorial government departments and the public in their adaptation efforts
- promoting the use of scientific research, traditional knowledge and public education to understand climate change in the NWT
- representing the territorial government in national climate change initiatives

One of the responsibilities of ENR is to work with the federal government, Indigenous and community governments, and others to identify potential federal funding programs or non-government funding sources to fulfill the

actions identified in this Action Plan. ENR will work with partners to fulfill the climate change needs identified within the GNWT and NWT. The Department is a lead partner in climate and weather, water and wetlands, forest and vegetation, and wildlife-related actions. It also leads work on the GNWT Knowledge Agenda, conservation network planning, regulatory processes, waste management, country food security, traditional knowledge, information sharing and education initiatives.

Executive and Indigenous Affairs

The Department of Executive and Indigenous Affairs (EIA) works to ensure a mutually respectful intergovernmental relation between the GNWT and Indigenous, provincial, territorial, national and international governments is developed and maintained. These relationships will be important in many of the actions being proposed to help understand and mitigate climate change impacts. EIA also negotiates and implements land, resources and self-government agreements that address Indigenous rights in the NWT.

APPENDIX C:

PARTNERS CLIMATE CHANGE ROLES AND RESPONSIBILITIES

Finance

The Department of Finance is responsible for the implementation of the NWT approach to carbon pricing, which is intended to be effective July 1, 2019, based on \$20 per tonne of greenhouse gas emissions and increasing \$10 per tonne annually thereafter up to \$50 per tonne. The Department will rebate 100% of the carbon tax for heating fuel for most residents, businesses and governments, and will also rebate the NWT Power Corporation for carbon tax payments related to fuel needed to produce electricity, to ensure electricity rates do not increase. NWT residents will receive the Cost of Living Offset Credit, based on per adult and per child amounts that will increase along with the carbon tax rate increases, which will address carbon pricing in a high cost jurisdiction. Large emitters will be eligible for a 75% rebate on non-motive and heating fuel, and the other 25% will be set aside in a trust for GHG-reducing investments. The purpose of the carbon tax is to address the GNWT carbon pricing commitments under the Pan-Canadian Framework on Clean Growth and Climate Change in such a way as to provide a price incentive to reduce carbon-based fuel use, while as much as possible not affecting the local cost

of living for NWT residents or creating further barriers to economic development. The carbon tax will complement actions to reduce emissions and address climate change identified in the [2018-2021 Energy Action Plan](#) and the 2030 NWT Climate Change Strategic Framework 2019-2023 Action Plan.

Health and Social Services

The Department of Health and Social Services (HSS) will support external vulnerability assessments to evaluate the impact of climate change on the physical and mental health, and social well-being, of NWT residents. HSS will continue to work with its GNWT partners and territorial stakeholders to support research and monitoring of public health indicators related to climate change impacts, and ensure the health and well-being of NWT residents are protected.

Infrastructure

The Department of Infrastructure (INF) is the lead department responsible for the [2030 Energy Strategy](#) and its implementation through the [Energy Action Plan 2018-2021](#). The 2030 Energy Strategy guides the development of

secure, affordable and sustainable energy for transportation, heat and electricity, supports energy efficiency and conservation, and promotes renewable and alternative energy solutions for the NWT. By 2030, the strategy's vision is to reduce greenhouse gas emissions from electricity generation in diesel-powered communities and road vehicles. The strategy also works towards increasing the share of renewable energy used for space heating and increasing residential, commercial and government building energy efficiency.

INF's mandate is to provide services to the public and the GNWT with respect to the planning, design, construction, acquisition, operation and maintenance of government infrastructure, and to promote the development and increased use of energy efficient, renewable and alternative energy technologies. This mandate also includes the provision of regulatory safety services to the public. INF will continue to adapt the planning, design, construction and maintenance of public infrastructure by incorporating lessons learned from permafrost research, where appropriate to do so.

APPENDIX C:

PARTNERS CLIMATE CHANGE ROLES AND RESPONSIBILITIES

Industry, Tourism and Investment

The Department of Industry, Tourism and Investment (ITI), through the Northwest Territories Geological Survey, will continue with the research and monitoring of permafrost and prioritize the monitoring gaps in developed and natural environments. ITI will also continue to work with GNWT departments to ensure the economy is resilient, and new opportunities are identified and pursued.

In the spring of 2017, the NWT Agriculture Strategy – The Business of Food: A Food Production Plan 2017-2022, was released. This strategy serves as a guide to the NWT’s evolution from community to commercial food production and will aid in increasing local food security for NWT communities.

Informatics Shared Services Centre

The Informatics Shared Services Centre (ISSC) is responsible for the implementation of information systems, mapping, remote sensing, information management and project management. ISSC currently serves ENR, ITI and Lands, but also provides services to larger corporate needs on occasion. The ISSC promotes the use of responsible planning and utilizing common approaches and solutions to address problems that are repeated across the GNWT.

Lands

The Department of Lands (Lands) is responsible for addressing climate change through its coordination of project assessments on behalf of the GNWT for processes related to environmental assessments as well as licensing and permitting of resource development and other projects. It is important to take into account that traditional and scientific knowledge should be brought to bear in the effective and efficient management of land within the NWT. Lands will continue to work collaboratively with regional land use planning partners to incorporate climate change considerations when developing and reviewing regional land use plans, while continuing to implement the GNWT’s Land Use and Sustainability Framework. Lands will further support GNWT departments on community hazard mapping, including permafrost, flooding and wildland fire information.

Municipal and Community Affairs

The Department of Municipal and Community Affairs (MACA) continues to work with GNWT departments and other organizations on the research and monitoring of human health and well-being, and the safety of NWT residents related to climate change. It is MACA’s responsibility to update community emergency plans and operations while maintaining procedures in the changing climate. The Department will work with partners to ensure community hazard maps, public and community infrastructure, and proper training on adaptation planning are available to the residents of the NWT.

APPENDIX C:

PARTNERS CLIMATE CHANGE ROLES AND RESPONSIBILITIES

Federal Government

Crown-Indigenous Relations and Northern Affairs Canada

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) is supporting climate change actions in the North through the development of the Northern Adaptation Strategy and various funding programs related to climate change policy, adaptation and mitigation, and community-based climate monitoring. CIRNAC also provides funding support to the GNWT for various adaptation projects, works closely with Environment and Climate Change Canada and other federal departments to represent northern climate change needs and interests, and supports the implementation of the Pan-Canadian Framework on Clean Growth and Climate Change in the North.

Environment and Climate Change Canada

Environment and Climate Change Canada (ECCC) is the lead federal department for a wide range of environmental issues. ECCC addresses these issues through various actions, including implementing the Pan-Canadian Framework on Clean Growth and Climate Change (PCF); engaging with its strategic partners, including provinces, territories and Indigenous peoples; monitoring; scientific research; policy and regulatory development; and enforcing environmental laws. ECCC's focus is on minimizing threats to Canadians and the environment from pollution; equipping Canadians to make informed decisions on weather, water and climate conditions; and conserving and restoring Canada's natural environment. ECCC also undertakes actions to protect the environment, such as enhancing protection of Canada's endangered species, working with provinces and territories to set stronger air quality standards, emissions monitoring and reporting, providing incentives for investments that lead to cleaner air and healthier communities, and examining the implications of climate change on Arctic marine ecosystems.

Through the implementation of the PCF, the Department will continue to support efforts to address climate change, including those undertaken by other federal departments and other levels of government to reduce greenhouse gas emissions, help Canadians and communities adapt to the impacts of climate change, and enable sustainable economic growth. As part of this work, in collaboration with the GNWT, the Canadian Centre for Climate Services (CCCS) of ECCC has created the Northern Climate Services Liaison position, that is co-located in the GNWT, to enhance the delivery of climate services in northern Canada, support the formation of a northern climate organization and aid the NWT with accessing climate-related resources.

APPENDIX C:

PARTNERS CLIMATE CHANGE ROLES AND RESPONSIBILITIES

Fisheries and Oceans Canada

The Department of Fisheries and Oceans Canada (DFO) is responsible for working with partners on researching and monitoring of fish and marine mammals to improve our knowledge of the impacts of climate change in the NWT. DFO takes into account scientific evidence, the precautionary approach and climate change when making decisions affecting fish stocks and ecosystem management. DFO works with the territory, Indigenous peoples and other stakeholders to co-manage the Arctic Ocean, while working with Environment and Climate Change Canada and other federal departments to examine the impacts of climate change on Arctic marine ecosystems.

Indigenous Services Canada

The First Nation and Inuit Health Branch (FNIHB) of Indigenous Services Canada (ISC) works with partners to improve access to high quality health programming for Indigenous peoples. FNIHB supports access to a variety of health programs and services that assist First Nations and Inuit communities in addressing health priorities and attaining higher levels of health and well-being, including the long-term ability of First Nations and Inuit communities to adapt to the health impacts of climate change. FNIHB programming

is delivered in partnership with the territorial government and First Nations and Inuit partners via contribution agreements. Actively seeking feedback from partners helps inform and strengthen program and policy decisions.

Natural Resources Canada

The Department of Natural Resources Canada (NRCan) supports climate change adaptation efforts across Canada through its Adaptation Platform, a national forum that brings together key groups in Canada to collaborate on climate change adaptation priorities. The Adaptation Platform provides an enabling environment for adaptation, where decision-makers in regions and industry are equipped with the tools and information they need to adapt to a changing climate.

NRCan's Geological Survey of Canada (GSC) plays a role in research to understand the response of permafrost to a changing climate in priority areas for northern infrastructure development. GSC's research is used to reduce the risk of natural disasters and other threats, and protect natural environments. Additionally, NRCan's Canadian Forest Service (CFS) promotes environmental leadership, an approach to sustainable forest management planning and policies, and research-based understanding of the forests. The CFS

collaborates with the federal government, GNWT, industry and universities to address questions associated with climate change impacts and adaptation, forest health and productivity, forest carbon, wildland fire, and ecosystem processes. NRCan provides additional monitoring on the changes occurring in the North through geo-spatial work undertaken by the Canada Centre for Mapping and Earth Observation (CCMEO).

Parks Canada Agency

The Parks Canada Agency (PCA) is responsible for the protection of Canadian National Parks by limiting the development within them and the surrounding area, where possible. PCA develops programs and services so Canadians can experience more national parks, and learn about our environment and heritage. By working with surrounding communities, PCA supports the growth of local eco-tourism and helps to create jobs. The agency integrates climate change considerations into the management of northern parks and protected areas to ensure these areas fulfill the commitment of creating a social well-being, ecological health, sustainable livelihoods and economic prosperity.

