Government of Canada | Gouvernement du Canada

Government of Canada Adaptation Action Plan

Canada

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Minister's Foreword

Canada's climate has changed and will continue to change. The evidence is now at our doorsteps. Floods, wildfires, droughts, health issues– Canadians across the country are feeling the impacts of climate change and record-breaking weather events. Canada needs to adapt to these changes. We can and must mitigate greenhouse gas emissions that are driving human-induced climate change, and we're doing that by implementing the 2030 Emissions Reduction Plan. But as the inhabitants of this vast land we now call Canada have been doing since before our foundation as a country, we also must adapt our lives to the environment as it is and will be – not as we wish it were. With the launch of the Government of Canada Adaptation Action Plan (GOCAAP), we are setting out the centerpiece of our country's plan to adapt to a changing climate – from West to East to North. This first-of-its-kind document is the Government of Canada's down-payment on the ongoing national project that is our National Adaptation Strategy.

The case for investing in climate adaptation is clear. In a 2020 report, the Canadian Climate Institute highlights that insured losses for catastrophic weather events have tripled, totalling more than $18 billion between 2010 and 2019. If left unchecked, the impact of climate damages will increasingly undercut Canada's economic growth. As the costs of climate change mount, it pays to be prepared. Every dollar spent on adaptation measures today saves up to $15, including both direct and indirect economy-wide benefits. The dividends from smart adaptation investment include reducing costly repairs or replacement of lost or damaged infrastructure, avoiding disruption of supply chains, and protecting against climate-related health impacts that can cause havoc in our schools, hospitals, businesses and workplaces.

Adaptation is about reducing the impacts of these events and changes on Canadians and communities, and being better prepared to respond and recover. The choices and adaptation actions we take today will help decide the future of our communities, our livelihoods, our environment, and our economy. But what does that mean?

It means setting targets and making investments for:

- Stronger roads, bridges, sewers and other infrastructure
- Healthier communities
- Protecting nature and restoring biodiversity
- A more climate resilient economy and workers
- And better disaster preparedness

It also means advancing environmental justice. As we build systems and solutions that are more climate resilient, we have the opportunity to address systemic inequities that make some people more vulnerable to the impacts of climate change.

The National Adaptation Strategy is a whole-of-society blueprint for adaptation action, designed to raise awareness, set clear priorities and take proactive action on adaptation throughout

Canada. It will guide actions to reduce the negative impacts of climate change based on observed or expected changes in climate. It will improve health and wellbeing outcomes, build and maintain infrastructure, protect nature and biodiversity, support a strong economy and workers, and enhance disaster resilience. As the climate continues to change, our actions to prepare and respond to the impacts of these changes must also keep pace. The Strategy is designed to allow for regular updates as we work and learn together about how to best build resilience to the effects of climate change.

The GOCAAP will complement the adaptation work and strategies of provinces, territories and Indigenous partners. Bilateral Provincial and Territorial action plans will be developed to advance efforts on shared priorities. And everyone has a part – provinces, territories, municipalities, businesses, Indigenous partners and all residents of Canada. Through these shared partnerships and initiatives, the federal government is committed to growing momentum on adaptation through tangible actions across Canada.

As climate change impacts and extreme weather become an ever-increasing part of our lives, it is critical that we take urgent action. That is why the Government of Canada has made adaptation and climate resilience a priority. Investments in adaptation shape a future that is more resilient to the impacts of a changing climate. Building climate resilience means that we are not only prepared for climate change, but we can thrive under a changing climate.

The Honourable Steven Guilbeault,
Minister of Environment and Climate Change

Executive Summary

Climate change is a reality for Canada. This is the moment to address its effects head on, and ensure that we are building resilient communities and a strong economy. Canadians are already facing extreme weather events, such as Hurricane Fiona, which battered Atlantic Provinces and Eastern Quebec in September 2022; extreme heat waves and wildfires in British Columbia and Alberta; droughts and crop losses in the Prairies; and catastrophic flooding in Ontario and Quebec.

The case for adapting to the changing climate is undeniable. The Canadian Climate Institute estimates that by 2025 Canada will experience annual losses of $25 billion as a result of climate change. This is equal to 50 per cent of projected 2025 Gross Domestic Product (GDP) growth.

Climate change is impacting people, communities and the natural environment on which we rely, in unprecedented ways. Some impacts occur gradually, such as sea-level rise and permafrost thaw. Warming temperatures can worsen air pollution and increase the spread of disease-carrying insects, such as ticks and Lyme disease, affecting the health of Canadians across the country. Other impacts are immediate—like extreme heat events, wildfires and flooding. These extreme events have devastating impacts on communities and impose significant financial burdens, which are expected to worsen considerably in the foreseeable future. Reports consistently show that prudent action to support resilient economies and communities involves making investments and preparing ahead of time to prevent the cascading of climate impacts down the road.

The *National Adaptation Strategy* (NAS) provides a roadmap for whole-of-society action on adaptation that will help prepare communities for the impacts of climate change. The Strategy lays out a vision for a resilient society and identifies goals, objectives and targets in five key systems that affect the daily lives of Canadians:

- Disaster Resilience
- Health and Wellbeing
- Nature and Biodiversity
- Infrastructure
- Economy and Workers

For each system, the Strategy sets a long-term transformational goal and medium-term objectives for ensuring resilience in Canada. The Strategy establishes guiding principles to ensure these goals and objectives are achieved in a just and fair way. It identifies national adaptation priorities to address current climate change impacts, reduce barriers to adaptation, and lay the foundations for transformational action so we are prepared for the future.

The *Government of Canada Adaptation Action Plan* (GOCAAP) is the policy and program framework that shows how the Government of Canada contributes to achieving the proposed targets, goals and objectives laid out in the NAS. While federal action is one key part for implementing the NAS, collaboration with provinces, territories, Indigenous Peoples, the private sector and all Canadians is critical to our collective success.

The Action Plan outlines the federal role in meeting adaptation goals, objectives and targets. It also identifies the tools the Government of Canada uses to make Canada more resilient to climate impacts including:

- supporting informed planning and decision-making
- generating scientifically sound, foundational climate change data
- convening partners and stakeholders
- setting long-term policy direction, along with regulatory measures (e.g., codes and standards for resilient infrastructure) and targeted investments
- working with provinces and territories to develop bilateral action plans for adaptation and co-development of the Indigenous Climate Leadership Agenda with Indigenous partners—collaborations that will maximize the impact of efforts made at different levels

Government of Canada Actions that Support Adaptation

The Action Plan has a comprehensive inventory of federal actions that implement NAS objectives. This is the first time such an inventory has been developed and published. It provides partners and stakeholders with a clear view of how their efforts can be complemented or supported by federal initiatives.

The Government of Canada will implement actions to address both the short-term and long-term climate change issues and risks facing Canadians. Federal actions in the GOCAAP can be grouped in two ways: actions that make targeted contributions to each of the five National Adaptation Strategy systems, and those that are cross-cutting.

Summary of Key Actions under each NAS System

Taking action to enhance Canada's emergency management and disaster risk reduction capabilities

The Government of Canada is supporting Canadians to prepare for, respond to, and recover from climate-related disasters. Government investments include:

- reducing the risks of wildfire in our communities by investing up to $284 million over five years to enhance community prevention and mitigation activities, support innovation in wildland fire knowledge and research, and establishing a Centre of Excellence for Wildland Fire Innovation and Resilience
- ensuring that all Canadians have access to free, up-to-date and authoritative flood hazard maps by investing up to $164 million over five years and working with provinces and territories to increase Canada's resilience to flooding by expanding the Flood Hazard Identification Mapping Program

Taking action to protect the health and wellbeing of Canadians

The Government of Canada will invest in new measures help rapidly scale up efforts to protect individuals, communities and health systems from climate change impacts. Federal investments to build resilience in the health sector include:

- up to $30 million over five years to expand Health Canada's Protecting Canadians from Extreme Heat program to provide the best available guidance and resources to Canadians in addressing extreme heat
- up to $13 million over five years to renew and expand the HealthADAPT Program to support partners across Canada in creating climate-resilient health systems

Taking action to enhance a thriving natural environment

Nature is one of our greatest allies in the fight against climate change. By leveraging nature's inherent ability to protect against climate change impacts, we can build healthy ecosystems that halt and reverse biodiversity loss, and enable nature to fully recover to allow for natural and human adaptation. For example, wetlands are natural ecosystems that regulate water flow, prevent flooding and mitigate drought. The Government of Canada is implementing a number of conservation programs to support projects that build more resilient natural environments, including:

- supporting the goals of protecting 25% of Canada's land and waters by 2025, and 30% by 2030 by conserving and protecting national wildlife areas, Indigenous Protected and Conserved Areas, and conserving species at risk through Canada's Enhanced Nature Legacy and Marine Protected Areas Program
- restoring ecological connectivity to allow species to move freely and better adapt to a changing climate through the National Program for Ecological Corridors

Taking action to enhance our resilient natural and built infrastructure

Climate change is damaging the critical infrastructure and services on which we rely. Significant investments in building climate-resilient infrastructure across Canada include:

- delivering the national Disaster Mitigation and Adaptation Fund to mitigate current and future climate-related disasters and the Natural Infrastructure Fund to support nature-based climate solutions
- investing in climate-resilient infrastructure by topping up the Disaster Mitigation and Adaptation Fund by up to $489 million over 10 years
- up to $60 million over five years to accelerate the use of climate-informed codes, standards and guidelines for resilient infrastructure in Canada
- investing up to $95 million over five years to deliver climate toolkits and services that increase the uptake of climate resilient practices and investments in communities

Taking action to protect the economy and workers

Canada's economy will anticipate, manage, adapt and respond to climate change impacts and will advance new and inclusive opportunities within a changing climate, particularly for communities at greater risk, Indigenous Peoples and vulnerable economic sectors.

This will be done by:

- enhancing the resiliency of Canada's supply chains in the event of disasters, providing workers with the tools and the skills they need to thrive under a changing climate and supporting industries, such as agriculture and mining, that are vulnerable to climate change
- investing up to $41 million over five years to pilot a new approach to implementing regional climate resilience through the new Climate Resilient Coastal and Northern Communities Program, which will enable communities to partner with other stakeholders to address barriers and develop novel solutions to climate change risks

Building our knowledge and understanding of Canada's changing climate

Protecting our communities, businesses and homes from climate change starts with decision-ready information. To ensure that Canadians have access to relevant climate change information and resources, expertise and advice to make climate-informed decisions, the Government of Canada is:

- undertaking state-of-the-art climate modelling and research, and sharing this information through the Canadian Centre for Climate Services to help Canadians make climate-informed decisions
- investing up to $70 million over five years to deliver a new Canada-wide climate science assessment, which will provide authoritative knowledge and new data about ongoing and future climate change in Canada and underpin the direction for future adaptation

Developing tools and resources to support communities in adapting

To turn awareness into action, people in Canada need to be able to access tools, programs, and resources to address the climate risks they face. Those at higher risk of climate impacts, including smaller communities, racialized and vulnerable groups, require additional support to keep pace with more severe impacts, The Government of Canada is investing in capacity building tools and resources to support communities in greatest need, including:

- expanding the Green Municipal Fund by up to $530 million to support a minimum of 1400 community-based adaptation initiatives by 2030-31, in collaboration with the Federation of Canadian Municipalities
- providing up to $62 million over 5 years to enhance existing programs, such as First Nation Adapt, Climate Change Preparedness in the North, Climate Change and Health Adaptation Program, which help to build adaptation capacity and support community-led adaptation measures

Establishing governance and demonstrating leadership

Clear accountabilities and responsibilities are needed to align and improve adaptation actions across society. Adaptation governance mechanisms bring together the perspectives of different orders of government, Indigenous Peoples, marginalized groups, the private sector, and civil society. In addition, integrating adaptation efforts into federal policy, planning and investments, the Government of Canada is leading by example in building climate resilient institutions.

The Government of Canada will:

- continue to work closely with First Nations, Inuit and Métis representatives and rights-holders to create a partnership model for climate action through the Indigenous Climate Leadership Agenda
- work to enshrine adaptation into everyday decision-making to ensure that all programs, policies, initiatives and departments consider climate change risks and support Canada's national adaptation objectives

Taken together, the Action Plan includes a total of 68 federal actions across 22 departments and agencies, illustrating the depth and breadth of action being taken. This builds on the $4.9 billion that has already been invested in adaptation and billions more for disaster response and recovery efforts since 2011. Much has already been accomplished, and we have a solid base from which to build; but the need to do more is clear and urgent.

Like the National Adaptation Strategy, the Government of Canada Adaptation Action Plan will be updated periodically as the climate continues to change, priorities shift, and new actions are designed and announced—it will evolve to meet Canada's needs to become increasingly resilient to climate change. Additionally, the GOCAAP will be updated if necessary to reflect the final contents of the National Adaptation Strategy. Coupled with Canada's efforts to reduce greenhouse gas emissions, described in Canada's *2030 Emissions Reduction Plan*, the GOCAAP communicates a comprehensive federal approach to prepare for climate change, build resilient communities, create jobs, and grow a strong economy.

1 The Climate Context

Canada's climate is changing at an alarming rate. Temperatures are rising twice as fast as the global average, and three times faster in the North. Higher temperatures are, in turn, driving more frequent and intense weather events that affect our physical environment, and pose real and increasing risks to the health and wellbeing of Canadians, our communities and our ways of life.

Climate change is not a future problem – it is a *now* problem. In September 2022, Hurricane Fiona battered the Atlantic Provinces and Eastern Quebec with high winds and heavy rainfall impacting families and communities, and causing widespread damage to infrastructure that and left thousands without access to power and the services they rely on for their health and safety. The scale and impact of this storm was unprecedented in Atlantic Canada.

However, Hurricane Fiona is only one of many recent examples. Every region across Canada is already experiencing the harsh and devastating impacts of climate change. Extreme heat waves have claimed hundreds of lives in Western Canada and Quebec; wildfires have destroyed communities in British Columbia and Alberta; droughts and extreme hail storms have resulted in crop losses and have disrupted livelihoods in the Prairies; and catastrophic flooding has occurred in every province across the country.

Climate change is also driving gradual, but more pervasive, impacts, such as permafrost thaw in the North, sea level rise and coastal erosion, invasive species, the spread of insect-borne diseases like Lyme disease, and shifting habitats and growing seasons. These challenges must be addressed to ensure our communities and livelihoods remain safe, secure and prosperous.

1.1 Adaptation is an Imperative

Adaptation means finding ways to adapt to a changing climate by making informed decisions, building resilience in our communities and businesses, and protecting each other and the places we value. It means ensuring that we are all better able to prevent, prepare, respond, and recover from climate impacts today and in years to come. Taking ambitious and collective action to adapt in ways that are equitable and inclusive will help ensure that everyone's lives and welfare are protected from the impacts of a changing climate.

The Government of Canada Adaptation Action Plan is an expression of the federal government's commitment to taking action. As we move into a future with an increasingly unstable climate, we are facing a pivotal moment in Canadian history. The choices and adaptation actions we take today will help decide the future of our communities, our environment, and our economy. Building climate resilience means that we will not only be prepared for climate change, but we will thrive.

1.2 Achieving Canada's Adaptation Priorities

Canada's National Adaptation Strategy

Canada's National Adaptation Strategy (NAS) provides a roadmap for whole-of-society action on adaptation. It establishes a shared vision of Canada's path for a more climate resilient future. The Strategy is organized around five interconnected systems that are most impacted by climate change:

- Disaster Resilience;
- Health and Wellbeing;
- Nature and Biodiversity;
- Infrastructure; and
- Economy and Workers

Figure 1. The five National Adaptation Strategy systems.

For each system the Strategy sets a long-term transformational goal and medium-term objectives for ensuring climate resilience in Canada. The Strategy also establishes guiding principles to ensure these goals and objectives are achieved in a just and fair way. The Strategy identifies national adaptation priorities to address current climate change impacts, reduce barrier to adaptation, and lay the foundation for transformational action so Canada is prepared for the future.

In order to enable whole-of-society action in the short-term under the National Adaptation Strategy, the Government of Canada is also proposing a set of targets for discussion and refinement, as needed. Achieving these proposed targets will require action from governments, communities, individuals, and the private sector (See Annex 4).

Canada's National Adaptation Strategy Guiding Principles

1. Respect jurisdictions and uphold Indigenous rights
2. Advance equity and environmental justice
3. Take proactive, risk-based measures to reduce climate impacts before they occur
4. Maximize benefits and avoid maladaptation

These systems were selected through targeted engagement with provinces and territories, National Indigenous Organizations, and other key partners. They represent the overarching climate change issues and risks facing Canada's communities, economies, and environment. The systems are aligned to key areas of risk and vulnerability that are identified in the *Canada in a Changing Climate* national assessment series.

The Government of Canada Adaptation Action Plan

The Government of Canada Adaptation Action Plan (GOCAAP) is the Government of Canada's implementation documents for the National Adaptation Strategy**.** It lays out how the Government of Canada is making strategic and targeted actions to help meet the Strategy's goals and objectives, while respecting the federal government's role and authority for action. Through the A ction Plan, the Government of Canada is delivering 68 actions to advance adaptation throughout the five NAS systems and address both immediate and future climate risks to Canada. Each action directly supports the Strategy's objectives, with many actions helping to achieve multiple objectives at once.

However, meeting the transformational goals and objectives of Canada's National Adaptation Strategy requires whole-of-society action and collaboration. To support regional and local implementation, the Government of Canada is committed to developing joint federal-provincial and federal-territorial action plans in each province and territory to advance adaptation priorities in areas of shared or intersecting jurisdiction.

The Government of Canada will also support adaptation actions in Indigenous communities through existing and new federal measures, as well as through the Indigenous Climate Leadership Agenda to identify a path forward for self-determined adaptation action that addresses Indigenous Peoples' climate priorities.

Indigenous Peoples are rights-holders, knowledge-holders and leaders in climate adaptation. They also face disproportionate costs and risks from climate change, including significant risks to Indigenous ways of life. Many Indigenous communities are advancing self-determined or self-governed adaptation actions as keepers of their territories and communities. Further systematic integration of adaptation measures in infrastructure, health, environmental protection, economic development and emergency management services, are needed to support resilient and sustainable Indigenous communities.

Taken together, these initiatives will help implement Canada's national adaptation priorities.

1.3 The Adaptation Cycle

Adaptation is a long-term process. The climate change risks we are facing today will not be the same risks we will face in the future. Effective adaptation is an ongoing process of learning

about risks, setting new priorities, planning against these priorities and implementing actions, evaluating the effectiveness of these actions, and making adjustments, as necessary.

Canada's National Adaptation Strategy is contributing to an ongoing cycle of national assessments, and is initiating targeted actions and a nation-wide monitoring and review process to strengthen and refocus the national adaptation response over time (see figure 2).

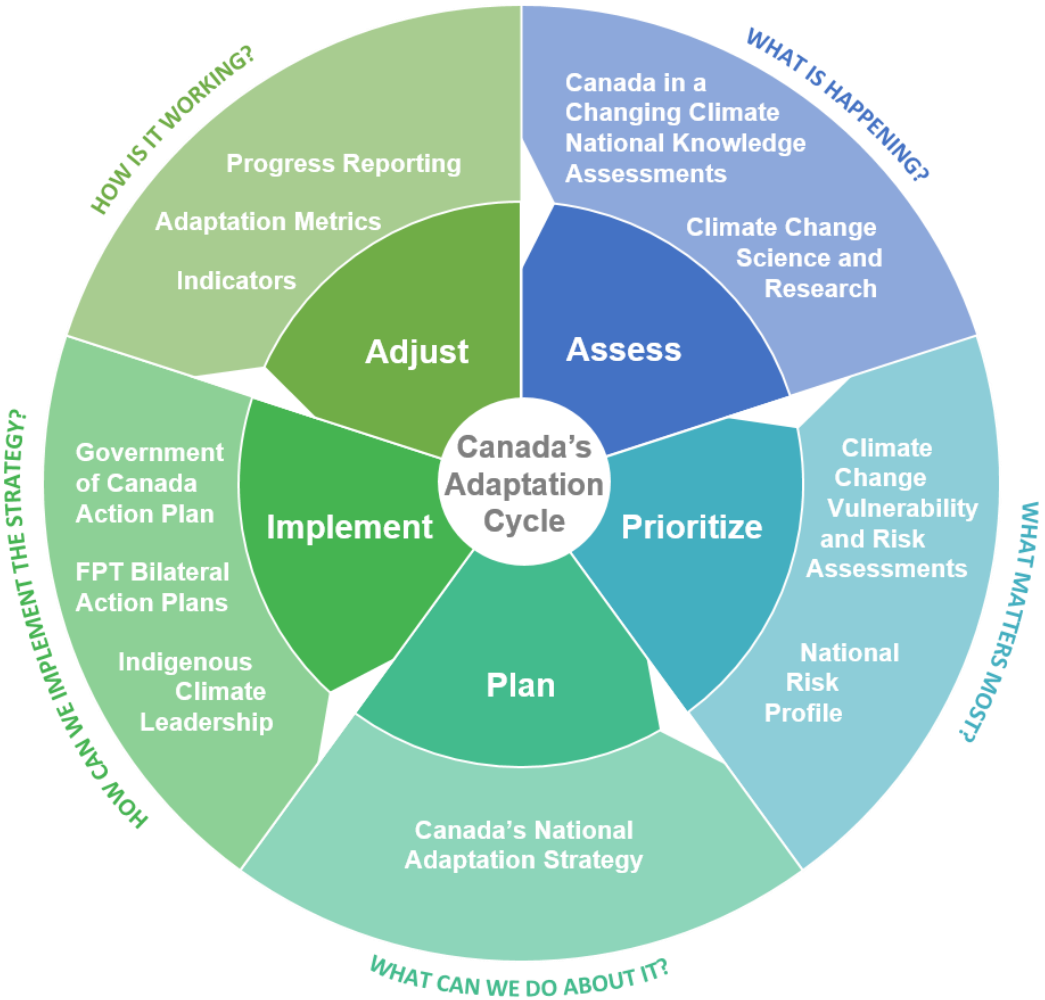

Figure 2. Graphic showcasing Canada's adaptation cycle and where the GOCAAP and NAS fit within this process.

The GOCAAP will grow and evolve as the Government of Canada and our partners continue to research and assess our evolving climate change risks and explore opportunities for new actions.

The Action Plan will be reviewed and updated at least every five years. Using metrics and indicators that are aligned to the NAS monitoring and evaluation framework, the Government of

Canada will be able to better understand what actions are effectively reducing risks and where improvements need to be made. This ongoing and iterative approach will ensure that the federal government continues to build resilience in the face of Canada's evolving climate risks.

Additionally, the GOCAAP will be updated if necessary to reflect the final contents of the National Adaptation Strategy.

1.4 Climate Risk Action Areas

Climate change impacts in Canada are disrupting communities and lives across the country, causing billions of dollars of damage to physical infrastructure, homes, and the economy.

The costs are high. The Disaster Financial Assistance Arrangements (DFAA) program is the Government of Canada's primary mechanism to financially support provinces and territories to respond and recover when disasters occur. Since the 1970s when the program began, DFAA payouts have totalled $7.4 billion, with the majority of these costs occurring in the last 10 years. With outstanding liabilities totalling $4.6 billion, this brings total payments and liabilities to over $12 billion (excluding recent costs from Hurricane Fiona). Provincial, territorial, municipal and Indigenous governments have incurred billions more in further costs.

Modelling from the Canadian Climate Institute estimates that Canada is expected to experience $25 billion in annual Gross Domestic Product losses due to climate change in 2025—just two years away. Without adaptation, this estimate rises to $78 billion and $101 billion annually by mid-century in a low and high greenhouse gas emissions scenario, respectively.

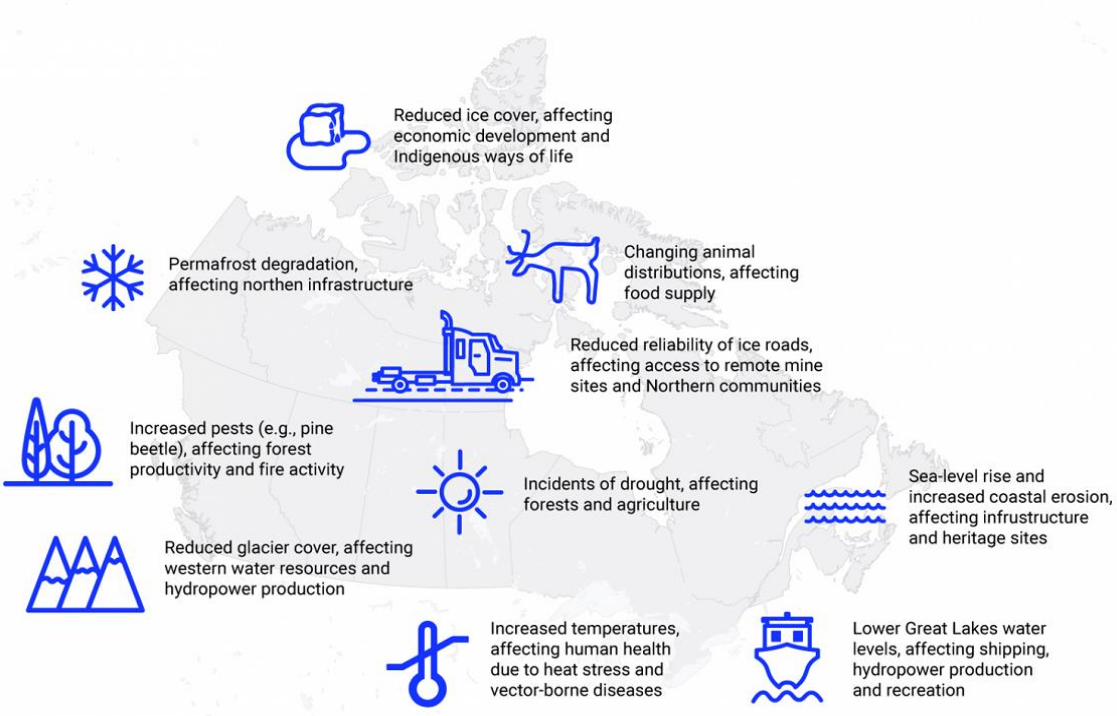

Figure 3. Some of the many regional climate change impacts that people in Canada are facing. Molnar, M., Olmstead, P., Mitchell, M., Raudsepp-Hearne, C. and Anielski, M. (2021): Figure 5.8 in Ecosystem Services; Chapter 5 in Canada in a Changing Climate: National Issues Report, (eds.) F.J. Warren and N. Lulham; Government of Canada, Ottawa, Ontario. https://changingclimate.ca/national-issues/chapter/5-0/5-3/5-3-1/es_5-8_v2/

However, the impacts of climate change are not limited to severe weather. Climate change poses both immediate and long-term risks to nearly every component of Canadian society. Slow-onset changes, while more difficult to see in everyday life, are projected to have impacts and costs of a similar magnitude to extreme weather events.

For example, rising sea levels are threatening Canada's coastal communities and ecosystems, leading to cascading risks from coastal erosion, increased storm surge, saltwater intrusion, flooding and damage to homes and infrastructure. Increasing temperatures can worsen and exacerbate air pollution, and are aiding the spread of disease-carrying insects, such as ticks and mosquitos. Additionally, Northern Canada is experiencing rapid permafrost thaw, changing ice and snow conditions, and shifting wildlife habitats, putting food security and traditional ways of life at risk. Figure 3 highlights some of the many impacts that Canadians are already facing.

Through the GOCAAP, the Government of Canada is delivering a suite of programming to reduce the risks that matter most to Canadians. Recognizing that climate change impacts are highly regional in nature, many of the actions under this plan are designed to be flexible and support regions, communities and businesses in addressing their individual needs and priorities.

Under the first iteration of the Action Plan, the Government of Canada is prioritizing actions that protect Canadians, the environment and the economy from the increasingly unpredictable and often severe impacts of climate change and help meet the objectives of the National Adaptation Strategy.

The plan outlines the following steps:

- Working to address the climate risks that communities face;
- Working with other orders of governments, Indigenous partners, and the private sector to communicate these risks as a way to empower communities to protect themselves; and,
- Providing an array of programming and incentives to accelerate resilience, with a focus on those most vulnerable.

The sections below provide a summary of some of the most damaging climate-related events facing Canadians, the associated risk reduction objectives that are being advanced under this Plan, and both new and ongoing actions that will help tackle these risks. Each of these risks will be accompanied by targets upon the completion of the National Adaptation Strategy.

To best support Canadians in finding programs that meet their needs, all actions within the Action Plan are mapped against the following significant climate risks (see Annex 3: **Government of Canada Adaptation Action Plan Table** for a comprehensive overview):

- All climate risks
- Air quality (including wildfire smoke)
- Changing freshwater, ocean and marine conditions
- Changing snow, glacier and ice conditions
- Drought
- Erosion
- Extreme weather events
- Fire events
- Flooding
- Food security
- Habitat and species
- Extreme heat events
- Infectious disease
- Permafrost thaw and degradation
- Sea level rise

Reducing Flood Risks in our Communities

Flooding is Canada's most common and costly climate-related disaster. Floods can occur at any time of year, occurring both along coastlines through storm surges and also inland through intense rainfall and river flooding.

A large proportion of Canada's population is exposed to flooding. Approximately four million Canadians currently live in flood-affected areas, and nearly 80 per cent of Canadian cities are built on floodplains. The most significant impacts and damages of flooding are expected for transportation related infrastructure, buildings, and electrical systems. Infrastructure damage associated with flooding is increasing and can occur in all seasons.

In spring 2019, an extreme flooding event because of rapid snow melting and heavy rainfall damaged areas of Ontario, Quebec, Manitoba and New Brunswick affecting over 17,000 dwellings and produced over 600 square kilometers of estimated

Flood damages continue to increase as a result of climate change, demographic shifts, and increasing development in high-risk flood areas. According to the Intact Centre on Climate Adaptation, even simple basement floods cost an average of $43,000; homes in flooded communities, regardless of whether individual properties experienced flood damages, face an average of 8.2% reduction in appraised value and significant sales delays post-flood.

Advancing National Adaptation Strategy Objectives

The National Adaptation Strategy is advancing whole-of-society objectives to reduce flood risks across Canada. These will be accompanied by corresponding targets upon the completion of the National Adaptation Strategy. Objectives include:

- Measurably reducing the number of people in Canada impacted by climate-related hazards.
- Enabling all communities to implement timely and successful emergency response plans that are readily accessible to everyone in the event of a disaster.

Government of Canada Action on Flooding

To better prepare for and respond to growing flood risks, the Government of Canada implementing a suite of programs to take action:

***New investment!* Flood Hazard Identification and Mapping Program**
Aims to complete flood hazard maps for high-risk areas and advance work to complete flood mapping nation-wide. New investments will support scientific modelling, and free, up-to-date and accessible flood maps for all Canadians.

Flood Insurance and Relocation
To strengthen nation-wide flood risk assessment and provide better flood risk information to Canadians and to examine options for low-cost residential flood insurance to residents of high-risk areas that are prone to flooding.

Meteorological Service of Canada work in response to hazards
Extreme weather forecasting, early warning systems and information dissemination on dangerous weather conditions, such as flooding.

***New investment!* Disaster Mitigation and Adaptation Fund**
Funding to support community infrastructure to build resilience to natural hazards, including wildfires.

First Nation Adapt
Funding to support climate risk reduction in First Nation communities, including efforts to effectively reduce long-term flood risks.

Federal Flood Mapping Guidelines
Evergreen technical references to improve and harmonize flood mapping activities across Canada.

Reducing Wildfire Risks in our Communities

Climate change is expected to result in more frequent and intense wildfires, with severe environmental and economic consequences.

An average of 9000 fires burn more than 2 million hectares of forests each year in Canada. Fire-prone conditions are predicted to increase across the country and could double the amount of area burned by the end of this century.

The wildfire season is already starting earlier, burning later, and becoming bigger and hotter. Wildfire smoke can affect the health of millions of Canadians for days and months. For example, in 2021 Calgary experienced 512 hours of smoke and haze, far exceeding the average of 12 hours per year.

In May 2016, a wildfire began ravaging Fort McMurray and surrounding areas, leading to the evacuation of more than 80,000 residents and the destruction of more than 2,400 homes. Total costs of the wildfire were $9 billion – the most expensive natural disaster in Canadian history. It continued to affect people long after the fires were extinguished, with tens of thousands of people reaching out for mental health support.

Advancing National Adaptation Strategy Objectives

The National Adaptation Strategy is advancing whole-of-society objectives to reduce wildfire risks across Canada. These will be accompanied by corresponding targets upon the completion of the National Adaptation Strategy. Objectives include:

- Measurably reducing the number of people in Canada impacted by climate-related hazards.
- Enabling all communities to implement timely and successful emergency response plans that are readily accessible to everyone in the event of a disaster.

Government of Canada Action on Wildfire

To better prepare for and respond to growing wildfires risks, the Government of Canada invests in a suite of programs and initiatives to support wildfire mitigation and prevention:

***New investment!* Wildfire Resilient Futures Initiatives**
New investments in long-term wildfire resilience, including community prevention and mitigation, a Centre of Excellence for Wildland Fire Innovation and Resilience, and supporting Indigenous fire stewardship.

Wildfire Risk Management Program
Provides technical and scientific expertise during wildland fire events to main and support essential services.

FireSmart Program
Enhances the capacity of First Nation communities on-reserve to prevent and prepare for wildland fires.

National Fire Management Program
Builds resilience and capacity of national parks to address wildfires.

***New investment!* Disaster Mitigation and Adaptation Fund**
Funding to support community infrastructure to build resilience to natural hazards, including wildfires.

Canadian Interagency Forest Fire Centre
This federal, provincial, territorial organization coordinates resource and information sharing to support wildland fire prevention and mitigation.

WildfireSat
Monitors all active wildfires in Canada from space to support wildfire management.

Federal Investments in Wildfire Management
Critical investments to provide information, tools, equipment and training for firefighting capacity.

Reducing Extreme Heat Risks in our Communities

Extreme heat events, often called heat waves, involve high temperatures and high humidity. These are a growing public health concern, as a changing climate is worsening the duration and intensity of extreme heat events.

Heat waves have claimed hundreds of lives in Western Canada and Quebec in recent years. While these extreme events pose a health risk to all, some are more affected than others, such as those who are living with pre-existing health conditions.

Although heat is a health risk outdoors, in Canada, the majority of people die from extreme heat indoors. At present, Canadian homes and communities are unprepared for increasingly severe and frequent extreme heat events.

In summer 2021, British Columbia faced a record setting extreme heat event, with temperatures rising to nearly 50°C and causing 619 deaths, of which 90% were over the age of 60 and 98% of deaths occurred indoors. B.C. health systems faced significant pressure. Paramedics received over 900 calls for heat stroke between June 24 and July 7. In many cases, patients had to wait hours, and in some cases died before help could arrive. This event was the deadliest weather-related event in modern Canadian history.

Advancing National Adaptation Strategy Objectives

The National Adaptation Strategy is advancing whole-of-society objectives to reduce extreme heat wave risks across Canada. These will be accompanied by corresponding targets upon the completion of the National Adaptation Strategy. Objectives include:

- People are protected from urgent climate-related health risks such as extreme heat, infectious diseases, foodborne hazards and impacts to traditional foods, poor mental health impacts, and others.

Government of Canada Action on Extreme Heat

To better prepare for and respond to growing extreme heat risks, the Government of Canada is implementing a suite of programs, including:

***New investment!* Protecting Canadians from Extreme Heat**
Increases Canada's ability and capacity to adapt and reduce health risks from extreme heat, including by supporting the Heat Alert and Response Systems. New Investments in this program will fill critical evidence and guidance gaps hindering adaptive action at local, provincial and territorial levels—particularly related to adapting to indoor heat

Natural Infrastructure Fund
Supporting projects that use natural or hybrid approaches, such as urban tree canopies, to protect the natural environment and support healthy and resilient communities.

***New investment!* Disaster Mitigation and Adaptation Fund**
Funding to support community infrastructure to build resilience to natural hazards, including extreme heat.

2 The Federal Role

The Government of Canada plays a leadership role in climate change adaptation by creating an environment that is conducive to effective, efficient and equitable adaptation by and for all. The federal government fulfils its roles and responsibilities on adaptation through the following means:

Generating climate change data and information	The Government of Canada supports, develops and disseminates foundational climate change science, assessments, tools and resources to inform evidence-based decision-making related to climate change impacts and adaptation.
Convening implicated partners and stakeholders	The Government of Canada convenes and facilitates collaboration amongst key stakeholders, such as Indigenous partners, civil society, the private sector and other levels of government to harmonize climate change adaptation efforts.
Setting long-term policy direction on national issues	The Government of Canada sets long-term policy in areas of national concern, including the establishment of the National Adaptation Strategy and action plans to implement policy direction. Regular review and updates to national adaptation policies will help to ensure actions are effectively addressing climate change risks.
Using the **federal spending power** to enable targeted actions by others, in areas where there are strong justifications[1] to do so	The Government of Canada invests in developing capacity in other orders of government, communities, the private sector, and non-governmental organizations. The federal government also invests directly in areas that will result in increased resilience on the ground, such as climate-resilient infrastructure.
Using **codes, regulations and other policy measures**, such as legislation and economic instruments, to enable actions by others	The Government of Canada creates and implements nationally applicable measures, such as laws, regulations, codes and standards, which affect all Canadians. The implementation and approval of these measures must meet the needs of Canadians living in various contexts across the country, and have clear rationale and justification for their use.

[1] Appropriate justifications for deploying the federal spending power include to address specific market failures and for efficiency and equity-related reasons, including to support action in emergent areas or where resources required can't reasonably be borne by a single set of implicated partners or stakeholders.

	The Government of Canada is responsible for the provision of infrastructure, health services and emergency management in Indigenous communities on reserve. The federal government also supports Indigenous self-determination, such as through work with partners in advancing Indigenous climate leadership..
	The Government of Canada plays a leadership role in the global response to climate change by supporting the goals of the Paris Agreement through climate financing, international partnerships, initiatives, and bilateral cooperation. One of the key objectives of Canada's climate finance commitment is to enhance the adaptive capacity of vulnerable countries in responding to the impacts of climate change.
Using levers related to areas of **exclusive federal jurisdiction**	The Government of Canada is responsible for protecting and sustainably managing Canada's fisheries and Canada's ocean and marine spaces. This includes efforts to adapt oceans, freshwater, fisheries and aquaculture, and aquatic ecosystems to the changing climate, guided by foundational climate science data and collaborations with Indigenous Peoples and local communities. The federal government is also responsible for maintaining and supporting safe and navigable waterways.
	The Government of Canada is responsible for supporting disaster relief response and relies on the Canadian Armed Forces (CAF) to assist with climate-related events, such as floods, fires and hurricanes. The ability of the CAF to rapidly deploy with equipment and personnel enhances local/regional efforts to save lives, property and enable quicker recovery. The CAF is a force of last resort that remains available to respond to domestic disasters when no other organization has the capacity to do so.

Climate change affects the implementation of mandates of all federal departments and agencies. As Canada's largest organization, with operations in all regions of the country, the Government of Canada is responsible for the advancement of adaptation through building resilience into federal assets, programs and services. This includes ensuring that climate change adaptation considerations are integrated into federal activities, including policy and programming decisions, to enhance the protection of public assets and resources. By factoring adaptation into decision-making, the Government as a whole will adapt, and in doing so can mobilize its authorities, investments and economic instruments in support of adaptation throughout the country (see Section 3.8 for more information).

3 Government of Canada Actions

The remainder of this document demonstrates how the Government of Canada is driving adaptation action under the following key themes: targeted measures, climate change science and knowledge, tools and resources, and governance and leadership.

- **Targeted measures** are advancing and implementing actions across the five key NAS systems within areas of federal jurisdiction. These systems are at the heart of our lives and our communities, and include disaster resilience and security, health and wellbeing, nature and biodiversity, infrastructure, and economy and workers.
- Establishing and disseminating sustained, iterative and inclusive **climate change knowledge and understanding** to assist governments, communities, individuals and businesses in understanding climate risks and how they can adapt. This includes supporting and promoting Indigenous knowledge systems.
- Investing in **tools and resources** to support all people living in Canada in leading local-level climate action by building adaptive capacity and implementing long-term climate solutions.
- Establishing clear **governance and leadership** between the federal government and key partners and stakeholders to ensure adaptation measures across the country are coordinated and efficient.

Summary tables precede each section and provide a strategic snapshot into the departments and agencies leading action, highlighting which objectives are being advanced by each action and identifying key outcomes.

3.1 Disaster Resilience

Disaster Resilience Summary Table	
Federal departments and agencies leading action	• Agriculture and Agri-food Canada • Environment and Climate Change Canada • Indigenous Services Canada • Natural Resources Canada • Parks Canada • Public Safety Canada • Statistics Canada
National Adaptation Strategy objectives	**Disaster Resilience 1** There is a measurable reduction of people in Canada impacted by climate-related hazards including flooding and wildfires (e.g., eliminate fatalities and reduce displacement and damage from wildfires; eliminate mortality and reduce hospitalization from extreme heat; households in high-risk flood zones and those subject to flooding from extreme precipitation are protected). **Disaster Resilience 2** Effective, efficient and accountable governance mechanisms are established for stronger disaster risk reduction coordination through a whole of society approach. **Disaster Resilience 3** All communities are able to implement timely and successful emergency response plans that are readily accessible in the event of a disaster. **Disaster Resilience 4** National and regional readiness, mitigation and recovery plans and policies integrate the latest evidence and are inclusive of all populations/communities. **Disaster Resilience 5** People affected by disasters face minimal disruptions to lives and livelihoods, and can return to their homes within a reasonable period of time (e.g., establish clear timelines with milestones for displaced Canadians to return home after a disaster).
Significant risks addressed	Climate-related disasters are increasing in frequency and severity across Canada. Disasters cause long-lasting economic impacts that cost the federal government billions in unrecovered dollars, and disproportionately affect at risk populations, including Indigenous communities. Recent domestic disasters have drawn attention to these threats and how climate change is escalating risks. Insured losses for catastrophic weather events have tripled, totalling to more than $18 billion between 2010 and 2019. In the GOCAAP, the Government of Canada commits to better integrating climate change adaptation with Disaster Risk Reduction (DRR) activities, policies and tools to help reduce risks to communities by recognizing the shared goal of improving resilience, prioritizing disaster preparedness, prevention and mitigation and improving whole-of-society participation. The overarching goal of the Disaster Resilience actions are to ensure that communities and all people living in Canada are better equipped to prepare for, mitigate, respond to and recover from the hazards, risks and consequences of disasters linked to the changing climate; the well-being and livelihoods of people living in Canada are better protected; and overall

	disaster risks have been reduced, particularly for vulnerable sectors, regions and populations at greater risk.
Critical actions	**Action 1:** The **National Risk Profile** is a strategic national disaster risk and capability assessment to create a forward-looking picture of risk to strengthen resilience to natural and human-induced hazards. **Action 2:** The **National Public Alerting System** is a standard alerting system that allows emergency management organizations across the country to warn the public of imminent or unfolding hazards. **Action 3:** The **Emergency Management Public Awareness Contribution Program** improves understanding of disaster risks in vulnerable sectors of society. **Action 4:** The national **Emergency Preparedness Week** is an opportunity for individuals to take action to ensure they are prepared to protect themselves, their families and their community during an emergency. This year, the theme was Emergency Preparedness: Be Ready for Anything to encourage Canadians to take action to become better prepared for the range of emergencies they could face in their region. **Action 5:** The **Federal Emergency Response Plan** details an “all hazards” response plan for coordinating the Government of Canada's response to an emergency. **Action 6: The Wildland Risk Management Program** advances knowledge and understanding of fire risk in Canada, including the growing impact of climate change on fire behavior, frequency and severity. It provides technical and scientific expertise and support throughout the wildfire season and works with provinces and territories to develop strategic approaches that address the ongoing wildland fire challenge. **Action 7:** Implementing the ***2021-22 Federal, Provincial, and Territorial Emergency Management (FPT EM) Strategy Interim Action Plan***, the first in a series of action plans to 2030, will advance defined outcomes within the Emergency Management Strategy for Canada and demonstrates concrete steps that FPT governments and emergency management partners will take to advance resilience to disasters. The 2023-2024 Action Plan is currently in development. **Action 8: Heavy Urban Search and Rescue (HUSAR) Program** provides federal investments to assist eligible provinces and municipalities obtain the equipment and extensive training needed to sustain specialized search and rescue capacity. **Action 9:** The **Humanitarian Workforce Program** helps eligible organizations build surge capacity and deploy resources to respond to emergencies. **Action 10:** The **Parks Canada Wildfire Management Program** aims to improve the resilience of national parks to wildfire, make communities safer, and adapt to climate change. **Action 11:** The **Wildfire Resilient Futures Initiative** will invest in long-term wildfire resilience, including community prevention and mitigation, innovation in fire knowledge and research, and establishing a Centre of Excellence for Wildland Fire Innovation and Resilience.

Action 12: A Task Force on Flood Insurance and Relocation released a report to strengthen nation-wide flood risk assessment and provide better flood risk information to Canadians and to examine options for low-cost residential flood insurance to residents of high-risk areas that are prone to flooding.

Action 13: Statistics Canada data is currently available to support organizations responsible to manage **emergency preparedness, response and disasters.**

Action 14: The **Canadian Disaster Database** is a publicly available repository of detailed information on significant disaster events.

Action 15: Geoscience supporting public safety and climate-change resilience provides evidence for decision-making related to public safety and climate change resilience, through geoscientific data and scientific interpretations.

Action 16: National Fire Information Database is a part of a pilot project to identify fire risk in neighborhood communities in British Columbia.

Action 17: Federal Flood Mapping Guideline Series consists of evergreen technical references to improve and harmonize flood mapping activities across Canada.

Action 18: Emergency Geomatics Services accesses and analyzes satellite imagery in near real time, and produces maps that directly support national coordination of emergency response.

Action 19: Enhance the capacity of the **Canadian Interagency Forest Fire** Centre as well as invest in enhanced mapping of northern forests**.**

Action 20: WildfireSat detects and monitors all active wildfires in Canada from space to ensure Canada's wildfire management agencies will receive unprecedented strategic intelligence on all active wildfires in near real-time.

Action 21: The **Advancing the Flood Hazard Identification and Mapping Program** conducts flood hazard mapping for areas of higher flood risk in Canada; flood hazard maps and information are available to all Canadians.

Action 22: Disaster Financial Assistance Arrangements, is a key mechanism for the Government of Canada to provide financial assistance to provincial and territorial governments in the event of large-scale disasters.

Action 23: AgriRecovery Framework supports agricultural producers to recover in the event of disasters, including climate-related disasters.

Action 24: Government Operations Centre Request for Federal Assistance (RFA) is the Government of Canada's process through which disaster response support is provided to provinces and territories.

Action 25: The **Emergency Management Assistance Program (EMAP)** helps communities on-reserve to access emergency assistance services. It provides direct funding to First Nation communities to mitigate, prepare and respond to hazards and build resiliency using the four pillars of emergency management: Mitigation; Preparedness; Response; and Recovery.

Action 26: Significant **Federal Investments in Wildfire Management (response and operations)**, have been made over the last five years to support wildfire management and response.

3.1.1 Why Action is Needed Now

Climate change is already affecting our economy. Canadians are experiencing the impacts of climate change in devastating and far-reaching ways. In some cases, these impacts are leading to increased losses. The rising frequency, severity and unpredictability of disasters also means that our emergency response systems will become more strained and difficult to manage over time.

Various regions and people across Canada are experiencing disproportionate impacts to climate change. Indigenous peoples experience unique and disproportionate impacts from climate change caused in part by historic and ongoing government practices and policies, as well as their deep cultural connections with the natural environment. For example, First Nations experience an evacuation rate 18 times higher than non-Indigenous Canadians, including due to impacts such as wildfires and floods.

Climate damages are increasing the economic costs of disasters, resulting in large national income losses. The Canadian Climate Institute projects that in 2025, Canada will experience $25 billion in losses relative to a stable-climate scenario, which is equal to 50 % of projected 2025 GDP growth.

Through enhanced Emergency Management and Disaster Risk Reduction capabilities, Canadians will be better equipped to manage the risks and impacts of climate-related disasters. In addition to federal leadership, this will require action and collaboration from actors across Canadian society.

Implementing and aligning adaptation actions will help to mitigate the impacts experienced by communities across the country. Adaptation improves our capacity to prepare for, respond to, and recover from disasters. It also involves implementing proactive measures to minimize the impacts of disasters when they occur.

The rate at which we are experiencing catastrophic disasters is outpacing current emergency management frameworks. These events lead to broader impacts, such as poor financial and risk-based decisions resulting from factors such as large insurance pay outs related to limited disaster risk reduction capacity, and the inability to rapidly assess and address the need for debris removal.

Some of the many cascading impacts of disasters include supply chain interruptions and associated impacts on food and water security, and impacts on business continuity for Canadian industry. In addition, many communities in the North have limited health infrastructure and food security, as well as single-road access, which further increases the risk of severe and long-term consequences from flooding. An emergency road closure due to a flood can quickly cascade to food and fuel shortages and loss of access to medical care if other transportation means are limited or unavailable.

Canada needs an emergency management system that allows for faster and more effective recovery from all-hazards including fires, storms, floods, and heat events. This involves reducing additional costs, minimizing delays and human impacts for those affected, enhancing community resiliency, and strengthening risk reduction and resiliency for future events. Urgent action is needed to allow people living in Canada, particularly those most impacted by climate

change, to encounter fewer barriers to recovery, strengthen local capacities and expertise to respond, mitigate disaster risk, and increase preparedness for disaster events.

Spotlight on Canada's Emergency Management Strategy

The Emergency Management Strategy for Canada, Canada's official disaster risk reduction strategy, guides federal and provincial governments to take action to improve emergency management capacity and reduce disaster risk. As a signatory to the United Nations Sendai Framework for Disaster Risk Reduction 2015-2030, the Government of Canada has committed to increasing this country's disaster strategies, early warning systems and whole of society cooperation to reduce disaster risks, including working with Indigenous communities and vulnerable populations.

The advice proposed by the National Adaptation Strategy's Disaster Resilience and Security Advisory Table, and by those who participated in the Strategy's public engagement process, align well with existing work under the *Emergency Management Strategy for Canada* and the Sendai Framework. This advice speaks to the importance of integrating climate change adaptation with disaster risk reduction activities, including bolstering resilience and prioritizing disaster preparedness, prevention and mitigation. Aligning our approach across these areas will also help ensure that our collective response to disasters is responsive and takes into account the growing impacts and costs of climate change.

3.1.2 Critical Actions

Disaster Awareness and Communications

Action 1: National Risk Profile

Lead department: Public Safety Canada
Implements objective: Disaster Resilience 4

A strategic national disaster risk and capability assessment that uses scientific evidence and stakeholder input to assess representative scenarios, gather data from participants with relevant knowledge and expertise and create a forward-looking picture of risk to strengthen resilience to natural and human-induced hazards. A public report is expected for early 2023.

Evidence and stakeholder input that is gathered though the National Risk Profile advances the integration of climate change adaptation into emergency management, informing decision-making and strategic investments for disaster risk reduction and resilience building. This integration can help improve efficiencies across the emergency management system, leverage and align our collective emergency management and climate change adaptation expertise, better prepare communities for emergency preparedness and climate related disasters, and help support greater mechanisms for a timely response and recovery.

By serving as an evidence-based review of these key disaster risks, the National Risk Profile report will be a useful resource for emergency management practitioners, decision-makers and the public. It identifies key gaps in the emergency management system to generate a dialogue on how to support informed decision-making to reduce risk and build resilience, which is a goal of the NAS.

Action 2: National Public Alerting System

Lead department: Public Safety Canada
Implements objective: Disaster Resilience 1
Also supports: Disaster Resilience 3

The National Public Alerting System provides emergency management organizations across the country with the capability to rapidly warn the public of imminent or unfolding hazards to life. It delivers critical and potentially life-saving alerts to Canadians through television, radio and compatible wireless devices. Public Safety Canada is leading collaborative federal, provincial and territorial efforts to strengthen governance, sustainability and guidelines around the usage of the National Public Alerting System to maintain a public alerting system for all Canadians that is reliable, accessible, inclusive and trusted.

By providing proactive emergency alerting, the national public alerting system helps communities to implement timely emergency response plans in the event of a disaster thereby minimizing the immediate impacts of climate-related hazards.

Action 3: Emergency Management Public Awareness Contribution Program

Lead department: Public Safety Canada
Implements objective: Disaster Resilience 1
Also supports: Disaster Resilience 4

This program provides funding to help vulnerable Canadians understand the risks associated with natural disasters and what can be done to prepare for and mitigate weather-related emergencies.

The Emergency Management Public Awareness Contribution Program was established to increase the level of preparedness and readiness of vulnerable groups to natural hazards. Funding recipients are required to consult existing public awareness research on emergency preparedness and resilience in Canada (e.g., Survey of Emergency Preparedness and Resilience in Canada), link to existing public awareness campaigns (e.g., Flood Ready), and apply their own body of research, expertise in emergency management and experience working with vulnerable communities to develop and nationally distribute public awareness products that are tailored to the specific needs, risks, and barriers of vulnerable populations; incorporate multiple methods of delivering public awareness products, such as through web products, social media, and printed materials (i.e., pamphlets); establish a metrics mechanism, monitor the impact and evaluate the effectiveness of public awareness products; and target three or more of the following vulnerable groups of Canadians: Low-income Canadians; Seniors; Women; New Canadians; and Indigenous communities.

The program helps communities to develop and maintain readiness, mitigation and recovery plans and policies that are inclusive of all populations and communities, and it helps vulnerable populations in Canada mitigate climate related hazard risks.

Action 4: Emergency Preparedness Week

Lead department: Public Safety Canada
Implements objective: Disaster Resilience 4

A national event whereby the federal government, led by Public Safety Canada, works closely with provincial and territorial emergency management organizations, Indigenous organizations, non-governmental organizations and private sector organizations to support safety activities at the local level.

Emergency Preparedness (EP) Week is an annual, week-long public education event that takes place during the first full week of May. EP Week encourages Canadians to take three simple steps to become better prepared to face a range of emergencies, including (1) Know the risks, (2) Make a plan and (3) Get an emergency kit.

Every year, EP Week serves as an opportunity to remind Canadians of the importance of being prepared for any emergency situation that could occur. It is an opportunity to reflect on how actions at the individual and community level can help reduce the impact of disasters and improve overall resiliency.

The past several years have highlighted the fact that emergency preparedness has a greater scope than just weather events. Most recently, in May 2022, EP Week messaging focused on all-hazards and emphasized the need to be prepared for any eventuality. The theme encouraged Canadians to take action to prepare for emergencies, stay informed and to mitigate the potential negative impacts of emergencies on their household and community. Overall, this event promotes local adaptation action, and encourages people in Canada to develop and maintain readiness, mitigation and recovery plans and policies that integrate the latest evidence, and enable them to prepare themselves to face emergencies as they emerge.

Action 5: Federal Emergency Response Plan

Lead department: Public Safety Canada
Implements objective: Disaster Resilience 2

An “all hazards” response plan for coordinating the Government of Canada's response to an emergency per the Minister of Emergency Preparedness’ responsibility under the Emergency Management Act. Efforts are underway to renew the Federal Emergency Response Plan (FERP), recognizing a need for improved federal response cohesion, clarity of roles, and an increased frequency of large-scale events of federal concern including those driven by climate change.

The FERP contributes to the Government of Canada’s objective to establish and maintain effective, efficient, and accountable governance mechanisms for stronger disaster risk reduction coordination through a whole of society approach.

Action 6: Wildfire Risk Management Program

Lead department: Natural Resources Canada
Implements objective: Disaster Resilience 1
Also supports: Disaster Resilience 2

NRCan provides wildfire information and expertise to Canada's fire management agencies, delivering essential services (such as fire modeling, mapping and monitoring, and fire behaviour, risk and growth assessments) and helping to build understanding of how climate change is affecting forests, wildfire and wildfire management now and in the future. These tools help fire managers make decisions on best fire response and allocation of firefighting resources. In addition, through cooperative efforts like the Canadian Council of Forest Ministers and the Canadian Interagency Forest Fire Centre, NRCan works in close partnership with the provinces and territories to develop collective wildland fire management approaches and strategies that address the growing challenge of increasing forest fires across the country.

Advancing Emergency Management Implementation

Action 7: 2021-22 Federal, Provincial, and Territorial Emergency Management Strategy Interim Action Plan

Lead department: Public Safety Canada
Implements objective: Disaster Resilience 2

In March 2022, FPT Ministers responsible for emergency management released the *2021-22 Federal, Provincial, and Territorial Emergency Management (FPT EM) Strategy Interim Action Plan*. The plan is the first in a series of action plans to 2030. It will advance defined outcomes within the Emergency Management Strategy for Canada and demonstrate concrete steps that federal, provincial and territorial governments and respective emergency management partners, can take to advance disaster resilience.

The FPT EM Strategy Action Plan drives forward the FPT governments' vision of strengthening EM capabilities to prevent/mitigate, prepare for, respond to and recover from disasters, in order to reduce disaster risk and increase the resiliency of all individuals and communities. Despite a large contingent of FPT resources being dedicated to the COVID-19 pandemic, FPT governments will work to meet their collective commitment to the EM Strategy through the five Strategic Actions outlined in the Interim Action Plan for 2021-22. FPT governments will continue to monitor the implementation of this Interim Action Plan, while the FPT EM Strategy Action Plan Working Group will begin to construct the EM Strategy Action Plan for 2023-24, advancing the EM Strategy and pushing Canada's EM systems along the path toward a more resilient future by 2030.

Action 8: Heavy Urban Search and Rescue (HUSAR) Program

Lead department: Public Safety Canada
Implements objective: Disaster Resilience 3

The federal government provides investments to help eligible provinces and municipalities obtain the equipment and extensive training needed to sustain this specialized search and rescue capacity that is often critical in the aftermath of various incidents including earthquakes, cyclones, tornadoes, storms, flooding, wildland fires and critical infrastructure failures. There are currently six HUSAR Task Forces across Canada supported through this program.

The HUSAR program ensures that Canada's national approach to emergency management is increasingly reflective of the needs of all partners and the changing risk environment. As growing cities, aging infrastructure and climate variability increase across the country, ensuring sufficient HUSAR capacity is critical.

Action 9: Humanitarian Workforce

Lead department: Public Safety Canada
Implements objective: Disaster Resilience 3
Also supports: Disaster Resilience 2; Disaster Resilience 5

The Humanitarian Workforce (HWF) program helps eligible organizations build surge capacity and deploy resources to respond to emergencies, including the COVID-19 pandemic or other large-scale emergencies, such as wildfires and floods. For example, this program can provide funding for a non-governmental organization (NGO) to temporarily deploy nurses to assist with vaccination, following a Request for Federal Assistance from a province or territory.

As part of its response to the COVID-19 pandemic, the Government of Canada has committed $150 million between 2021-2023 to support the Canadian Red Cross and other NGOs in building and maintaining a humanitarian workforce to provide surge support in response to the pandemic and other large-scale emergency events in Canada.

This program, addresses the evolving disaster landscape and looks to improve the Government of Canada's current response capacity through building a civilian response capacity to respond to emergency events. Work is underway to build a broader civilian response capacity to further enhance Canada's capacity to respond to climate change events, bolster response capacity to all hazards, including future climate related events. The goal is to ultimately help the Government of Canada adapt to the changing risk environment, reduce disaster consequences and improve resiliency.

Action 10: Parks Canada Wildfire Management Program

Lead department:	Parks Canada Agency
Implements objective:	Disaster Resilience 1
Also supports:	Disaster Resilience 2; Disaster Resilience 3; Disaster Resilience 4

Parks Canada is the only federal organization that manages and responds to wildfire on the ground, with similar roles and capabilities as any provincial-territorial wildfire agency. As the largest federal land manager, Parks Canada is responsible for managing wildland fire across 350,195 km2 of federal Crown lands (approximately the size of Germany or six times the land mass of Nova Scotia). Parks Canada (along with NRCAN) is a member of the Canadian Interagency Forest Fire Centre (CIFFC) and a member of its Board of Directors. As such, Parks Canada provides operational wildfire resources (equipment and personnel) to provinces, territories and international partners through CIFFC and other resource exchange agreements. This close partnership with provinces and territories will help address the growing challenge associated with climate change and the increased frequency and intensity of extreme weather-related events and disasters such as wildfires.

The Parks Canada wildfire management program integrates adaptation actions in all aspects of wildfire management, and aims to make communities safer, protect national parks and create landscapes that are more resilient to climate change by proactively investing in wildfire preparedness, response and mitigation.

With climate change impacts increasing wildfire risks, Budget 2021 provided an investment of $52.5 million over five years in new funding to Parks Canada to enhance its wildfire management program. With the additional investment, Parks Canada continues to build its' wildfire management capacity through several activities such as:

- sharing resources, training and expertise with partners
- preparing for longer fire seasons resulting from climate change
- increasing governmental capacity to train and retain highly specialized personnel
- increasing response, mitigation and planning capacity
- increasing the scope and accelerating the pace of wildfire risk reduction efforts across the country, with a particular focus on the communities located within and directly adjacent to PC administered places

Action 11: **Wildfire Resilient Futures Initiative**

Lead department: Natural Resources Canada
Implements objective: Disaster Resilience 1
Also supports: Disaster Resilience 4

The scope, scale and impact of wildland fire is increasing as our climate changes, placing lives, communities, economic activity, infrastructure and more, at risk each year. The Wildfire Resilient Futures Initiative will invest in long-term wildfire resilience, including community prevention and mitigation (i.e., enhancing FireSmart Canada), and developing evidence-based approaches to enhance and support community resilience as the nature and behaviour of wildfires change over time. The initiative will also establish a Centre of Excellence for Wildland Fire Innovation and Resilience to mobilize knowledge, increase uptake of innovations in technology and training, support Indigenous fire stewardship, and help strengthen wildland fire management in Canada and around the world.

Evidence and Data on Climate Hazards

Action 12: Flood Insurance and Relocation

Lead department: Public Safety Canada
Implements objective: Disaster Resilience 1
Also supports: Disaster Resilience 2; Disaster Resilience 4; Disaster Resilience 5

To strengthen Canada's understanding of its national flood risk, the Government of Canada has established a Task Force on Flood Insurance and Relocation to enhance nation-wide flood risk assessment, provide better flood risk information to Canadians, and examine options for low-cost residential flood insurance for residents of high-risk areas that are prone to flooding. The Government of Canada is committed to advancing work on possible low-cost national flood insurance programs to address protection gaps in high-risk areas, as well as exploring relocation for those at the highest risk of repeat flooding. The Task Force's work produced a report released in August 2022.

Key findings of the Task Force include research on understanding Canada's risk landscape, analyzing social vulnerability in areas of high-flood risk, examining models for flood insurance and exploring how relocation can help to reduce risk. The findings will support adaptation efforts related to flooding.

Action 13: Statistics Canada data on emergency preparedness, response and disasters

Lead department: Statistics Canada
Implements objective: Disaster Resilience 4

Statistics Canada data is currently available to support organizations responsible to manage emergency preparedness, response and disasters.

Action 14: The Canadian Disaster Database

Lead department: Public Safety Canada
Implements objective: Disaster Resilience 4

The Canadian Disaster Database is a publicly available repository of historical records that describes where and when a significant event occurred, a description of the event, the number of injuries, fatalities, an estimate of associated costs, and other facets when available (e.g., temporary or permanent displacement).

The database contains information on more than 1000 events and can be used to support research, academic activities and decision-making across a breadth of fields including earth sciences, agriculture, climate change, biology and epidemiology, land-use planning, insurance, investment, and the anthropological and sociological aspects of community resilience, among many others.

Action 15: Geoscience supporting public safety and climate change resilience

Lead department: Natural Resources Canada
Implements objective: Disaster Resilience 4

NRCan's Geological Survey of Canada provides evidence for decision-making related to public safety and climate change resilience, through geoscientific data and scientific interpretations.

The Public Safety Geoscience Program aims to understand the hazards and risks to Canadians associated with climate-related hazards, such as terrestrial and marine landslides, and coastal flooding, and works with the Canadian Hazards Information Service on a range of non-climate hazards like earthquakes and space weather. This work contributes to disaster risk reduction actions at local, regional, and national scales.

The Climate Change Geoscience Program aims to better understand the impacts of climate change by conducting geological research on permafrost, coastal erosion, sea level rise and glacier melting. In doing so, the program provides cutting-edge information and data to improve our understanding of how Canada's landmass is affected by climate change in order to support land-use planning, infrastructure development and to help industry and at-risk communities adapt.

Action 16: National Fire Information Database

Lead department: Statistics Canada
Implements objective: Disaster Resilience 4
Also supports: Disaster Resilience 1

The National Fire Information Database (NFID) "Community Fire Risk Reduction Dashboard" is a pilot project to identify fire risk in neighborhood communities in British Columbia. The main objective is to build capacity for fire services to identify and target communities that would benefit most from fire prevention treatments in order to not only prevent fires, but more importantly, to prevent injuries and deaths occurring as a result of fires.

The NFID informs Canadians about fire incidents, fire protection features, circumstances contributing to outbreak, factors relating to origin and spread; fire loss details; discovery of fire and actions taken; fire casualties and other socioeconomic data. Consolidating data from across the country informs a national picture for evidence-based adaptation decision-making.

Action 17: Federal Flood Mapping Guideline Series

Lead department: Natural Resources Canada
Implements objective: Disaster Resilience 1; Disaster Resilience 2; Disaster Resilience 4

In consultation with provincial and territorial partners and other key stakeholders, NRCan published the Federal Flood Mapping Guideline Series to address a lack of national-level guidance on Canada's flood mapping procedures and dissemination. The series consists of technical references to improve and harmonize flood mapping activities across Canada.

Action 18: Emergency Geomatics Services

Lead department: Natural Resources Canada
Implements objective: Disaster Resilience 1; Disaster Resilience 4

Natural Resource Canada's emergency geomatics and satellite mapping service (EGS) is an integral part of disaster response in Canada. By accessing and analyzing satellite imagery in near real time, EGS produces maps that directly support national coordination of emergency response. These maps provide critical information, such as flood extents, river ice jams and observable damage, to federal, provincial and territorial response teams. They are also used to accumulate accurate knowledge of areas most at risk, both at the time of emergency and into the future, thereby mitigating the impacts of natural disasters. Through the application of satellite imagery and scientific assessment, EGS supports evidence-based decision-making, operational planning and helps make Canadian communities safer and more resilient.

Action 19: Enhanced mandate for forest mapping of northern forests, and to enhance capacity of the Canadian Interagency Forest Fire Centre

Lead department: Natural Resources Canada
Implements objective: Disaster Resilience 4

The Canadian Interagency Forest Fire Centre (CIFFC) is a not-for-profit corporation owned and operated by the federal, provincial and territorial wildland fire management agencies to coordinate resource sharing, mutual aid and information sharing. In addition, CIFFC serves as a collective focus and facilitator of wildland fire cooperation and coordination nationally and internationally in long-range fire management planning, program delivery and human resource strategies.

Budget 2021 provided investments to expand capacity at the CIFFC and expand the organization's mandate to include wildland fire prevention and mitigation, in addition to its traditional role relating to wildland fire response and operations.

Action 20: WildFireSat

Lead department: Natural Resources Canada
Implements objective: Disaster Resilience 3

Natural Resources Canada, the Canadian Space Agency, and Environment and Climate Change Canada will deliver the WildFireSat Canadian Operational Mission (WildFireSat-COM), a new satellite system that detects and monitors wildfires. The fully funded end-to-end initiative (as stated in Budget 2022) will serve as a complete information system, observing wildfires during their peak burning period and delivering detailed analysis of fires as fast as possible directly to the operational partners making decisions on the front lines. As a result, Canada's wildfire management agencies will receive unprecedented strategic intelligence on all active wildfires in near real-time. Air quality, smoke, and carbon emissions from wildfires will be better forecasted and monitored (an important requirement of international agreements on carbon reporting), and, ultimately, there will be a significant reduction of the economic and societal risks and losses wildfires can cause.

Action 21: Advancing the Flood Hazard Identification and Mapping Program

Lead department: Natural Resources Canada
Implements objective: Disaster Resilience 1
Also supports: Disaster Resilience 4

Floods are the most commonly occurring natural hazard in Canada and account for the largest portion of disaster recovery costs on an annual basis. The Flood Hazard Identification and Mapping Program (FHIMP), administered by Natural Resources Canada (NRCan) in partnership with Environment and Climate Change Canada (ECCC) and Public Safety Canada (PS) and provincial and territorial governments, aims to meet the Minister of Natural Resources' mandate commitments to develop flood maps for higher-risk areas and to advance work to complete flood mapping nation-wide. In doing so, the FHIMP will ensure that flood hazard maps and information are made available to all Canadians. Foundational data and scientific modelling developed by NRCan and partners will contribute to the creation of regulatory-quality flood hazard maps that will inform decision-making in support of flood mitigation, adaptation to a changing climate, resilience building and protection of lives and properties.

Advancing the Flood Hazard Identification and Mapping Program will allow NRCan and partners, such as ECCC, PS and provinces and territories, to continue to support crucial decision-making to address urgent flooding risks and impacts, often exacerbated by climate change, by providing regulatory-quality flood hazard maps and scientific modelling of future flood hazards scenarios to complete flood hazard mapping for Canada and ensure that all Canadians have access to free, up-to-date, authoritative flood hazard maps, making a direct, positive impact on their safety and security. Advancing the FHIMP will mitigate the extent of flood damage, increase Canadian's resilience to flood-related impacts and reduce federal and private flood event recovery costs.

Financial Support to Address Climate Hazards

Action 22: Disaster Financial Assistance Arrangements

Lead department: Public Safety Canada
Implements objective: Disaster Resilience 5

In the event of a large-scale natural disaster, the Government of Canada provides financial assistance to provincial and territorial governments through the Disaster Financial Assistance Arrangements (DFAA).

When response and recovery costs exceed what individual provinces or territories could reasonably be expected to bear on their own, the DFAA provide the Government of Canada with a fair and equitable means of assisting provincial and territorial governments.

Since the DFAA's inception in 1970, the federal government has provided $7.3 billion in contributions to provinces and territories for 303 events, with 65% of costs having been incurred in the last 10 years. The program has an outstanding liability of $4.66 billion (including costs for the 2021 atmospheric river in BC) bringing total payments and liabilities to $12 billion (excluding Hurricane Fiona). Flooding accounts for 86% of DFAA events and 77.9% of total DFAA costs.

Public Safety Canada is reviewing its program for post-disaster financial assistance to ensure there is an updated, comprehensive system available to provinces and territories for disaster recovery and to support the safety and well-being of Canadians.

Action 23: Canadian Agricultural Partnership: AgriRecovery Framework

Lead department: Agriculture and Agri-food Canada
Implements objective: Disaster Resilience 2
Also supports: Economy and Workers 3

The AgriRecovery Framework is part of a suite of federal-provincial-territorial (FPT) Business Risk Management (BRM) tools under the FPT agriculture policy framework, the Canadian Agricultural Partnership (2018-2023). AgriRecovery is a disaster relief framework intended to complement other core BRM programs (AgriInsurance, AgriStability and AgriInvest) to help agricultural producers recover from natural disasters. FPT governments work together when natural disasters occur to assess the impacts and determine whether there is need for an AgriRecovery initiative and targeted assistance (cost-shared on a 60:40 basis between the federal government and participating provinces or territories) to help with the often extraordinary costs of recovery.

Action 24: Government Operations Centre Request for Federal Assistance

Lead department: Public Safety Canada
Implements objective: Disaster Resilience 2
Also supports: Disaster Resilience 3

The Government Operations Centre Request for Federal Assistance (RFA) is the Government of Canada's process through which disaster response support, including floods, is provided to provinces and territories. A well-established process exists for managing RFAs through Public Safety which includes interprovincial and interdepartmental consultation and coordination prior to directing a request to a federal organization.

The province or territory submits a formal RFA to describe what they would need in federal government support for a successful emergency response. Public Safety's Government Operations Centre is ready to respond to any situation, at any time. Its "all-hazards" approach to planning, response and support means the Government of Canada can adapt quickly, under any circumstance, when a province or territory requests assistance.

Action 25: Emergency Management Assistance Program

Lead department: Indigenous Services Canada
Implements objectives: Disaster Resilience 1; Disaster Resilience 5

In partnership with First Nation communities, provincial and territorial governments and non-governmental organizations, Indigenous Services Canada's (ISC) Emergency Management Assistance Program (EMAP) helps communities on reserve access emergency assistance services. Through EMAP, ISC provides direct funding to First Nation communities to mitigate, prepare and respond to hazards and build resiliency using the four pillars of emergency management: Mitigation; Preparedness; Response; and Recovery. The program includes the following funding streams: Capacity Enhancement; FireSmart; Non-Structural Mitigation and Preparedness; and Response and Recovery.

EMAP supports community disaster resilience by providing funding for First Nations and Tribal Councils to hire emergency management coordinators. It also supports non-structural mitigation and preparedness initiatives for small-scale projects undertaken by First Nations communities on-reserve to prepare for and mitigate emergencies and reduce impacts caused by natural disasters.

EMAP supports response and recovery efforts when a First Nation experiences a present or imminent threat that requires prompt coordination of actions to protect the health, safety or welfare of people, or to limit damage to property or the environment. The program reimburses the cost of response and recovery activities due to emergencies, guided by program eligibility criteria.

The EMAP program authorities also enable ISC to provide response and recovery funding to respond to health emergencies caused by natural or accidental hazards, including disaster-related mental health impacts and treatment and primary care needs during emergency events.

To improve wildfire management and adaptation efforts, the FireSmart program stream under EMAP enhances the capacity of First Nations communities to prevent and prepare against wildland fires. This includes providing funding for on-reserve ~~fire suppression services.~~ FireSmart leverages Indigenous knowledge of the local environment and terrain to improve emergency planning, preparation and response to wildfires.

ISC also provides Health Emergency Management (HEM) funding to First Nation communities on-reserve for health emergency preparedness to support community-led health emergency preparedness activities, such as conducting health risk assessments and preparing tools to support hazard community plans, supporting community mental wellness teams and front-line workers and supporting communities by providing first responder training.

Action 26: **Federal Investments in Wildfire Management (response and operations)**

Lead department: Natural Resources Canada
Implements objective: Disaster Resilience 2
Also supports: Disaster Resilience 3; Disaster Resilience 4

The Government of Canada has provided critical investments to support wildfire management and response over the last five years. Budget 2022 committed an additional $346.1 million to support provinces and territories in procuring firefighting equipment, providing firefighter training and employment supports, creating a Centre of Expertise in Indigenous Fire Stewardship, and increasing firefighting capacity in First Nations communities. Budget 2021 investments targeted enhanced forest mapping in northern areas at risk of wildfires and enhanced capacity of the Canadian Interagency Forest Fire Centre, Budget 2019 provided $156 million in new emergency management resources, including $38.5 million toward wildland fire management through NRCan. A portion of this investment established the five-year Wildland Fire Resilience Contributions Program, which targets projects for public education and partnerships, information management and tool development (providing fire management agencies with the best available information and science-based tools to support decision-making, increased risk prediction and faster fire response), and protecting forest resources and communities (helping forest-based communities prepare for and respond to extreme fire events).

Spotlight on Success: Geoscience Supporting Public Safety and Climate Change Resilience

As part of Natural Resource Canada's Public Safety Geoscience Program, preliminary monitoring is underway to measure and understand the parameters that contribute to glacial lake outburst floods in areas of glacial melt and retreat to understand potential impacts for future events of this nature.

To support climate change adaptation in permafrost regions, NRCan scientists in the Climate Change Geoscience Program recently released A Ground Ice Atlas of Canada as a GSC Open File. The Atlas describes the varied ground ice types and abundances in northern Canada, illustrating them with 31 examples from communities, development sites and natural settings throughout the Canadian Arctic. The Atlas compares modelled ground ice abundances to field observations and focusses on the implications of thaw processes in ice-rich terrain (thermokarst), providing guidance for resource development projects and adaptation measures related to climate change in the North.

3.1.3 The Federal Role on Disaster Resilience

Building resilience to climate-related disasters is multi-faceted and requires effective governance, whole of society collaboration and strong communication on disaster risks, as well as tools to help address climate change. Improved emergency preparedness capabilities, data generation and public awareness focused on building climate resilience and adaptation are all more important than ever.

Emergency management (EM) roles and responsibilities in Canada are shared by federal, provincial and territorial governments and their partners, including Indigenous leaders and community governments and municipalities. The Government of Canada exercises leadership at the national and international levels relating to EM responsibilities in its exclusive fields of jurisdictions and on lands and properties under federal responsibility. Municipalities and individual citizens also have a responsibility to be prepared for disasters, and contribute to a community's ability to respond to an emergency. Since most disasters occur locally, in an emergency, the first response is almost always by the local authorities or at the provincial or territorial level. Should a provincial or territorial government or Indigenous community require resources beyond their capacity to cope in an emergency or disaster, the federal government will respond to requests for assistance.

Emergency Management On-Reserve

In an emergency, the Government of Canada responds to any request for assistance by a provincial or territorial government, should the provincial or territorial government require resources beyond their capacity to cope. Public Safety Canada is the primary coordinating department for emergency management and works to ensure an integrated Government of Canada response. Indigenous Services Canada (ISC) has responsibility to support First Nations on reserves in emergency management as per the *Emergency Management Act* and delegated authority as under the *Indian Act*.

ISC holds service agreements with provinces and territories, and other service delivery partners, to ensure that First Nations have access to comparable emergency assistance services available to other residents in their respective jurisdiction, and that response is conducted without undue delay. In recognition of Indigenous Peoples' right to self-determination, ISC is exploring opportunities to transition to new multilateral approaches where First Nations are included in emergency management as full and equal partners.

During an emergency, ISC provides advice and support within its mandate and authority as requested by the affected First Nation and province or territory. After the emergency, the Government of Canada reimburses the province, territory, First Nation or service delivery partner for eligible costs associated with emergency response and recovery. In the event of property or critical infrastructure damage in a community, ISC works with the First Nation to assess the situation, determine the most effective way to repair damage and ensure ongoing program and service delivery to the community.

A nationally consistent emergency management and adaptation framework is necessary to ensure no one living in Canada is left behind. The Government of Canada is committed to working with all levels of government, Indigenous communities, civil society, private industry, non-governmental organizations and academia through increased collaboration, coordination and ambition to address the magnitude of the challenges ahead. It will also be important to support regional flexibility, given that climate impacts are manifested differently across the country. Despite the leadership of, and innovation by, different actors, to date, our actions on adaptation have often been reactive, limited and lacking alignment across sectors.

The *EM Strategy for Canada: Toward a Resilient 2030* (EM Strategy) was endorsed in January 2019 by FPT Ministers Responsible for Emergency Management. The Strategy builds on previous FPT efforts by establishing priorities to strengthen the resilience of Canadian society by 2030. It seeks to guide FPT governments, and their respective EM partners in carrying out priorities to strengthen Canada's ability to understand risk and to prevent, mitigate, prepare for, respond to and recover from disasters. The Strategy also commits FPT governments, within their areas of responsibility, to empower Indigenous Peoples to integrate traditional knowledge, awareness and education programs into broader emergency management and disaster risk reduction.

3.2 Health and Wellbeing

Health and Wellbeing Summary Table	
Federal departments and agencies leading action	• Canadian Food Inspection Agency • Canadian Institutes of Health Research • Health Canada • Indigenous Services Canada • Public Health Agency of Canada
National Adaptation Strategy objectives	**Health and Wellbeing 1** Health systems have the expertise, knowledge and resources needed to identify climate change-related risks and take equitable, evidence-based action to protect health. **Health and Wellbeing 2** Health authorities have identified the extent to which climate change is impacting health and have established methods for tracking future health impacts and evaluating progress towards protecting health and reducing risks. **Health and Wellbeing 3** People are protected from urgent climate-related health risks such as extreme heat, infectious diseases, foodborne hazards and impacts to traditional foods, poor mental health outcomes and others. **Health and Wellbeing 4** Climate action across all sectors promotes good health and prioritizes measures that have multiple benefits (e.g., protecting health and improving environmental sustainability).
Significant risks addressed	Risks to human health and wellness in Canada, including adverse impacts on physical and mental health due to hazards accompanying extreme weather events, heatwaves, lower ambient air quality and increasing ranges of vector-borne pathogens.
Critical actions	**Action 1: Health Canada's heat program** is increasing Canada's ability and capacity to reduce health risks from extreme heat, including through the development and delivery of heat warnings called **Heat Alert and Response Systems** (HARS), as well as knowledge, tools and guidance to support health authorities in protecting Canadians. **Action 2: HealthADAPT** provides evidence, technical guidance, tools and supports health authorities and health systems across Canada in identifying the climate risks they face and taking actions to protect the health of their communities. HealthADAPT works to support communities of all types, particularly those with lower capacity and those most at-risk. **Action 3:** The **Climate Change and Health Adaptation Program for First Nation and Inuit Communities** supports First Nation and Inuit-designed and driven projects, strengthening those communities in their capacity to adapt to the health impacts of climate change. **Action 4:** The **Climate Change Research and Knowledge Mobilization Initiative** works to advance climate change and health research. **Action 5:** The **Infectious Disease and Climate Change Program (IDCCP)** supports monitoring, education and awareness tools to better respond to the health risks associated with climate-driven infectious diseases.

3.2.1 Why Action is Needed Now

The World Health Organization identified climate change as the greatest threat to global health in the 21st century. As outlined in the recently released national science assessment, *Health of Canadians in a Changing Climate*, the health risks to Canadians from climate change are growing, and Canada needs to rapidly scale-up efforts to protect individuals, communities and health systems. Health is affected by climate change through illnesses and deaths from exposure to extreme weather events (e.g., extreme heat), and through the expansion of disease vectors, such as ticks that transmit Lyme disease.

While all people in Canada are at-risk from the health impacts of climate change, the risk is not shared equally. Those already facing inequity in our society are among those most likely to be impacted when climate-related events occur. Climate change is also likely to create new inequities that impact health and wellbeing. Older adults, those living with pre-existing physical and mental health conditions, people facing financial hardship and members of equity seeking groups are among those most at-risk. The national science assessment also highlights that the health impacts of climate change on First Nations, Inuit and Métis peoples are far-reaching, with disproportionate impacts on their communities, including food and water security and safety, air quality, infrastructure, personal safety, mental health and wellness, livelihoods, culture and identity.

Extreme heat and its impacts on people living in Canada is a growing concern. During the extreme heat event that impacted Western Canada in 2021, temperatures rose to nearly 50°C and caused 619 deaths—one of the deadliest weather-related disasters in Canadian history. Extreme heat is a health risk to all; however, some people are more affected than others, such as those who are living with pre-existing health conditions. For example, 90% of people who died in the Western Canada heat event were 60 years or older. While heat is a health risk outdoors, in Canada, the majority of people die from extreme heat indoors (98% of those who died during the 2021 extreme heat event in BC died inside). Canadian homes and communities are unprepared for increasingly severe and frequent extreme heat.

As a result of climate-driven increases in wildfires, air quality in Canadian communities is at risk due to smoke which can expose millions of people to high levels of toxic air pollutants. Wildfire smoke can cause a range of health complications, from eye, ear, nose and throat irritation to aggravating cardiovascular and lung disease and increasing the risk of cancer. It is estimated that between 570 and 2,700 premature deaths occur every year in Canada due to exposure to wildfire smoke.

The emergence and re-emergence of climate-sensitive infectious disease continues to threaten the health and wellbeing of people living in Canada. For example, reported cases of Lyme disease have continued to increase with the highest ever recorded number of more than 2800 cases in Canada in 2021. This is up from 144 reported cases in 2009. Strengthened monitoring and modelling is needed to assess the risks of known and emerging diseases in Canada and more education and awareness is needed to communicate these risks to health professionals and Canadians.

Climate change is also threatening the safety and security of our food supply. Changes to precipitation patterns, temperature and more frequent extreme weather events are projected to increase the introduction of hazards to food, including pathogens, toxins and chemical contaminants, leading to food-borne illness and negative health impacts. Climate change is also

increasing risks to food safety and security through disruptions to food systems, increases in food prices and negative nutritional effects.

Climate change not only impacts the health of individuals, but also threatens the capacity of the health systems they rely on to provide care when it is needed. Extreme events like what we are expected to see more of in Canada (e.g., extreme heat, floods, wildfires, etc.) have already impacted the capacity of health systems and health facilities to provide care. Hospitals have been flooded, wildfires have forced the evacuation of patients and extreme heat has made conducting surgeries impossible. Health systems must overcome gaps in knowledge and technical capacity in order to identify the risks they face, and take actions to safeguard their operations and protect health.

3.2.2 Critical Actions

Action 1: Protecting Canadians from Extreme Heat

Lead department: Health Canada
Implements objective: Health and Wellbeing 3

Since 2008, Health Canada's heat program is increasing Canada's ability and capacity to adapt and reduce health risks from extreme heat. The program has supported the development of heat safety programs called Heat Alert and Response Systems across Canada. Health Canada, with partners such as Environment and Climate Change Canada and provincial public health agencies, works to fill scientific evidence gaps, improve heat health programming and support local level health authorities in adapting to climate change and protecting their communities from extreme heat.

Health Canada's expanded heat program will work to enhance and fulfil the federal role in responding to increasingly dangerous extreme heat. Health Canada is renowned as an international leader in heat health programming and adaptation. With expanded resources, this program would fill critical evidence and guidance gaps hindering adaptive action at local and provincial/territorial levels—particularly related to adapting to indoor heat, the leading cause of heat-related death in Canada. The program would ramp-up Canada's heat health research capacity, speed up the development of innovative, effective and equitable heat health adaptations and increase the support available to health authorities across Canada to access the best available guidance and resources to support real-world measures that protect people and communities.

Action 2: HealthADAPT

Lead department: Health Canada
Implements objectives: Health and Wellbeing 1; Health and Wellbeing 2; Health and Wellbeing 4

Health Canada's national health adaptation program, HealthADAPT, was launched in 2018 to support health authorities in identifying and addressing the climate risks facing their operations and the health of the communities they serve. Health Canada developed and shared technical guidance with health authorities across Canada and invested approximately $3.5 million in pilot projects with 10 health authorities across five provinces and territories. With Health Canada support, health authorities were able to identify complex risks facing their operations, staff and patients. Projects include innovative efforts to address the mental health impacts of flooding, support safe access to traditional food sources, and identify risks to health facilities and health care delivery.

An expanded HealthADAPT Program will build on past success to support partners across Canada in creating climate-resilient health systems. Through research, the development of technical guidance and funding, HealthADAPT will expand support for local and regional level action. An expanded HealthADAPT will also provide the national leadership and support the development of evidence and data needed to protect health from climate change. Recognizing the need to reduce future health risks from climate change, HealthADAPT will support and guide health authorities and stakeholders in improving the environmental sustainability of Canada's health sector.

Health care in Canada is among the most greenhouse gas intensive in the world (about 5% of Canada's national emissions). By supporting health authorities in reducing emissions and adapting to impacts at the same time, HealthADAPT will help partners identify ways to simultaneously protect health, reduce costs and improve sustainability. For example, by working to reduce energy demands, health facilities can become more resilient to extreme events that may disrupt power, while also saving money that can be redirected to patient care).

Spotlight on Success: HealthADAPT

Through the HealthADAPT program, Health Canada is taking action to support the health sector to prepare for and respond to the impacts of climate change. In 2018, Health Canada provided close to $3.5 million over four years to 10 Canadian health authorities to develop pilot projects that address climate-driven health risks. For example, British Columbia's First Nations Health Authority is addressing marine food safety on the west coast and Quebec's Centre intégré de santé et de services sociaux de Chaudière-Appalaches is tackling mental health impacts from extreme weather. These projects have led to action across the country and insight into how Canada's health care system can better adapt to a changing climate. In addition, these projects provide a foundation for adaptation for other health authorities across Canada.

Action 3: Climate Change and Health Adaptation Program for First Nation and Inuit Communities

Lead department: Indigenous Services Canada
Implements objective: Health and Wellbeing 1
Also supports: Health and Wellbeing 3

The Climate Change and Health Adaptation Program supports First Nations south of 60°N, First Nations north of 60°N and Inuit through separate intakes and processes to identify, assess and respond to the health impacts of climate change by funding community-designed and driven projects. Past projects include traditional food security and access to country food, engagement with Elders, safety while on the land, impacts of extreme weather events, and mental health impacts of climate change on youth.

Supporting projects focusing on human health and a changing climate, the program enables communities to:

- develop and implement health-related adaptation or action plans
- develop knowledge-building and communication materials
- support adaptation decision-making at the local, regional and national levels
- begin directly implementing adaptation actions identified through these other processes

Since its inception, 41% of First Nations and Inuit-designed and driven projects have been funded under the Climate Change and Health Adaptation Program, strengthening those communities in their capacity to adapt to the health impacts of climate change

Action 4: Climate Change Research and Knowledge Mobilization Initiative

Lead department: Canadian Institutes of Health Research
Implements objective: Health and Wellbeing 1

The Canadian Institutes of Health Research will continue the implementation of Budget 2017 investments in Clean Growth and Climate Change, including the Canadian Lyme Disease Research Network and the Food Security in the Canadian North initiative, as well as deliver commitments with existing resources that support research on environments and health.

Action 5: Infectious Disease and Climate Change Program

Lead department: Public Health Agency of Canada
Implements objective: Health and Wellbeing 1
Also supports: Health and Wellbeing 3

The Public Health Agency of Canada's (PHAC) Infectious Disease and Climate Change Program (IDCCP) supports climate change adaptation and resiliency through monitoring activities and providing access to education and awareness information and tools to equip health professionals, individuals and communities with the information to protect and improve health from climate sensitive infectious diseases. The IDCCP primarily focuses on Lyme disease, alongside the advancement of work on tick bite prevention and West Nile virus. Key results include:

- building capacity to advance targeted risk modeling activities on tick- and mosquito-borne diseases to support federal-provincial-territorial decision-making
- creating new risk maps, models and reports for Lyme disease and West Nile virus
- working with provincial/territorial counterparts to enhance tick-borne disease surveillance in Canada, leveraging Lyme disease work
- building capacity within PHAC to support laboratory diagnostics for co-infections related to tick-borne diseases
- advancing public education and awareness activities with a focus on Lyme disease (e.g., annual awareness campaigns, traveling children's tick exhibit in partnership with the Museum of Science and Technology)

Spotlight on Success: The Infectious Disease and Climate Change Fund

Since its launch in 2017, the Public Health Agency of Canada's Infectious Disease and Climate Change Fund has enabled new and innovative partnerships, tools, capacity building and knowledge mobilization. This included a national poster contest with over 700 submissions; curriculum development for Grade 6 Students; a national baseline survey of tick-borne disease awareness for veterinarians, pet owners and hunters and anglers; videos and innovative content on the Climate Atlas of Canada (ticks, mosquitoes, water-borne diseases); and expanding a citizen-science based application to most provinces across Canada to support surveillance, and provide helpful local resources on ticks and tick-borne diseases. To date, 33 projects totaling $10.3 million have been funded.

3.2.3 The Federal Role on Health and Wellbeing

COVID-19 has made it clear that protecting the health of Canadians requires teamwork across all levels of government. Provinces and territories play a lead role in financing, regulating and administering healthcare in Canada, protecting and promoting public health and carrying-out health-related emergency preparedness and response. The Government of Canada works to support research and access to the best available health evidence, facilitate data and information sharing, support health emergency response efforts and preparedness planning and provide the leadership needed to ensure all Canadians have access to quality health care. Through the efforts of the Canadian Food Inspection Agency, the federal government works with partners to ensure Canada's food supply is safe.

In some contexts, such as the health of Inuit and First Nations people who live on reserve, the federal government plays a more direct role in providing health care services. The Government of Canada continues to work with First Nations and Inuit peoples and local health authorities on climate-health adaptation initiatives and will ensure these efforts are coordinated with what is being done for all Canadians to achieve equitable benefits for First Nations and Inuit peoples.

This teamwork will be critical to protecting health from climate change. For example, during the early stages of the COVID-19 pandemic, Health Canada helped provinces and territories and local health authorities to adapt extreme heat programming to align with COVID-19 guidelines and emerging international best practices.

The Government of Canada works in partnership with provinces, territories and local health authorities to conduct disease surveillance and enhance prevention, including for Lyme disease and other illnesses and diseases that will increase in Canada due to climate change. By collaborating with provincial and territorial health authorities, the federal government can monitor trends nationally and better support provinces and territories in taking evidence-based measures to protect health across the country.

Health authorities across Canada have established partnerships that will be critical as we work to adapt to climate change. Building on this existing collaboration between the federal government, provincial and territorial governments and local health authorities will be necessary for health systems to adapt and fulfil their role in protecting the health of all Canadians.

Disability, Accessibility and Inclusion for Adaptation

Achieving Canada's adaptation priorities requires the inclusion of historically marginalized groups in decision-making processes to ensure actions are inclusive and accessible for all Canadians. Research shows that Canadians with disabilities face greater climate risks, including increased fatality rates from extreme weather events. Governments and industry will need to take action to consider and include persons with disabilities in Canada's plans to address climate adaptation to address these disproportionate risks.

For persons with disabilities, their exclusion from climate adaptation planning can be a matter of life and death. Under the National Adaptation Strategy, the Government of Canada is committed to providing opportunities for partners, stakeholders, Indigenous communities, and provincial-territorial counterparts to introduce inclusive measures that meet the unique needs and intersectional perspectives of persons with disabilities.

Moving forward, key actions could include:

- Considering the unique needs and intersectional perspectives of persons with disabilities in future programs and initiatives, including alignment with the *United Nations Convention on the Rights of Persons with Disabilities (UNCRPD)* and the *Accessible Canada Act.*
- Persons with disabilities are included in adaptation governance structures to reflect the 'Nothing Without Us' principle.
- The purposeful design of infrastructure programs to improve accessibility while meeting climate mitigation targets
- Communication and early warnings systems consider the need from the disabled populations across Canada.

3.3 Nature and Biodiversity

Nature and Biodiversity Summary Table	
Federal departments and agencies leading action	• Environment and Climate Change Canada • Fisheries and Oceans Canada • Natural Resources Canada • Parks Canada
National Adaptation Strategy objectives	**Nature and Biodiversity 1** Human activities are transformed to halt and reverse biodiversity loss and enhance ecosystem connectivity and resilience. **Nature and Biodiversity 2** Indigenous Peoples, organizations and communities exercise self-determination on their lands, waters and territories for ecosystem stewardship initiatives to adapt to climate change. **Nature and Biodiversity 3** The use of nature-based solutions is accelerated to increase resilience, reduce reliance and stress on grey infrastructure, increase social benefits of nature. **Nature and Biodiversity 4** The ecosystems most affected by climate change are monitored, restored and managed to ensure their continued viability and adaptive capacity.
Significant risks addressed	Risks to Canadian ecosystems and species, including threats to biodiversity, ecosystem resilience and the ability of ecosystems to provide a range of services and benefits to people such as climate regulation, provision of natural resources, habitat and access to culturally important activities and resources.
Critical actions	**Action 1:** The **Natural Climate Solutions Fund** to leverage the inherent ability of natural ecosystems to sequester carbon and reduce atmospheric greenhouse gas concentrations. **Action 2: Canada's Enhanced Nature Legacy** focuses on conserving Canada's lands and freshwater, protecting species, advancing Indigenous reconciliation and increasing access to nature. **Action 3:** The **Marine Protected Area Program** furthers efforts to reach the goal of conserving 25% of Canada's oceans by 2025 and 30% by 2030. **Action 4:** The **National Program for Ecological Corridors** supports the establishment of ecological corridors in key areas across Canada to help species adapt to climate change and contribute to halting and reversing biodiversity loss. **Action 5:** The **Aquatic Ecosystems Restoration Fund** supports restoration activities to address climate change's impacts on coastal and marine environments**.**

3.3.1 Why Action is Needed Now

Climate change and nature are inextricably linked. Climate change is a key driver of ecosystem destruction and biodiversity loss—species and the habitats they rely on are shifting and in some cases disappearing in response to changing climate conditions. Ecosystems degraded by increasing temperatures, flooding and wildfire, in turn, make Canadians more exposed and vulnerable to those same climate hazards and impacts. At the same time, nature is also one of our greatest allies in the fight against climate change, helping protect communities against the impacts of a changing climate.

Climate change adaptation and nature intersect in two broad ways. Firstly, the services provided by healthy ecosystems can be leveraged to enhance climate resilience (e.g., restoration and protection of wetlands to mitigate flooding). This can be thought of as nature-for-adaptation. Secondly, as Canada's natural environment is itself vulnerable to climate impacts, we need to ensure ecosystems are resilient. This can be thought of as ecosystem resilience, or adaptation-for-nature, which can help restore, protect and maintain the essential services and basic needs that nature provides us like food, clean water, productive soil, natural pest control, pollination, flood and erosion controls and carbon sequestration.

Action on both fronts is urgently needed at all levels and will help to enhance resilience while preserving Canada's natural legacy.

3.3.2 Critical Actions

Action 1: Natural Climate Solutions Fund

Lead departments:	Natural Resources Canada; Environment Climate Change Canada; Agriculture and Agri-food Canada
Implements objective:	Nature and Biodiversity 3

The Natural Climate Solutions Fund ($4 billion) aims to leverage the inherent capacity of natural ecosystems to sequester carbon and reduce atmospheric greenhouse gas concentrations. This fund supports three federal programs: the 2 Billion Trees Program ($3.2 billion), the Nature Smart Climate Solutions Fund ($631 million, with additional funding of $780 million proposed in Budget 2022) and the Agricultural Climate Solutions Program ($185 million, plus $200 million in Budget 2021, with an additional $470 million proposed in Budget 2022) (see Economy and Workers section).

Action 1.1: 2 Billion Trees

Lead department:	Natural Resources Canada
Implements objective:	Nature and Biodiversity 3

The 2 Billion Trees (2BT) program under the Natural Climate Solutions Fund will invest up to $3.2 billion by 2031 in supporting provinces, territories, third-party organizations (for and not-for profit) and Indigenous organizations to plant two billion trees across Canada. Planting two billion trees across the country will help Canada's efforts to tackle the twin crises of climate change and biodiversity loss, while also contributing to multiple co-benefits such as

increasing the resilience of forests to climate change and reducing community risks to natural disasters like flooding and wildfires.

Action 1.2: Nature Smart Climate Solutions Fund

Lead department: Environment and Climate Change Canada
Implements objective: Nature and Biodiversity 4

The Nature Smart Climate Solutions Fund supports projects that conserve, restore and enhance wetlands, peatlands and grasslands to store carbon. Projects will focus on conserving, restoring and enhancing the management of important habitat for migratory birds, species at risk and other species of cultural and/or socio-economic importance to local communities. This program is a $631 million, 10-year fund to protect nature where it protects us. Activities during 2021-22 to 2030-31 will seek to reduce 2-4 megatons of greenhouse gas emissions per year from 2030 to 2050 and onward.

Action 2: Marine Protected Areas Program

Lead department: Fisheries and Oceans Canada
Implements objective: Nature and Biodiversity 4

The Marine Protected Areas Program ($976 million) aims to protect 25% of Canada's oceans by 2025 and 30% by 2030.

Protected Areas and Marine Protected Areas networks help conserve and protect marine species and populations, the diversity of ecosystems that marine organisms depend on and special places such as underwater canyons and hydrothermal vents. These protected areas contribute to improved species resilience and adaptation to future pressures, and over time support the local economies and coastal communities that rely on fisheries resources.

Action 3: Canada's Enhanced Nature Legacy Program

Lead department: Environment and Climate Change Canada
Implements objective: Nature and Biodiversity 4

Canada's Enhanced Nature Legacy initiative ($2.3 billion) aims to conserve up to 1 million square kilometers of additional land and inland waters to achieve Canada's target to conserve 25 %of Canada's land and waters by 2025, including through national wildlife areas, and Indigenous Protected and Conserved Areas; create thousands of jobs in nature conservation and management; accelerate new provincial and territorial protected areas; support Indigenous guardians and take action to conserve priority species at imminent risk of disappearing, including through partnerships with Indigenous Peoples. This work also includes Nature Agreement negotiations with provincial and territorial governments, seeking to increase coordinated action towards federal nature targets (25% by 2025, 30% by 2030, protection of species at risk, etc.).

Action 4: National Program for Ecological Corridors

Lead department: Parks Canada Agency
Implements objective: Nature and Biodiversity 4

The National Program for Ecological Corridors ($60.6 million) will support the establishment of ecological corridors in key areas across Canada. These corridors will help species adapt to climate change, and contribute to halting and reversing biodiversity loss. Parks Canada will collaborate with other levels of government, partners, experts and Indigenous Peoples to develop national criteria for the identification of corridors and map where they would be beneficial for biodiversity conservation. As the world warms, species will shift their ranges across the landscape. If wildlife populations are isolated in patches of habitat confined to protected areas, they are unlikely to survive in the long term. This program is critical to the maintenance of ecological integrity of existing protected and conserved areas and will ensure that species and ecological processes can adapt to a changing climate.

Action 5: Aquatic Ecosystems Restoration Fund

Lead department: Fisheries and Oceans Canada
Implements objective: Nature and Biodiversity 4

The Aquatic Ecosystems Restoration Fund supports restoration activities that will address climate change's impacts to coastal and marine environments**.** It builds on the success of the Coastal Restoration Fund. The renewed and expanded program will support aquatic ecosystems restoration projects to address the root causes of impacts to coastal and marine environments, ensuring the long-term sustainability of aquatic habitats and the nature-based climate solutions they provide.

3.3.3 The Federal Role on Nature and Biodiversity

The actions described above are largely conventional programs to restore and protect nature. Adaptation objectives can be supported as a co-benefit of this programming since, generally speaking, healthy ecosystems tend to be more resilient to climate impacts and, in turn, can better minimize the damages of climate impacts to surrounding areas.

However, as the urgency to adapt becomes increasingly apparent, it is critical that efforts at all levels on conservation and biodiversity consider and support adaptation efforts more directly—it is no longer sufficient for adaptation to be advanced merely as a co-benefit of broader efforts. The federal government shares jurisdiction over nature with provincial, territorial and municipal governments and Indigenous Peoples. In this regard, it is an opportunity for governments, Indigenous Peoples, and the for-profit and non-profit sectors to work together more deliberately and support stronger outcomes at the intersection of nature and adaptation, building on the positive and extensive collaborations, partnerships and investments to date.

As the largest landowner in Canada, the federal government has a key role in this regard and has established domestic and international biodiversity goals. These goals include conserving a quarter of Canada's lands and a quarter of its oceans by 2025, and working toward conserving

30% by 2030. The Government of Canada is working towards reaching these goals with its partners by creating healthier habitats for species at risk, and improving Canada's natural environment. The federal government will also work bilaterally with provinces and territories and explore how to leverage existing conservation programs to drive adaptation outcomes more directly.

The Government of Canada's work to support the development and implementation of adaptation-related goals and targets of the Post-2020 Global Biodiversity Framework will also advance efforts in this space. The 15th Conference of Parties (COP15) to the United Nations Convention on Biological Diversity, held in Montreal, Quebec, is a major international conference with thousands of delegates gathered to set new goals and develop an action plan for nature over the next decade. Canada's priorities for COP15 include continuing to advocate for international collaboration in protecting nature and halting biodiversity loss around the world. The final adaptation-related goals and targets of the Post-2020 Global Biodiversity Framework will be included and implemented as part of Canada's overarching National Adaptation Strategy.

3.4 Resilient Infrastructure

Resilient Infrastructure Summary Table	
Federal departments and agencies leading action	• Indigenous Services Canada • Infrastructure Canada • National Research Council • Standards Council of Canada • Transport Canada
National Adaptation Strategy objectives	**Infrastructure 1** Technical standards have been updated or developed to embed climate change in all decisions to locate, plan, design, manage, adapt, operate and maintain infrastructure systems across their lifecycle. **Infrastructure 2** Public and private infrastructure decision-making is informed by system-wide assessments of, and planning for, climate risks. **Infrastructure 3** Infrastructure decisions prioritize benefits for marginalized populations and those in high-risk areas. **Infrastructure 4** All new investments in infrastructure apply resilience criteria and adopt climate change guidance, standards, and future design data to maximize the long-term benefits of infrastructure outcomes.
Significant risks addressed	Risks to infrastructure from extreme weather events and slow onset impacts, such as damage to homes, buildings and critical infrastructure from heavy precipitation events, permafrost thaw, coastal erosion, high winds and flooding; increased probability of power outages and grid failures and an increasing risk of cascading infrastructure failures resulting from climate-driven hazards, such as wildfires and extreme heat events.
Critical actions	**Action 1:** The **Disaster Mitigation and Adaptation Fund** is helping communities remain resilient in the face of extreme events, such as flooding, wildfires and drought, by investing in structural and natural infrastructure projects that increase climate change resilience. **Action 2:** The **Natural Infrastructure Fund** supports projects that use natural or hybrid approaches to deliver traditional infrastructure outcomes, while delivering important co-benefits, such as increased climate change resilience, health and well-being, access to nature, improved environmental quality and enhanced biodiversity and habitats. **Action 3:** The **Climate Resilient Built Environment Initiative** and the **Standards to Support Resilient Infrastructure Program** provide the knowledge to adapt Canada's public infrastructure where necessary, inform changes to building and infrastructure codes and create guides, standards, tools and technical solutions for climate resilience, building on the foundational work completed through the recent Climate-Resilient Buildings and Core Public Infrastructure Initiative. **Action 4:** The **National Trade Corridors Fund** supports infrastructure projects, including those that help the transportation system and major trade corridors withstand the effects of climate change.

	Action 5: The **First Nations Infrastructure Fund** supports disaster risk reduction infrastructure on-reserve to advance community health and safety, protect infrastructure assets and support community resilience. **Action 6:** Address climate-related risks to First Nations communities on-reserve through the **Capital Facilities and Maintenance Program**. **Action 7:** The **Supporting Resilient Infrastructure Initiative** scales-up climate resilient infrastructure through supporting better-informed, long-term decisions in the context of a rapidly changing climate. The initiative will increase data, evidence and knowledge; support the creation of guidance, standards and codes; inform integrated planning capacity and ultimately shape capital investment decisions.

3.4.1 Why Action is Needed Now

Infrastructure makes up the physical backbone of our lives and communities, and delivers critical services including transportation, health care, utilities, communications and trade. Our infrastructure includes built infrastructure, such as houses, bridges and dams, as well as natural infrastructure, such as wetlands, salt marshes and urban forests.

Climate change impacts infrastructure systems and services, not just individual assets, with cascading impacts that can result in loss of life, costly damage to communities, and the disruption of critical services. Extensive engagement throughout the NAS development process highlighted several infrastructure challenges to address in the expanded approach to climate change adaptation across Canada. These include:

- Infrastructure decisions continue to be based on historical climate data and practices that do not account for future climate risks and impacts, resulting in the continued construction of new infrastructure that is vulnerable to climate change.
- Infrastructure decision-making, from planning to operations and maintenance, are made on an asset-by-asset basis with a short-term view, rather than considering the longer-term interdependencies and co-benefits of infrastructure systems and services, reducing opportunities to build systemic resilience.
- Climate change makes it even more difficult for people and communities dealing with pre-existing vulnerabilities and systemic inequities related to infrastructure, such as infrastructure deficits and funding gaps.
- Infrastructure investments do not maximize long-term benefits, including climate resilience, as private and public infrastructure investors do not have a systematic, informed approach to purposefully guide the allocation of public and private funds.

Additionally, infrastructure has been identified by the Council of Canadian Academies as the top sector for climate change resilience potential in Canada, as measured by the proportion of damages that can be avoided through adaptation policy and programs for proactive, preventative solutions.

3.4.2 Critical Actions

Action 1: Disaster Mitigation and Adaptation Fund

Lead department: Infrastructure Canada
Implements objective: Cross Cutting 4

The Disaster Mitigation and Adaptation Fund (DMAF) has helped communities remain resilient in the face of extreme events, such as flooding, wildfires and drought, by investing in built and natural infrastructure projects. Building on an initial $2-billion investment, Budget 2021 allocated an additional $1.375 billion to DMAF over 12 years, introducing a Small Projects Stream and allocating a minimum of 10% of funding to Indigenous recipients. Projects funded through DMAF apply a resilience assessment within the application process, ensuring that federal funding links to advancing climate resilience. In addition, the increase in community resilience is assessed as one of the main program criteria.

The DMAF will receive a new additional investment of up to $489 million over the next ten years to provide capital funding that ensures continuity of support to Canadian communities as quickly as possible, given the urgency of adaptation needs.

Spotlight on success: Infrastructure Canada's Disaster Mitigation and Adaptation Fund

To date, DMAF has committed a total of $2.2 billion for 72 infrastructure projects across the country that help communities better prepare for, and withstand, the potential impacts of natural disasters, prevent infrastructure failures and protect Canadians. Below are a few examples of projects approved to date:

- DMAF committed $214 million in federal funding to ensure the safety and long-term sustainability of the City of Iqaluit's water supply system in Nunavut through the excavation and creation of a new reservoir and improvements to the city's water distribution system. The new and upgraded infrastructure will be designed and built to mitigate current and future impacts of climate change, including melting permafrost and severe droughts.

- DMAF invested $10 million in York Region, Ontario to plant thousands of diverse trees to enhance urban areas and urban forests. This project will help to protect residents in the region of York from extreme heat, flooding and erosion, while providing co-benefits, such as carbon sequestration and improved air quality.

- DMAF provided $16 million to the City of Victoriaville, Quebec to protect and secure the City's drinking water supply. It will increase drought resilience and help protect residents against fire by reducing the number of residents without essential services. The project will also help reduce local economic losses, while improving the community's water storage capacity.

Action 2: Natural Infrastructure Fund

Lead department: Infrastructure Canada
Implements objective: Nature and Biodiversity 3

The Natural Infrastructure Fund ($200 million) supports projects that use natural or hybrid approaches to protect the natural environment, support healthy and resilient communities, and contribute to economic growth and jobs. The Fund will bring multiple benefits to communities across Canada, including increasing climate change resilience, mitigating carbon emissions, improving environmental quality and promoting people's access to nature.

Action 3: Climate Resilient Codes and Standards for Resilient Infrastructure

Lead departments: Infrastructure Canada; National Research Council Canada; Standards Council of Canada
Implements objective: Infrastructure 1

Infrastructure Canada, in partnership with the National Research Council and Standards Council of Canada, leads the Climate Resilient Built Environment (CRBE) Initiative and the Standards to Support Resilient Infrastructure Program (SSRIP). The CRBE Initiative will actively seek opportunities to support and accelerate the uptake of climate resiliency in building and infrastructure design, asset management tools, guides, codes and standards through research and pilot projects. In complement, the SSRIP will lead the development of standardization strategies, and support their uptake to drive implementation, to mainstream climate change adaptation, enhance resilience and support informed decision making for infrastructure and buildings.

Action 4: National Trade Corridors Fund

Lead departments: Transport Canada
Implements objective: Infrastructure 4

The National Trade Corridors Fund (NTCF) received $4.6 billion to help fund infrastructure projects in Canada. Infrastructure projects include work at airports, ports, railways, transportation facilities and access roads. These projects improve the flow of goods and people in Canada, increase the flow of trade in and out of Canada, help the transportation system to withstand the effects of climate change and better adapt to new technologies and innovation, and address the transportation needs of Arctic and northern communities.

Action 5: First Nations Infrastructure Fund

Lead department: Indigenous Services Canada
Implements objective: Infrastructure 3

The Structural Mitigation stream of the First Nations Infrastructure Fund (FNIF), administered by Indigenous Services Canada, provides support for disaster risk reduction infrastructure on reserves. The FNIF funds infrastructure projects that modify hazards, including removing, reducing or eliminating them, segregating hazards by keeping them away from people and infrastructure assets, and altering the design and construction of infrastructure assets to make them more resilient to potential hazards.

Action 6: Capital Facilities and Maintenance Program

Lead department: Indigenous Services Canada
Implements objective: Infrastructure 3

The Capital Facilities and Maintenance Program invests in community infrastructure for First Nations on-reserve, including measures to address climate-related risks facing communities, such as flooding mitigation and erosion control.

Action 7: Supporting Resilient Infrastructure

Lead department: Infrastructure Canada
Implements objective: Infrastructure 1
Also supports: Infrastructure 2; Infrastructure 4

In 2021, the Minister of Infrastructure and Communities was given the mandate to create open-access climate toolkits to help infrastructure owners and investors develop projects that contribute to Canada's path to net-zero emissions. Building on this commitment, Infrastructure Canada will develop climate toolkits that will provide data, research, standards and guidelines, and case studies, and deliver place-specific and asset-specific guidance to reduce climate-related risks for infrastructure. In addition, a pool of qualified experts will be established to provide direct support to communities across the country in applying the tools to implement adaptation and greenhouse gas mitigation measures.

The Minister of Infrastructure and Communities was also given the mandate to build on the foundation of the DMAF to continue seeking opportunities to scale the construction of climate-resilient infrastructure across Canada, with a particular emphasis on communities most at risk.

Recognizing that climate-adapted codes, standards and guidance provide a major opportunity to meaningfully scale-up resiliency across the infrastructure lifecycle, Infrastructure Canada will accelerate and amplify the work on climate-informed codes, standards and guidelines for high-risk priority areas through increased and sustained funding to the National Research Council and the Standards Council of Canada. This will allow for an expanded range of work to be undertaken, notably through developing and updating practical and targeted guidance and standards to address worsening impacts from climate change (e.g., for projection of flood

hazard risks and mitigation of flooding in urban, rural, remote and coastal communities), and in developing interactive knowledge products and training that are tailored towards the needs of municipalities, public and private procurement and design professionals.

Infrastructure Canada will require climate resilience objectives across future funding programs, touching on an array of assets including transit, water, and community assets. Resilience requirements include resilience assessments, future climate-informed design data, guidelines, standards and codes, and hazard-specific criteria, with incentives for natural and/or hybrid infrastructure projects.

The Supporting Resilient Infrastructure Initiative will ensure that decision-makers and professionals are best equipped to identify key risks confronting their infrastructure assets and systems and determine locally appropriate solutions to make communities more resilient to a rapidly changing climate.

Spotlight on Success: Climate-Resilient Buildings and Core Public Infrastructure Initiative

Between 2016 and 2021, INFC invested $42.5 million in the Climate-Resilient Buildings and Core Public Infrastructure Initiative, which enabled ground-breaking work to integrate climate resilience into building and infrastructure design, guides, and codes. Key deliverables included world-leading future-looking climate data for over 660 locations across Canada to be used by building and infrastructure codes and standards, guidelines for Flood Resistant Buildings and a National Guide for Wildland-Urban Interface Fires (WUI Guide).

In particular, the WUI Guide contains guidance on: hazard and exposure assessment, vegetation management, construction measures, community planning and resources, and emergency planning and outreach. An impact analysis for implementing the WUI Guide was commissioned by the National Research Council and led by the Institute for Catastrophic Loss Reduction, and found that national adoption of the WUI Guide is predicted to save up to $4 for every $1 invested.

3.4.3 The Federal Role on Resilient Infrastructure

Adapting Canada's infrastructure requires a whole-of-society effort as provinces, territories and municipalities primarily own and operate the majority of infrastructure in Canada. This effort will include adopting and implementing key decisions over land-use planning and building codes, as well as building and maintaining the core public infrastructure that Canadians and our communities rely on.

The federal government is making significant investments to advance climate resilient infrastructure, specifically through progress in moving from knowledge to action. This includes commitments in generating the data, evidence and knowledge to make informed planning decisions, updating national building codes, standards and guidelines to account for climate-related risks, and providing capital infrastructure investments to address climate change adaptation and natural disasters. The Government of Canada will continue to be a strong partner by working with provinces, territories, municipalities and other partners to address their infrastructure priorities.

Climate resilience will be a key priority as the Government of Canada works towards its next generation of infrastructure investments.

Moving forward, potential areas for expanded federal activities in the infrastructure sector include:

- Bridging the action and funding gap through increased capital investment support
- Mandating resilience criteria in federal infrastructure investments
- Enabling systems-based approaches to account for interdependencies between assets and increase regional resiliency.

3.5 Economy and Workers

Economy and Workers Summary Table	
Federal departments and agencies leading action	• Agriculture and Agri-food Canada • Bank of Canada • Employment and Social Development Canada • Office of the Superintendent of Financial Institutions • Natural Resources Canada • Transport Canada
National Adaptation Strategy objectives	**Economy and Workers 1** Research and knowledge establish an accessible, useful business case for adaptation that can be tailored to the needs of different businesses and communities. **Economy and Workers 2** Policy and financial instruments provide incentives and remove disincentives for proactive adaptation. **Economy and Workers 3** Canada has a skilled, diverse, and adaptable workforce that is supported by education, training, knowledge and skills development to integrate future impacts of climate change. **Economy and Workers 4** Economic sectors most vulnerable to the impacts of climate change routinely assess climate change impacts on the operating environment and incorporate adaptation considerations into business decisions.
Significant risk(s) addressed	Risk of economic losses to national and regional economies, natural resource sectors, the financial sector and businesses due to extreme weather events and gradual changes in climate, with significant impacts on communities and people.
Critical actions	**Action 1:** Implement the **Climate Resilient Coastal and Northern Communities Program** to increase the resilience of communities in the North and along Canada's coasts by applying a new, systems-based approach to integrated, regional-scale projects. **Action 2:** Develop data analytics, risk quantification, and **scenario analyses to understand physical climate risks** on financial institutions. **Action 3:** Increase the resilience of Canada's supply chains through the work of the **National Supply Chain Task Force.** **Action 4:** Deliver the **Climate Resilient Mining Program** to conduct research and planning to address key climate risks to the mining sector. **Action 5:** Understand and mitigate the complex risks facing Canada's rail networks and supply chains due to climate change and extreme weather events through the **Rail Climate Change Adaptation Program**. **Action 6:** Support key economic sectors as they implement solutions to address current and emerging workforce needs through the **Sectoral Workforce Solutions Program**. **Actions 7 & 8:** Deliver **Agricultural Climate Solutions** that help to achieve sustainable farming practices and support farmers in adopting beneficial management practices, through the **Living Labs** and **On-Farm Climate Action Funds.**

	Action 9: Deliver on the **Canadian Agricultural Partnership** to strengthen and grow Canada's agriculture and agri-food sector, through **the federal, provincial, territorial (FPT) cost-shared programs**, **AAFC Science and Innovation programs** and **FPT Business Risk Management programs.**

3.5.1 Why Action is Needed Now

Canada competes in a global economy where the local, regional and national impacts of climate change, as well as the actions we take to adapt, affect communities and businesses. The impacts are felt across provincial, territorial and international borders. For example, thawing permafrost affects building and infrastructure stability, mining operations and access to markets, as well as food security for those depending on reliable access to traditional routes. Some sectors, including forestry, agriculture, fisheries and transportation, face higher levels of risk, but the impacts on workers, trade, and supply chains will have an effect across the entire economy—and ultimately every household. It is key to ensure that Canadian workers and businesses are resilient in the face of climate change, and able to lead in a world moving to net-zero.

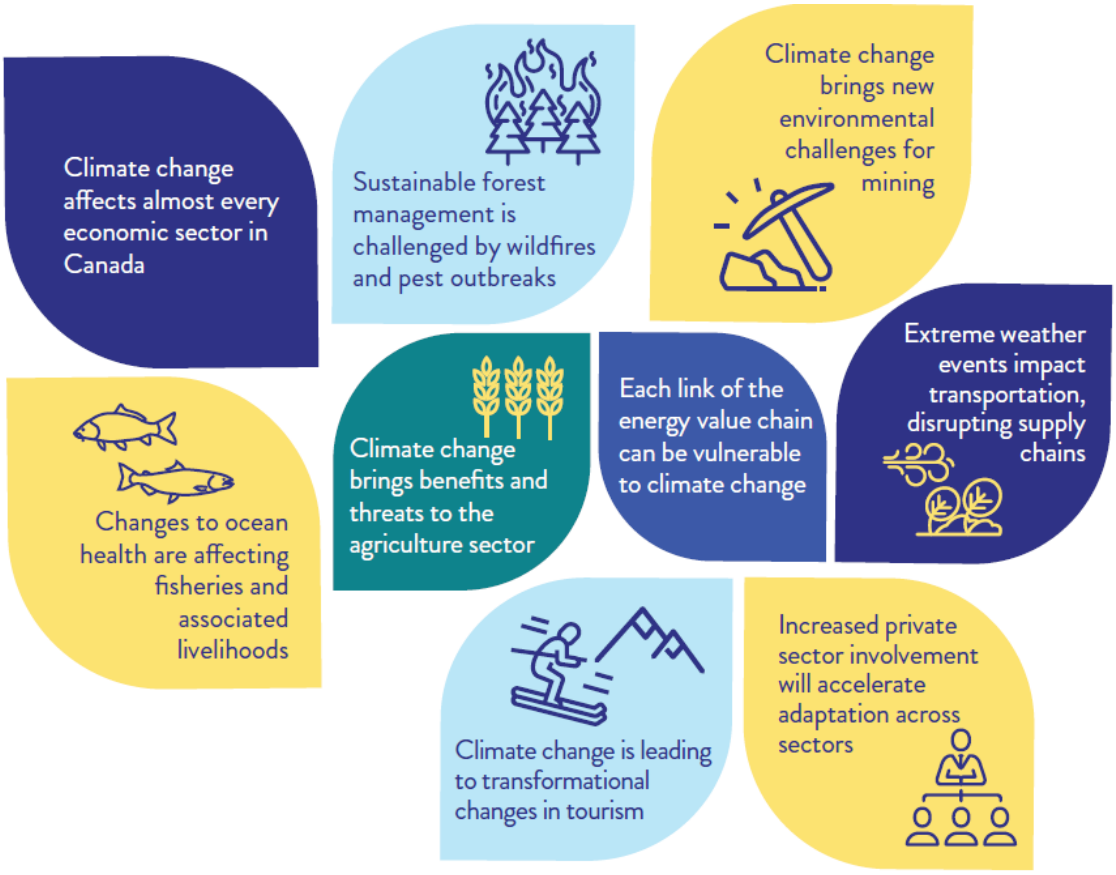

Figure 4. Examples of climate risks affecting key sectors of Canada's economy. Government of Canada (2021). Canada in a Changing Climate: National Issues Report, Sector Impacts and Adaptation [Infographic], https://doi.org/10.4095/328426

Rural communities have strong informal economies, social networks and connections to the land—community and culture that are essential for resilience—but usually have fewer resources available to adapt to climate change than urban areas. For example, climate change is significantly impacting the agriculture and agri-food sector, with farmers already experiencing the devastation of increasingly frequent droughts, floods and wildfires. This has cross-cutting linkages to health, food security, transportation and the natural environment, as well the long-term economic viability of the sector, farmers and rural communities.

Exposure to climate change risks, such as extreme heat or vectors of disease are among the challenges Canada's workers and their families are increasingly confronting. At the same time, demand for sustainable jobs and knowledgeable and skilled workers is growing in sectors that will drive the transformation to a net-zero and climate resilient economy.

As climate change threatens every facet of Canada's economy, the identification and management of physical climate risks needs to become standard practice for businesses and industry.[2] For example, climate events can disrupt critical operations when physical assets are damaged, increase insurance claims from property damage, and threaten the value of investments, such as commercial real estate. Through climate-related disclosures, companies and communities are encouraged to analyze, better understand and adopt strategies to adapt to climate risks.

The Government of Canada is committed to moving toward mandatory reporting of climate-related financial risks across a broad spectrum of the Canadian economy, based on the international Task Force on Climate-related Financial Disclosures (TCFD) Framework, and the financial community is increasingly factoring climate risk into investment decisions, such as the cost of borrowing. Access to reliable climate change data, metrics and information will also be critical in supporting the financial sector to assess climate-related risks and mobilize private capital towards effective and efficient adaptation investments.

However, individuals, communities or businesses that are vulnerable to climate change impacts may also have more difficulty accessing the financial capital needed to fund adaptation actions. Like all adaptation measures, the right solutions to managing financial and economic risks will need to emphasize equity as well as resilience.

[2] Climate change risks to the financial sector include both *physical risks*, such as increasing extreme weather events and long-term gradual climate shifts, and *transitional risks*, which are related the financial risk of adjusting to a low-greenhouse gas emissions economy.

Promoting Sustainable Finance for a Resilient Canada

Meeting Canada's climate change adaptation objectives will require substantial investment beyond the public sector. Canada's financial sector has an important role to play in accelerating climate resilience in Canada. The Sustainable Finance Action Council as well as the Office of the Superintendent of Financial Institutions are leading two relevant initiatives.

Sustainable Finance Action Council

In May 2021, the Government of Canada launched the Sustainable Finance Action Council (SFAC) to help lead the Canadian financial sector towards integrating sustainable finance into standard industry practice.

The SFAC's Terms of Reference call for it to provide financial sector input on the development of foundational market infrastructure including enhancing climate-related financial disclosure, defining green and transition investment, and improving climate data and analytics. The Terms of Reference also ask the SFAC to develop and report on strategies for aligning private sector capital with the transition to net zero, with support from the Canadian Climate Institute and in collaboration with the Net-Zero Advisory Body.

The SFAC will make climate-related financial disclosure its first priority and it will provide advice on the most effective ways to implement the Government's commitment towards applying mandatory climate disclosures across a broad spectrum of the Canadian economy. This advice is to be prepared by the end of 2022 through a joint letter to the Minister of Finance and Minister of Environment and Climate Change.

Office of the Superintendent of Financial Institutions

Climate change also leads to physical risks for business. It damages assets, reduces productivity, and affects the health of workers. Disclosing risks like exposure to floods, extreme heat, or coastal erosion as part of regular financial disclosure is essential to helping investors make smart, stable decisions. To this end, the Office of the Superintendent on Financial Institutions (OSFI) has developed draft guidance to support federally-regulated financial institutions to develop greater resilience to, and management of, climate-related risks.

OSFI's draft guidance lays out liability risks, legal risks extending from financial institutions for failing to manage risks, time horizons over which risks are manifested, different expressions of financial risk (credit, market, insurance, liquidity risks as well as strategic, operational, and reputational risks), and even the potential existential risk to long-term viability of institutions. OSFI's guidance lists opportunities to build resilience to address vulnerabilities in business models, operations, and ultimately balance sheet through work that is holistic and built on empirical data.

These actions are working together to establish a well-functioning sustainable finance market that will give investors confidence in Canada, protect the resilience of the Canadian financial sector in the years ahead, and ensure Canada's broader long-term economic strength.

3.5.2 Critical Actions

Action 1: Climate Resilient Coastal and Northern Communities Program

Lead department:	Natural Resources Canada
Implements objective:	Economy and Workers 3
Also supports:	Cross Cutting 3; Cross Cutting 4

The Climate Resilient Coastal and Northern Communities Program will increase the resilience of communities in the North and along Canada's coasts by applying a new, systems-based approach to integrated, regional-scale projects. It will work with partners, rights-holders and stakeholders to undertake scientific research and co-develop adaptation measures that will make adaptation not only more effective, but also more affordable by aligning efforts and resources across jurisdictions. The program will also invest in critical science and work with communities and Indigenous Peoples to fill important, immediate knowledge gaps on the impacts of climate change on sea-level rise, coastal erosion, permafrost thaw and glaciers in northern and coastal areas. The program's innovative approach will lead to more efficient and more equitable responses.

Action 2: Using Scenario Analysis to Assess Climate Risk

Lead department:	Bank of Canada; Office of the Superintendent of Financial Institutions
Implements objective:	Economy and Workers 4

Climate change poses significant risks to the financial system and the economy. These include disruptions from more frequent and severe extreme weather events, as well as risks stemming from the transition to a low-carbon, net-zero economy.

The Bank of Canada and the Office of the Superintendent of Financial Institutions (OSFI) recently concluded a scenario analysis pilot project to assess the climate transition risks of six Canadian financial institutions. Moving forward, OSFI and the Bank of Canada will continue to advance this pilot collaboration by analyzing flood risk impacts on residential mortgage portfolios, and transition risk impacts on wholesale loan and securities portfolios. OSFI will also continue to enhance climate data and analytics capabilities, develop a standardized climate scenario analysis exercise for institutions, and assess the need to reflect the unique features of climate-related risks in the regulatory capital framework. This comprises an important aspect of how the Government of Canada is working to address physical climate risk within the financial sector.

Action 3: National Supply Chain Task Force

Lead department: Transport Canada
Implements objective: Economy and Workers 1

The National Supply Chain Task Force, launched by the Minister of Transport, was established to provide short- and long-term independent advice on potential action areas to address both chronic and acute supply chain congestion and inefficiency issues, including withstanding disruptions caused by climate change.

The Task Force released its final report on October 6, 2022. The report underscored the need to future-proof our supply chains and recommends that the federal government consider the impact of climate-related natural disasters on Canada's transportation supply chain, as it develops long-term action and infrastructure investment plans. The recommendations of the Task Force will help inform the development of a National Supply Chain Strategy, as highlighted in Budget 2022, which will include climate resiliency ambition.

Action 4: Climate Resilient Mining Program

Lead department: Natural Resources Canada
Implements objective: Economy and Workers 1
Also supports: Nature and Biodiversity 1

Extreme weather events and longer-term shifts in climate patterns have the potential to damage mining infrastructure and disrupt value chains vital to Canada's transition to net zero by 2050. Key risks include water management, increased likelihood for dam and water treatment failures, site drainage, mine closure/reclamation and mining infrastructure. The Climate Resilient Mining Program is conducting research to assess the long-term performance of cover strategies in a changing climate and assessing how metallurgical performance fluctuates with seasonal variations in recycled water quality. Researchers are also working with northern communities to fill important knowledge gaps on the impacts of dust generated from mining operations, which is increasingly being raised as a concern by communities, and where dust on snow has been shown to lead to earlier snowmelt.

Action 5: Rail Climate Change Adaptation Program

Lead department: Transport Canada
Implements objective: Economy and Workers 2

Canada's rail network and supply chains are facing complex risks due to climate change and extreme weather events. Transport Canada's Rail Climate Change Adaptation Program was established to help Canada's rail sector research, develop, and implement innovative technologies, tools and approaches to help mitigate these risks. This includes working with railway companies to cost-share research that identifies potential risks (e.g., flooding and wildfires) and effective mitigation solutions (e.g., flood monitoring systems, imaging technologies, etc.).

Action 6: Sectoral Workforce Solutions Program

Lead department: Employment and Social Development Canada
Implements objective: Economy and Workers 3

The Sectoral Workforce Solutions Program (SWSP) will help thousands of employers and connect Canadians with the training they need to access good jobs in sectors where employers are looking for skilled workers. It will support equity-deserving groups and has a policy priority area to build talent for the clean economy. As part of the Government's efforts to assist Canadian workers and communities in a just transition to a net-zero emissions and climate resilient economy,, SWSP supports workforce development needs in sectors that are directly or indirectly involved in protecting the environment, oceanic or aquatic ecosystems, managing natural resources and/or contributing to the low-carbon economy.

Action 7: Agricultural Climate Solutions – On-Farm Climate Action Fund

Lead department: Agriculture and Agri-food Canada
Implements objective: Economy and Workers 2

Agricultural Climate Solutions—On-Farm Climate Action Fund is a $200 million, 3-year fund (2021-2024) to support farmers in adopting beneficial management practices that store carbon, reduce greenhouse gases, and enhance climate resiliency in three areas: nitrogen management, cover cropping and rotational grazing practices.

Action 8: Agricultural Climate Solutions – Living Labs

Lead department: Agriculture and Agri-food Canada
Implements objective: Economy and Workers 3

Agricultural Climate Solutions—Living Labs is a $185 million, 10-year program that will establish a strong, Canada-wide network of living labs. Through these living labs, regional leaders will bring together farmers, scientists and other sector partners to co-develop, test and monitor beneficial management practices on working farms to reduce Canada's environmental footprint and enhance climate resiliency.

Action 9.1: Canadian Agricultural Partnership: Federal, provincial, territorial (FPT) cost-shared programs

Lead department:	Agriculture and Agri-food Canada
Implements objective:	Economy and Workers 3
Also supports:	Health and Wellbeing 4; Nature and Biodiversity 1; Nature and Biodiversity 2; Nature and Biodiversity 3; Nature and Biodiversity 4

Agriculture is a shared jurisdiction in Canada and Agriculture and Agri-food Canada (AAFC) has a long history of working with the provinces and territories to develop federal-provincial-territorial (FPT) agricultural policy frameworks, such as the Canadian Agricultural Partnership (2018-2023), to help producers and processors continuously improve the sustainability and resiliency of their operations. Under the Canadian Agricultural Partnership, AAFC provides an investment to support region-specific agricultural programs and services that are tailored to meet regional needs. These programs are cost shared among FPT governments, and are developed and delivered by provinces and territories. Up to $438 million in FPT cost-shared funding is available to support on-farm environment and climate change efforts, including the adoption of beneficial management practices that enhance climate resiliency.

Action 9.2: Canadian Agricultural Partnership: AAFC Science and Innovation programs

Lead department:	Agriculture and Agri-food Canada
Implements objective:	Economy and Workers 3
Also supports:	Nature and Biodiversity 3

Under the Canadian Agricultural Partnership, AAFC programs such as AgriScience ($338 million), AgriInnovate ($128 million) and AAFC-led Foundational Science ($224 million) contribute to, among other priorities, supporting the climate resiliency and sustainability of the sector through science, research and adoption of innovative practices and technologies.

Action 9.3: Canadian Agricultural Partnership: FPT Business Risk Management Programs

Lead department:	Agriculture and Agri-food Canada
Implements objective:	Economy and Workers 3
Also supports:	Disaster Resilience 2

Under the Canadian Agricultural Partnership, a suite of federal, provincial and territorial cost-shared Business Risk Management (BRM) programs will provide producers with critical protection against income and production losses, including losses from severe weather events (e.g., droughts, wildfires and floods). The suite of BRM programs is designed as a collaborative effort and includes AgriInsurance, AgriStability, and AgriInvest programs. Total funding averages approximately $1.5 billion per year. In addition to these programs, the AgriRecovery Framework is a disaster relief framework that helps agricultural producers recover from natural disasters. AgriRecovery is needs-based and funding requests can be initiated from emergency/disaster situations.

Spotlight on Success: Supporting On-Farm Actions under the Canadian Agricultural Partnership

Under the Canadian Agricultural Partnership, federal and provincial/territorial governments have supported cost-shared programming focused on the development of Environmental Farm Plans (or equivalent) and the delivery of incentive programs for the adoption of on-farm beneficial management practices (BMPs). As of March 31, 2021, a total of 10,263 BMP projects have been completed with 2,961 (29%) directly supporting elements of climate adaptation, including actions such as improved on-farm water supply and retention, more efficient irrigation equipment and management, and adopting soil health practices such as conservation and no-till seeding.

3.5.3 The Federal Role on Economy and Workers

Increasingly, climate change is driving demand for workers with the skills and understanding to help businesses and communities adapt. The federal government needs to do its share to anticipate and prepare for more frequent disruptions in supply chains, support climate-exposed industries and ensure that economic measures provide incentives for businesses and communities to adapt. The federal government needs to work closely with provinces and territories, Indigenous partners and other stakeholders, including the financial sector and financial regulators, to ensure that climate disruptions are minimized throughout the economy.

The economic impacts of climate change crosses sectors, disciplines and jurisdictional lines. Collaboration is required to respond to individual and shared climate change challenges. We need to improve our understanding of shared challenges to increase engagement and support better decisions by businesses, regulators and financial institutions and to align the interests of investors with the long-term benefits of becoming more climate resilient. We must also ensure that the communities and population groups affected by climate change impacts have a voice in building just and equitable financial incentives and measures to build resilience.

In general, the division of responsibilities for the economy, including in many climate-exposed sectors is a question of scale. In the natural resources sectors, for example, the Government of Canada supports **science** to understand how the changing climate may affect land management and investment decisions, **expert guidance and tools** to help assess the risks they face and the solutions available, and support to build the **skills and expertise** to make adaptation an on-going part of sustainable, competitive and inclusive development. The Government of Canada also supports key professions such as engineers, accountants, and natural resource managers identify what an adaptation specialist in these professions needs to know, and supports the development of training that leads to green jobs that address climate change adaptation.

Federal support for knowledge and expertise is often conducted in close collaboration with the provinces and territories, universities and other expert organizations helps to identify emerging issues. Other collaborative initiatives with provinces and territories are designed to identify, prioritize and pursue opportunities for economic growth and sustainable job creation recognizing the aspects of climate change that are unique to each region. For example, the Government of Canada convenes Regional Energy and Resource Roundtables which implement a place-based approach to climate and energy.

In the financial sector, the federal government is responsible for federal financial institutions, such as banks and credit unions, and the sustainability of the financial system. The Government of Canada also has the power to create financial and tax incentives to encourage businesses, communities and citizens to invest in their own resilience.

3.6 Knowledge and Understanding

Knowledge and Understanding Summary Table	
Federal departments and agencies leading actions	• Canadian Space Agency • Crown-Indigenous Relations and Northern Affairs Canada • Environment and Climate Change Canada • Fisheries and Oceans Canada • Natural Resources Canada
National Adaptation Strategy objectives	**Cross Cutting 1** A robust evidence base for adaptation is in place through development, stewarding and sharing of existing and new data, knowledge (including Indigenous knowledge and local knowledge), environmental and socio-economic analyses and other ways of knowing. **Cross Cutting 2** Everyone in Canada is informed about their climate risks and vulnerabilities. Available information is accessible, easy to understand and designed for different audiences.
Critical actions	**Action 1: Canada's National Assessment Process** assesses how and why Canada's climate is changing, the impacts of these changes on our communities, environment and economy and how we're adapting across the country. **Action 2:** The **Canadian Centre for Climate Services** provides Canadians with information on climate risks to inform decision-making and adaptation planning. **Action 3: Climate Science 2050** guides investments in climate change science and research to address priority science and knowledge gaps. **Action 4:** Conduct climate modelling and foundational **climate science-related activities to inform risk assessment and adaptation planning** to provide decision-makers with information and data on climate change and extreme weather. **Action 5: The Meteorological Service of Canada's work in response to hazards**, including extreme weather forecasting, early warning systems and information dissemination. **Action 6: Indigenous Community-based Climate Monitoring** supports Indigenous Peoples in the design, implementation or expansion of long-term community-based climate monitoring projects. **Action 7: Aquatic Climate Change Adaptation Services Program** informs evidence-based decision making in the area of aquatic climate science, including prioritizing fisheries and coastal infrastructure. **Action 8: Enhancing Sustainable Forest Management Practices Program** monitors and reports on the state of Canada's forests. **Action 9:** Advancing **Canada's Strategy for Satellite Earth Observation** supports climate science, modelling and services for Canadians. **Action 10: Expansion of foundational climate data, information, science and communications** to address priority climate data gaps that are impeding the capacity of Canadians to assess their vulnerability and risks from climate change.

3.6.1 Why Action is Needed Now

A strong evidence base, including both scientific knowledge and diverse ways of knowing, is the foundation for all climate change adaptation efforts. Supporting all Canadians so that they can make informed decisions to address climate change requires access to relevant and practical information and solutions for all sectors and communities. An understanding of current and future climate change, coupled with adaptation actions are critical for implementing and accelerating the ambitious action needed to build a climate resilient Canada now and for future generations.

First Nations, the Métis Nation and Inuit hold thousands of years of knowledge and experiences in stewarding and adapting to their environments—these communities actively observe, monitor and share changes in their communities and territories. Indigenous Knowledge systems are diverse, living value systems that need to be considered equally alongside other knowledge, including western science, when implementing adaptation solutions.

At the federal government level, Canada generates and supports world-class climate change science and research and is delivering broad national assessments, such as reports produced under the Canada in a Changing Climate series and expert panel reports, to help raise awareness and understanding of climate change and guide Canada's adaptation approaches. The federal government also supports a network of regional climate services organizations across the country to equip Canadians with relevant data, tools and information to incorporate projections of future climate into their decision making and business practices.

However, as governments, communities and businesses increasingly try to assess and understand climate change risks and adapt accordingly, more advanced and tailored climate change information and resources are needed. Sustained, iterative and inclusive climate change science and knowledge, and the translation of the science into useable data, information and tools, are critical to deepening our knowledge base of how the changing climate will impact Canada and how we can best adapt. The Government of Canada is implementing a number of actions to meet this challenge and to provide the foundational supports to build knowledge and resilience for addressing priorities across all sectors in all regions.

3.6.2 Critical Actions

Action 1: Canada's National Assessment Process (Canada in a Changing Climate Series)

Lead department: Natural Resources Canada
Implements objectives: Cross Cutting 1; Cross Cutting 2

The National Assessment Process provides critical information on Canada's changing climate to understand its causes, impacts and the actions needed to adapt across the country. By 2023, a series of authoritative, accessible, online reports will be released. *Canada's Changing Climate Report* focuses on how and why the climate is changing, while other reports focus on climate change impacts, adaptation and resilience. These reports confirm that climate change is causing deep and lasting impacts on our society, economy and environment, and conclude that urgent action is needed to increase Canada's resilience to climate change. They support Canadians, governments and stakeholders in understanding the climate change impacts they're facing and how they can make informed adaptation decisions.

Action 2: Canadian Centre for Climate Services

Lead department: Environment and Climate Change Canada
Implements objective: Cross Cutting 2

From 2017 to 2028, the federal government is investing $107.6 million in the Canadian Centre for Climate Services (CCCS) to ensure that Canadians have access to locally relevant expertise, advice and information needed for decision-making. The CCCS provides climate information and support so that Canadians and communities can make informed decisions on how to increase their resilience to climate risks. The service includes a collaborative climate information portal, ClimateData.ca, along with national maps of adaptation actions. Regional approaches are needed to address the unique needs of communities across the country, which is why the CCCS develops and coordinates a network of regional climate expert organizations. The CCCS and the regional organizations work together to provide joint services and to advance ClimateData.ca.

Action 3: Climate Science 2050

Lead department: Environment and Climate Change Canada
Implements objective: Cross Cutting 1

Climate Science 2050 (CS2050) Advancing Climate Change Science and Knowledge is a national synthesis of science and knowledge gaps undertaken to guide science and knowledge producers, holders and funders as they advance the collaborative and multi-disciplinary science needed to inform climate action. Environment and Climate Change Canada is leading the development of the first ***Climate Change Science and Knowledge Plan***, which identifies priorities for science investment in alignment with NAS objectives. Implementation of these science activities will better characterize climate risks, guide adaptation responses and identify new opportunities for building resilience. Science results will feed into the next reporting cycle of the report and subsequent science planning will align with NAS reporting cycles. Federal implementation of climate change science through CS2050 represents a key step in coordinating the federal and national scientific community to create a more resilient Canada. CS2050 encompasses the natural, social and health sciences to produce assessments of climate risk used to inform other assessments produced within the federal government, such as the NRCan-led national knowledge assessments. Further, it recognizes the need to mobilize the full spectrum of Indigenous leadership, participation and knowledge systems.

Action 4: Climate Science to Inform Risk Assessment and Adaptation Planning

Lead department: Environment and Climate Change Canada
Implements objective: Cross Cutting 1

Environment and Climate Change Canada's (ECCC) climate modelling provides decision makers with quantitative information to understand the impact of climate change and extremes on all regions of Canada. Climate models identify the role of human activity in driving climate change and contribute to the Intergovernmental Panel on Climate Change and Arctic Council Assessments. ECCC's scientific capacity in climate modelling has also developed robust multi-decadal climate data sets to support climate service delivery across the country. ECCC has created the Canadian Centre for Climate Services to leverage these data sets to develop and disseminate user-oriented climate data products to support adaptation actions. A website targeted to expert users provides open access to ECCC's foundational climate data and scenarios, complementing the roles and services provided by the Canadian Centre for Climate Services, regional climate service organizations and ECCC's world-class operational capability for forecasting weather and providing early warnings of hazardous weather events.

Action 5: The Meteorological Service of Canada's work in response to hazards

Lead department: Environment and Climate Change Canada
Implements objective: Cross Cutting 1

The Meteorological Service of Canada (MSC) is the authoritative source for information on weather, water quantity, ice, climate and air quality forecasting and warning services across Canada. This includes forecasting weather conditions that can lead to unprecedented weather events, such as dangerous and extreme heat and flooding.

The MSC's foundational capabilities in monitoring, high performance computing, modelling and prediction services directly support adaptation efforts by providing Canadians with life-saving data and information about weather and environmental conditions and hazards, over a range of time-scales. This information is vital for Canadians to prepare, respond and become more resilient to extreme weather resulting from a changing climate. Moving forward, investing in the MSC foundational capabilities, will provide earlier and more certain warnings of hazardous conditions and their impacts, including events in high-risk areas such as coastal environments that are vulnerable to storm surges as evidenced by the devastation caused by Hurricane Fiona in September 2022. In addition, the relationship with emergency management organisations and public health authorities will be strengthened to further support preparedness and response. Altogether, this will enhance adaptation efforts by providing Canadians and civil society critical information to prepare for and respond to extreme weather events and to become more resilient to the impacts of our changing climate.

On behalf of Canada's provinces and territories, the MSC operates approximately 2200 of the 2800 water monitoring stations on rivers and lakes across Canada and consolidates the water quantity data to provide an integrated view of the country's surface water resources. These foundational data contribute to national water management, including flood and drought prediction and management, flood plain mapping and water allocation. The MSC also

provides specialized services to model and predict the movement of wildfire smoke in the atmosphere.

The MSC also supports many mission-critical services of other federal departments and agencies as well as other national organizations. This includes the Department of National Defence and the Canadian Coast Guard on sovereignty, security and search and rescue missions; NAV CANADA for safe aviation operations; Health Canada and health officials for air quality alerts; and Public Safety Canada, provincial/territorial emergency managers and other public authorities when responding to weather and weather-related emergencies.

The MSC's Warning Preparedness Meteorology Program provides emergency managers and public authorities direct access to dedicated experts trained in providing fit-for-purpose information and insight to integrate in real-time decision-making in advance of, and during high-impact weather situations, including advice on actions that can be taken to mitigate impacts, save lives and reduce property damage.

Action 6: Indigenous Community-based Climate Monitoring

Lead department: Crown-Indigenous Relations and Northern Affairs Canada
Implements objective: Cross Cutting 1

The Indigenous Community-based Climate Monitoring program provides funding to support Indigenous Peoples in the design, implementation or expansion of long-term community-based climate monitoring projects. The projects track climate and environmental impacts on communities and traditional territories and can be used to inform Indigenous community adaptation actions and address climate data gaps. The program also facilitates access to tools and best practices for climate monitoring, supports local skill development and employment opportunities for youth, promotes knowledge transfer between generations and supports Indigenous participation in program oversight.

Action 7: Aquatic Climate Change Adaptation Services Program

Lead department: Fisheries and Oceans Canada
Implements objective: Cross Cutting 1

The Aquatic Climate Change Adaptation Services Program is an internal science-funding program within Fisheries and Oceans Canada that supports scientific research and monitoring activities that identify climate change impacts and vulnerabilities, improve ocean forecasting and develop adaptation information and tools for vulnerable coastal regions. The objectives of this program are to inform Fisheries and Oceans Canada's adaptation decisions related to fisheries, oceans management and coastal infrastructure.

Action 8: **Enhancing Sustainable Forest Management Practices Program**

Lead department: Natural Resources Canada
Implements objective: Cross Cutting 1

The Enhancing Sustainable Forest Management Practices Program carries out research that fills priority knowledge gaps about the dynamics of forest ecosystems which informs sustainable forest management in a changing climate.

Action 9: **Advancing Resourceful, Resilient, Ready: Canada's Strategy for Satellite Earth Observation**

Lead departments: Canadian Space Agency; Natural Resources Canada; Environment and Climate Change Canada
Implements objective: Cross Cutting 1

Satellite Earth observation uses satellites to gather information about the Earth's oceans, land, climate and populated areas. Satellite data are critical to taking action on and adapting to climate change by enabling applications and services in many areas that support the health and well-being of Canadians. These services include weather and flood warnings and forecasts, air quality monitoring and forecasting, wildfire monitoring, pollution detection and ice charting, warnings and forecasts. Satellite Earth observation also provides vital information to support climate science and modelling, like methane and carbon dioxide emissions, as well as changes to permafrost, sea ice and oceans. Published in 2022, the *Resourceful, Resilient, Ready: Canada's Strategy for Satellite Earth Observation* report outlines a strategic approach to guide Canada's actions and investments related to satellite Earth observation data, technology and partnerships over the next 15 years. This includes advancing new satellite missions and analytical environments to generate solutions for climate change mitigation and adaptation, particularly in Canada's North.

Action 10: Foundational Climate Data, Science and Services and Improved Development and Delivery of Predictions of Canada's Future Climate and Extreme Events

Lead department: Environment and Climate Change Canada
Implements objective: Cross Cutting 1

The Government of Canada will increase access to state-of-the-art climate information to enable governments, communities, businesses and individuals across the country to better assess their vulnerability and risks to climate change through improved regional and seasonal climate predictions and services. ECCC will deliver a new Canada-focused climate science assessment in mid-2025, providing authoritative synthesis of the latest knowledge and data regarding ongoing and future climate change in Canada. Such assessments, undertaken every five years, provide the scientific underpinning for national adaptation policy development and action.

3.6.3 The Federal Role on Knowledge and Understanding

The Government of Canada provides most of the essential infrastructure for climate research and long-term systematic observations programs in Canada. For example, Environment and Climate Change Canada is one of the only institutions in Canada, and one of just a handful in the world, with the scientific expertise and capacity to project and assess climate change impacts.

The Government is committed to advancing its scientific research through continued partnerships with the academic community, an important contributor to Canadian climate programming. Further, First Nations, Inuit and Métis knowledge systems play a key role in shaping our understanding of climate change impacts and solutions. The inclusion of Indigenous leadership and knowledge in climate action, while respecting sovereignty over and ownership of Indigenous knowledge and data, is critical to achieving the transformational change required to address the climate crisis.

The federal government also provides state-of-the-art climate data, services and assessments to understand risk and vulnerability to climate-related hazards which is essential in enabling all levels of government, stakeholders and communities to take effective adaptation action. The continued generation and dissemination of climate information and knowledge is foundational to informing better decision-making, developing targeted adaptation programs and services and advancing the goals and objectives of the NAS.

3.7 Tools and Resources

Tools and Resources Summary Table	
Federal departments and agencies leading action	• Crown-Indigenous Relations and Northern Affairs Canada • Environment and Climate Change Canada • Indigenous Services Canada
National Adaptation Strategy objectives	**Cross Cutting 3** Everyone in Canada has equitable access to the tools and supports needed for them to prepare for, reduce and respond to climate change impacts. **Cross Cutting 4** Sustained, sufficient and equitable public and private funding is in place to support adaptation to climate change. **Cross Cutting 5** Local, regional and institutional capacity for adaptation contributes to self-sufficiency and participation in adaptation actions.
Critical actions	**Action 1:** The **Climate Change Preparedness in the North** program provides funding enabling northern communities and organizations to address self-determined adaptation priorities while building local capacity. **Action 2:** The **First Nation Adapt** program provides funding to First Nation communities located below the 60th parallel to assess and respond to climate change impacts. **Action 3:** With funding and support from the federal government, the **Green Municipal Fund**, administered by the Federation of Canadian Municipalities, is expanding its project eligibility criteria to include local, community-level projects that enhance climate resilience.

3.7.1 Why Action is Needed Now

Communities are on the frontlines of climate change. As of 2022, over 640 municipalities across Canada have declared “states of emergency” in response to severe climate change impacts; these municipalities have committed to take action to protect Canadians. Local governments are increasingly building resilience to climate risks through adaptation plans and risk assessments, land-use planning and the building of resilient infrastructure.

While local adaptation action is increasing across the country, limited information, capacity and resources to assess risk and implement solutions is challenging the ability of communities to act. Those at higher risk of climate change impacts, including smaller, remote and northern communities and historically marginalized groups, require additional support to keep pace with increasing climate impacts.

The federal government is bridging the resource gap for communities of all sizes. Through the delivery of key funding and resources, the Government of Canada provides communities with the tools and resources necessary to lead local-level climate action by building their adaptive capacity and raising readiness for the implementation of long-term adaptation solutions.

3.7.2 Critical Actions

Action 1: Climate Change Preparedness in the North

Lead department:	Crown-Indigenous Relations and Northern Affairs Canada
Implements objective:	Cross Cutting 3
Also supports:	Cross Cutting 4; Cross Cutting 5

The Climate Change Preparedness in the North program provides northern communities and organizations with funding and services to build adaptation capacity and to implement adaptation measures that address self-determined priorities. The program works directly with local and regional/territorial applicants, providing long-term personalized application support to promote equal access to adaptation funding in the North.

This flexible program funds a range of adaptation projects, including vulnerability and risk assessments, hazard mapping, adaptation planning, the implementation of structural and non-structural adaptation measures (revising bylaws or procedures, retrofitting or upgrading at-risk infrastructure, built or natural), on-the-land or cultural initiatives, training and emergency preparedness.

Action 2: First Nation Adapt

Lead department:	Crown-Indigenous Relations and Northern Affairs Canada
Implements objective:	Cross Cutting 3
Also supports:	Cross Cutting 4; Cross Cutting 5

The First Nation Adapt program provides funding to First Nation communities located below the 60th parallel to assess and respond to climate change impacts on community infrastructure and disaster risk reduction.

The program works with First Nation communities to identify region-specific priorities, impacts and opportunities for climate change projects. It prioritizes First Nation communities that are most impacted by climate change related to sea level rise, flooding, forest fires, drought, fisheries and winter road failures. These disruptive and costly impacts present significant challenges to meeting First Nation communities' infrastructure needs.

Action 3: Advancing Municipal Adaptation Action through the Green Municipal Fund

Lead department:	Environment and Climate Change Canada
Implements objectives:	Cross Cutting 5;
Also supports:	Cross Cutting 3; Cross Cutting 4

To support a minimum of 1400 community-based climate adaptation initiatives by 2030-31, protecting Canadians and their communities, as well as minimizing costs associated with climate impacts, Environment and Climate Change Canada will collaborate with the Federation of Canadian Municipalities to expand and top-up the existing Green Municipal Fund (GMF). The new funding will support three broad areas of work under the GMF: adaptation planning, capacity building and institutional mainstreaming; accelerating local-level implementation of adaptation solutions; and piloting adaptation projects to attract greater private sector participation in adaptation financing.

3.8 Governance and Leadership

Governance and Leadership Summary Table	
Federal departments and agencies leading action	• Crown-Indigenous Relations and Northern Affairs Canada • Environment and Climate Change Canada • Treasury Board Secretariat
National Adaptation Strategy objectives	**Cross Cutting 6** Effective governance for climate change adaptation is established and is inclusive of people who are disproportionately impacted by climate change. **Cross Cutting 7** Indigenous Peoples are prepared for and have the capacity to respond to climate change through self-determined adaptation actions that are grounded in their cultures, preferences and community priorities. **Cross Cutting 8** Adaptation efforts improve social connections and reduce isolation in order to enhance overall community resilience to climate change. **Cross Cutting 9** Innovative solutions, through exchange of best practices and cross-jurisdictional cooperation, enhance adaptation outcomes across the country and position Canada as a global leader in supporting climate resilience.
Critical actions	**Action 1:** Advance **Indigenous Climate Leadership**, supporting co-development of roadmaps for self-determined action to adapt and build resilience to climate change impacts. **Action 2:** The Government of Canada's **Integrated Climate Lens** to ensure climate considerations is incorporated throughout Government decision-making. **Action 3:** Lead by example by **i**mplementing the **Greening Government Strategy** to ensure federal assets, programs and policies are climate resilient and operations are net-zero.

3.8.1 Why Action is Needed Now

The Government of Canada has a strong leadership and coordination role on issues of national interest, including climate change adaptation. Given the overlapping and differentiated roles of all partners and stakeholders, a federal response alone is insufficient to respond to the challenges presented by climate change. However, federal action remains a critical component for enabling and supporting actions from all partners and stakeholders to move the dial on establishing a more climate resilient Canada.

Canada's provinces and territories have authority over regional and local decision-making, natural resource management and community planning. Many are implementing stand-alone adaptation strategies or are integrating their planning and efforts into broader climate change action plans.

First Nations, the Métis Nation and Inuit are leaders in the fight against climate change. Indigenous Peoples have been living on, and acting as stewards of the lands that we call North America and Canada, since time immemorial. The depth of intergenerational knowledge, values and worldviews are foundational in understanding the living landscape and guiding climate action. The enduring connections to the land and culture held by many Indigenous Peoples and

communities are a source of strength and will help to foster adaptive capacity and resilience in the face of a changing climate.

We must recognize that no single order of government has all of the policy tools to take all actions necessary to adapt to climate change impacts. Without coherent policy guidance, along with corresponding objectives and targets to focus whole-of-society alignment, all levels of government will be increasingly exposed to climate-driven risks and impacts. Implementing solutions demands collaboration and communication among various actors, and mainstreaming adaptation across all orders of government. Therefore, an integrated approach that leverages and aligns concurrent efforts across departments, between partners and throughout the whole of society, will be vital to support the National Adaptation Strategy progress and to achieve climate change adaptation goals.

3.8.2 Critical Actions

Action 1: Indigenous Climate Leadership

Lead departments: Crown-Indigenous Relations and Northern Affairs Canada; Environment and Climate Change Canada
Implements objective: Cross Cutting 7

Indigenous climate leadership, through a strong nation-to-nation, Inuit-Crown and government to-government relationship, is a cornerstone of Canada's climate plans. The Government of Canada will continue to work with First Nations, Inuit and Métis representatives and rights-holders to develop and implement a model of partnership for climate action. This new initiative will set long-term objectives for the Crown-Indigenous partnership on climate change and promote Indigenous Peoples' strengthened and meaningful participation in climate governance and policy; identify delivery models/roadmaps to build Indigenous capacity and mechanisms towards Indigenous-led and delivered climate programming; and support the implementation of climate priorities that set foundations towards self-determined climate action.

Action 2: Integrated Climate Lens

Lead department: Environment and Climate Change Canada
Implements objective: Cross Cutting 9

Recognizing that the path to net-zero and climate resilience will involve economic and social considerations, the Government of Canada is implementing an Integrated Climate Lens (ICL) to help ensure government decisions and investments account for climate change risks and adaptation considerations. The ICL is an analytical process that provides a rigorous and consistent method to assess both the climate change adaptation and mitigation implications of government policies, programs and initiatives as well as a means to assess economic, social and inclusivity factors. The ICL will help to ensure that federal decision-making is aligned to national adaptation objectives.

Action 3: Greening Government Strategy

Lead department: Treasury Board Secretariat
Implements objective: Cross Cutting 9

The federal government is leading by example through the implementation of the Greening Government Strategy to help transition Government of Canada operations to be net-zero and climate-resilient. Through the Strategy, federal departments must regularly assess, and take action to reduce climate risks to federal assets, services and operations, apply climate-resilient building design and increase adaptation training and support for public service employees. In addition, departments with real property (either owned or leased) must develop portfolio plans in order to achieve climate-resilient real property operations by 2050.

3.8.3 The Federal Role on Governance and Leadership

The Government of Canada plays a key leadership role to help ensure adaptation actions across the country are coordinated, effective and efficient. This includes convening governments and organizations to align our collective efforts, mainstreaming adaptation into everyday government operations and decision-making and providing a sound scientific foundation to support action. While these factors help lay a foundation for action, complementary action from other actors in areas outside federal jurisdiction are necessary, such as land-use planning to account for climate change risks, sustainable natural resource management and climate-resilient healthcare, are also necessary to create transformational change. The federal government is working closely with partners through established governance structures to help align our collective efforts (see Annex 2).

To support Indigenous Peoples' advancement of climate priorities and adaptation to the changing climate, the Government of Canada is committed to renewed nation-to-nation, Inuit-to-Crown and government-to-government relationships with First Nations, the Métis Nation and Inuit peoples, based on the recognition of rights, respect, cooperation and partnership.

The Government of Canada is committed to advancing reconciliation with Indigenous Peoples by supporting self-determined climate action. Through the development of the Indigenous Climate Leadership Agenda, the federal government will set an agenda for climate action and framework for collaboration with Indigenous partners. Recognizing Indigenous climate leadership means investing in the agency of Indigenous Peoples and communities, supporting Indigenous-led and delivered solutions, equipping Indigenous Peoples with equitable resources and ensuring appropriate access to funding to implement self-determined climate action is key.

The Government of Canada is also committed to mainstream and build resilience into its own operations. In response to the *Commissioner of the Environment and Sustainable Development's 2017 Report*, and in accordance with the Greening Government Strategy and the *Federal Sustainable Development Strategy*, departments and agencies have committed to address climate risks to federal assets, services and operations. These mainstreaming operations will have broad and far-reaching implications across the federal government and ensure that climate change adaptation and response is reflected in all departmental portfolios.

4 Looking Forward

This document is the first iteration of the Government of Canada Adaptation Action Plan. The actions outlined within this plan are all current, which means they have both mandate and funding. The performance of actions will be reported in annual public reporting in accordance with Treasury Board Secretariat *Policy on Results* and *Directive on Results* to ensure adaptation progress is transparent and accountable to Canadians.

To ensure adaptation targets and objectives are guiding federal investments, the programs and actions within this plan will be monitored and results will be measured using metrics and indicators aligned to the National Adaptation Strategy's monitoring and evaluation framework. . This will support a continuous learning process, helping to identify what is working and where more targeted efforts are needed. This will in turn support evidence-based decision-making to improve federal programs and services on adaptation.

Successful implementation of the Action Plan also requires coordination across many federal departments and agencies. Strong governance mechanisms will increase program coherence and ensure clear accountability in making progress. Environment and Climate Change Canada leads interdepartmental governance structures that will oversee the implementation of the Action Plan and ensure adaptation actions at the federal level are integrated, efficient, and effective at driving positive results.

Adaptation planning involves a flexible approach that can accommodate change but keep us moving in the right direction. Moving forward, this action plan represents the first step in a long-term and iterative process. As climate change impacts continue to accelerate, additional actions will be needed to build resilience to new and evolving climate risks and support all people living within Canada in implementing sustained adaptation solutions. Over time, decisions will be made on whether new actions are required and when, and will be informed by both evolving risks and results of earlier actions.

In the near term, some key areas for future action include:

1. Mandate commitments **to implement a strengthened Freshwater Action Plan,** including a historic investment to provide funding to protect and restore lakes and river systems, **and establish a Canada Water Agency,** to work together with the provinces, territories, Indigenous communities, local authorities, scientists and others to find the best ways to keep our water safe, clean and well-managed in a changing climate**.** In addition, following the establishment of the Canada Water Agency, advance the **modernization of the Canada Water Act** to reflect Canada's freshwater reality, including climate change and Indigenous rights.
2. **Advancing mandatory climate-related financial disclosures** to require that federally regulated institutions, including financial institutions, pension funds and government agencies, to issue climate-related financial disclosures and net-zero plans. Financial institutions will be required to publish climate disclosures, including climate-related risks, starting in 2024.

3. **Investing in the Meteorological Service of Canada** to upgrade infrastructure, including information technology, to ensure it continues to effectively perform its vital functions of monitoring changes in the weather, climate, water, ice and air quality and predicting weather and environmental conditions. This information is a necessary precursor to inform local, regional and national adaptation planning.
4. **Development of the Canada Green Buildings Strategy** with provinces and territories, communities and Indigenous Peoples, to achieve a net-zero emissions and climate-resilient buildings sector by 2050. Efforts will be complemented by initiatives to help Canadians improve energy efficiency and resiliency: Creating a Climate Adaptation Home Rating Program as a companion to the EnerGuide home energy audits to protect homeowners from the impacts of climate change, and continue to develop new research, guidelines, and tools to inform climate resilience in building codes and standards.
5. **Develop a Sustainable Agri-Environmental Strategy and implement the new Sustainable Canadian Agricultural Partnership (2023-2028),** including the Resilient Agriculture Landscape Program, to continue to support the sustainable economic growth of the agriculture and agri-food sector, ensuring climate action and resilience are core to the framework.
6. **Modernizing the *Oceans Act* to explicitly consider climate change** impacts on marine ecosystems and species in regional ocean management, and explore the creation of a national, interdisciplinary working group focused on climate-resilient ocean conservation planning.

Annex 1: Federal Roles and Responsibilities on Adaptation

The following table outlines the roles and responsibilities of federal departments and agencies on climate change adaptation, including within discrete areas directly and indirectly related to the National Adaptation Strategy (NAS).

Department or Agency	Role and Responsibility on Adaptation
Environment and Climate Change Canada (ECCC)	ECCC is the federal lead for climate change adaptation and mitigation. It leads federal adaptation policy development, including the National Adaptation Strategy. ECCC also provides federal adaptation leadership by providing guidance and tools to support departmental adaptation planning, and is implementing a federal climate lens to build adaptation and mitigation into federal decision making. ECCC plays an authoritative role in the development and dissemination of foundational climate change data, science, information, and services to Canadians. ECCC will provide federal leadership for the implementation of the Climate Science 2050 Plan. ECCC leads horizontal governance on climate change adaptation to ensure adaptation governance and coordination is enhanced across departments and agencies to ensure federal efforts are aligned. ECCC will manage a one-window approach to adaptation, working with federal partners, to coordinate adaptation and resilience requests from other levels of government, the private sector, Indigenous organizations and civil society. ECCC will also lead an umbrella web presence across the Government of Canada to coordinate adaptation resources for the public. ECCC collaborates with provincial and territorial counterpart Ministers for climate change adaptation under the Canadian Council of Ministers of the Environment and co-chair of the Climate Change Committee and chair of the Adaptation Policy Committee. ECCC will be the lead interlocutor with provincial and territorial counterparts on adaptation, and other levels of government (i.e., municipalities) on adaptation, and working with other departments. This will ensure that adaptation action across governments and engagement remains coordinated and partners have a clear window for support.
Agriculture and Agri-food Canada (AAFC)	AAFC supports the Canadian agriculture and agri-food sector through initiatives that promote innovation and competitiveness. AAFC supports climate change adaptation by leading on policy solutions and supporting farmers in developing and implementing farming practices to tackle climate change. AAFC plays a key role in increasing the resilience of Canadian agricultural practices in the face of increasing climate impacts, such as floods and wildfires, which affect our food systems. Agriculture is an area of shared jurisdiction between the federal and provincial/territorial governments, with the provinces and territories having primary jurisdiction over land and natural resource ownership and use. AAFC collaborates with provinces and territories through five-year, federal-provincial-territorial (FPT) agricultural policy frameworks to support agriculture sector stakeholders in the responsible stewardship of Canada's agricultural lands and environment.

Canadian Institutes of Health Research (CIHR)	CIHR responds to the evolving needs for health research and seeks to transform health research in Canada by: • funding both investigator-initiated research as well as research on targeted priority areas • building research capacity in under-developed areas and training the next generation of health researchers • focusing on knowledge translation that facilitates the application of the results of research and their transformation into new policies, practices, procedures, products and services
Canadian Food Inspection Agency (CFIA)	CFIA has a mandate to safeguard Canada's food supply to enhance the health and well-being of Canada's people and protect Canada's plant and animal resources from pests, invasive species and diseases, while facilitating the international trade of food, plants, animals and related products. CFIA recognizes the impact climate change has on every aspect of its mandate and activities, and its significance to Canada's plant and animal resource base as well to changes in the presence of related diseases and pests. With industry, academia, consumers, federal partners and provincial, territorial and municipal governments, CFIA works to protect Canadians from preventable health risks related to food and zoonotic diseases that affect animals and humans.
Canadian Mortgage and Housing Corporation (CMHC)	CMHC supports the stability of the housing finance system and works to ensure everyone in Canada has an affordable home that meets their needs, which includes building climate resilience through housing. CMHC is prioritizing work that incentivizes and supports climate change mitigation and adaptation in the housing system and is working to ensure this transition is affordable and sustainable for individuals and housing partners.
Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)	CIRNAC is leading efforts to build upon nation-to-nation relationships between the Government of Canada and Indigenous Peoples through the co-development of the Indigenous Climate Leadership Agenda. CIRNAC supports climate change monitoring, risk assessments and adaptation planning across Indigenous and northern communities, and the implementation of adaptation actions in the North; it is responsible for leading the Government of Canada's work in the North.
Department of Defence (DND) & Canadian Armed Forces (CAF)	DND supports the Canadian Armed Forces (CAF) who serve on sea, land, and in the air with the Navy, Army, Air Force and Special Forces to defend Canadians' interests at home and abroad. As the frequency and severity of climate-related events increase, and the economic and human costs of response and recovery increase, DND/CAF will continue to play an important role in effective policy and program leadership to embed adaptation principles into emergency management strategies alongside other key federal departments. As the force of last resort, upon the request from civilian authorities, the CAF can provide emergency assistance in the wake of climate-related disasters. To fulfill this role, the CAF will adapt to evolving conditions to ensure that it maintains force readiness in the face of a changing climate. As one of the largest real property custodians in the country, DND is adapting its infrastructure in preparation for the impacts of climate change. Given the demand on the CAF for both domestic and international deployments, DND cannot afford to have its critical infrastructure (i.e., runways, training areas, jetties) vulnerable to climate events. As such,

	DND is undertaking climate change vulnerability and risk assessments of its real property holdings to identify and prioritize investments. Also, as of 2021, new infrastructure and major retrofits must incorporate both net zero and climate resilience principles in design and construction.
Employment and Social Development Canada (ESDC)	ESDC has a suite of programming that supports work on climate change adaptation by addressing the direct and indirect effects of climate change on jobs, sectors, and occupations. For example, ESDC is investing approximately $3 billion annually to Labour Market Transfer Agreements for individuals and employers to obtain skills training and employment supports. ESDC's Sectoral Workforce Solutions Program (SWSP) will help thousands of employers and connect Canadians with the training they need to access good jobs in sectors where employers are looking for skilled workers. It will support equity-deserving groups and has a policy priority area to build talent for the clean economy.
Finance Canada	Finance Canada supports the Minister of Finance's responsibilities for the stewardship of the Canadian economy, including advising on federal fiscal, tax, and financial sector and transfer policies. Finance Canada, in collaboration with Environment and Climate Change Canada, is responsible for federal sustainable finance policy which aims to support the mobilization of capital to help meet Canada's climate mitigation, adaptation and broader sustainability objectives. The policy focus is to develop the foundational market infrastructure needed to scale up Canada's sustainable finance market. This includes enhancing the disclosure of climate-related financial risks, defining green and transition investments, and improving climate data and analytics. The Government of Canada established the Sustainable Finance Action Council (SFAC) in May 2021 to provide advice on these foundational matters noted above as well as net-zero capital allocation strategies. The SFAC comprises twenty-five Canadian deposit-taking institutions, insurance companies, and pension funds and reports to the Ministers of Finance and Environment and Climate Change. The Minister of Finance is responsible for the Bank of Canada, which monitors climate risks that could pose a threat to Canada's financial stability, as well as the Office of the Superintendent of Financial Institutions (OSFI), which is focused on ensuring that federally regulated financial institutions have the systems to effectively manage climate risks.
Fisheries and Oceans Canada (DFO)	DFO is responsible for sustainably managing Canada's fisheries, protecting our oceans, safeguarding our waterways and working with coastal communities. DFO is responsible for the protection, enhancement and restoration of the biodiversity and health of Canada's marine and freshwater environments, including the protection and restoration of aquatic ecosystems. DFO leads efforts to enhance effective action on climate change relating to oceans and fisheries. This includes conducting scientific research and monitoring activities of ecosystems to inform the management of fisheries, oceans and coastal infrastructure management, species conservation and marine safety. DFO works with partners to preserve and protect freshwater environments, including aquatic ecosystems, from the impacts of climate change.

	DFO provides foundational climate science related to adaptation in support of Climate Science 2050 implementation and the delivery of its mandate.
Health Canada (HC)	HC's mandate supports climate change adaptation through the development and provision of research, information, and services to better understand and prepare for the health risks of climate change. HC delivers adaptation programs that address climate-related health issues, including heat-related illness, air quality, and food safety (the latter delivered in collaboration with the Canadian Food Inspection Agency). As the lead for the Health and Wellbeing system under the National Adaptation Strategy, and climate change adaptation lead for the Federal Health Portfolio, Health Canada works to coordinate and advance adaptation action across Canada. Health Canada fills evidence gaps, develop guidance and tools, coordinate efforts to measure progress, enables the sharing of data, information and best practices and provides national leadership to guide health sector adaptation.
Infrastructure Canada (INFC)	INFC leads the delivery of planning and capital investment support for resilient infrastructure. INFC also builds partnerships, develops policies and fosters knowledge about public infrastructure in Canada. INFC manages works with the Standards Council of Canada and National Research Council to develop climate-resilient codes and standards for buildings and infrastructure to enable infrastructure decision-makers to integrate climate change considerations. As the lead for the Resilient Infrastructure system under the NAS, and the adaptation lead for the federal infrastructure portfolio, INFC continues to play a leadership role moving forward, bolstering this role by coordinating, aligning and expanding programming to ensure that infrastructure is climate-resilient.
Indigenous Services Canada	ISC works collaboratively with partners to improve access to quality services for First Nations and Inuit peoples, including through enhancing resiliency of infrastructure and services to the impacts of climate change. ISC will continue to support and empower First Nations and Inuit peoples in controlling the delivery of high-quality services for healthy, prosperous and thriving communities, including in climate change, emergency management, resilient infrastructure, lands and environmental management, and health.
Natural Resources Canada (NRCan)	NRCan supports the sustainable, equitable and competitive development of natural resources and the communities that depend on the natural resources sectors. The department leads in areas of science necessary to improve understanding in how changes in the climate impact terrestrial systems, including groundwater, erosion and deposition, permafrost changes, coastal dynamics, forest ecosystems and timber supply. NRCan has more than 20 years of experience leading adaptation programs that help businesses, communities and professionals understand, assess and develop solutions to the climate change impacts they face. NRCan programs have played a key role in identifying emerging climate issues. NRCan has led the impacts and adaptation knowledge assessment process since the early 2000s, working with other lead departments to produce the assessment series.

	NRCan programming supports climate change adaptation in key areas, including foundational knowledge and capacity building, forest resilience, resilient housing and geoscience and geospatial data, including hazard mapping. NRCan has led Canada's Adaptation Platform, in partnership with ECCC since 2020, providing a forum for dialogue, exchange and cooperative work with provinces, territories, National Indigenous Organizations, professional associations and others. Going forward, NRCan will continue to play a strong role in climate change adaptation for industry, businesses and communities and lead the Economy and Workers system under the NAS. This leadership could be bolstered by expanding upon NRCan's unique role in leading economic adaptive efforts.
Parks Canada (PC)	PC is responsible for protecting and presenting national significant examples of Canada's natural and cultural heritage for present and future generations. PC maintains a key role in in leading the implementation of adaptation solutions in Canada's network of protected areas. PC programming aims to provide natural solutions for climate change by conserving biodiversity, protecting ecosystem services, connecting landscapes (e.g., National Ecological Corridors Program), capturing and storing carbon and building knowledge. This contributes to the development of a thriving natural environment that is resilient to the effects of climate change.
Public Health Agency of Canada (PHAC)	PHAC's core functions include preventing and controlling the spread of infectious diseases, responding to public health emergencies, promoting health and conducting monitoring and population health assessments. The Agency's mandate also includes leading in the sharing, receiving and implementation of research developed in Canada and internationally and strengthening intergovernmental collaboration on public health.
Public Safety Canada (PS)	PS exercises leadership for national security and emergency preparedness. The Emergency Management Strategy for Canada, which was developed and released jointly by provincial, territorial and federal government in 2019, lays out key priorities for action in support of climate resilience from a disaster risk reduction (DRR) perspective: • Improved understanding of disaster risks in all sectors of society • Increased focus on disaster prevention and mitigation • Enhanced disaster response capacity and coordination, and development of new capabilities • Strengthened recovery efforts to build back better PS will continue to play a key role in the implementation of the NAS, further integrating adaptation principles into emergency management, preparedness and disaster resilience efforts.
Transport Canada (TC)	TC advances programs, policies, and updated laws and regulations that support its mandate to promote a transportation system in Canada that is safe, secure, efficient and environmentally responsible, including collaborating with transportation stakeholders to support climate adaptation efforts and increased resilience throughout the sector. Under its core responsibility for a Green and Innovative Transportation System, a climate resilient transportation system is a central objective.

Treasury Board Secretariat (TBS)	TBS provides advice and makes recommendations to the Treasury Board committee of ministers on how the Government spends money on programs and services. TBS leads the implementation of the Greening Government Strategy, which is the policy instrument that commits government departments to take action on adaptation and mainstream climate adaptation across government. In this pursuit, TBS continues to focus efforts on ensuring the Government of Canada will transition to net-zero carbon and climate-resilient operations, and supporting program development to meet this goal. TBS also provides federal adaptation leadership by providing guidance and to support real property climate risk assessments and adaptation planning.

Annex 2: Bilateral Cooperation with Partners

Climate change risks are far reaching, varying from region to region, making adaptation an area of common interest across federal, provincial and territorial jurisdictions, as well as Indigenous governments. The complex inter-jurisdictional considerations and horizontal nature of adaptation means that clear leadership, and coordinated and aligned action by all orders of governments, is fundamental to realizing a climate resilient Canada.

Federal, Provincial and Territorial

As provinces and territories have jurisdiction over many areas critical for climate change resilience (e.g., land-use planning, building regulations, natural resource management, health care systems, infrastructure, emergency management), they are essential partners in adaptation efforts. In recognition of the need for coordinated action, adaptation governance tables comprised of federal-provincial-territorial (FPT) representatives have been established.

The primary mechanism for FPT cooperation is the Canadian Council of Ministers of the Environment (CCME). The CCME is a minister-led intergovernmental forum for collective action on environmental issues of national concern, including adaptation and resilience. It aims to facilitate inter-jurisdictional cooperation on climate change mitigation and adaptation, including collaborate action to implementing the Pan-Canadian Framework on Clean Growth and Climate Change.

Beyond the CCME, there are a number of other FPT fora considering climate change in their discussions, including the Canadian Council of Resource Ministers, Canadian Council of Forest Ministers, Canadian Council of Fisheries and Aquaculture Ministers and Canadian Council of Ministers Responsible for Transportation and Highway Safety.

Indigenous Governments and Organizations

Indigenous Peoples, particularly in northern communities, are experiencing disproportionate impacts of climate change. Across Canada, Indigenous Peoples are active drivers of change, contributing vital knowledge, experience, innovation and leadership on adaptation. They have voiced a need and desire for increased agency, self-determination and leadership over climate action, emphasizing that it should be built on the principles of partnership and the recognition of Indigenous governance, rights and leadership.

The federal government has a nation-to-nation relationship with Indigenous Peoples and has direct responsibility for delivering services to First Nations on reserve. Typically, Canada engages with Indigenous organizations and governments, including on the development of the NAS, through three distinctions-based, senior-level tables with the Assembly of First Nations, Metis National Council and Inuit Tapiriit Kanatami.

Annex 3: Government of Canada Adaptation Action Plan Table

The following table provides an overview of all actions within this plan and relevant NAS objective(s) that it supports, the primary audience that is intended to benefit from the action and climate risk(s) that it directly addresses.

GOVERNMENT OF CANADA ADAPTATION ACTION PLAN TABLE						
NAS System	**Federal Action**	**Lead Department/Agency**	**Status**	**NAS Objective(s)**	**Audience**	**Climate Risk**
Disaster Resilience	National Risk Profile	Public Safety Canada	Existing	Disaster Resilience 4	All Canadians	Flooding; Fire events; Extreme weather events
Disaster Resilience	National Public Alerting System	Public Safety Canada	Existing	Disaster Resilience 1; Disaster Resilience 3	All Canadians; Provincial governments; Territorial governments	Flooding; Fire events; Extreme weather events
Disaster Resilience	Emergency Management Public Awareness Contribution Program	Public Safety Canada	Existing	Disaster Resilience 1; Disaster Resilience 4	Not-for-profit organizations; Indigenous communities and organizations; Academic institutions	Extreme weather events; Flooding; Fire events; Extreme heat events
Disaster Resilience	Emergency Preparedness Week	Public Safety Canada	Existing	Disaster Resilience 4	All Canadians; Provincial governments; Territorial governments; Not-for-profit organizations; Indigenous communities and organizations; Private sector	Extreme weather events; Flooding; Fire events; Extreme heat events
Disaster Resilience	Federal Emergency Response Plan	Public Safety Canada	Existing	Disaster Resilience 2	Federal government	Extreme weather events; Flooding; Fire events; Extreme heat events
Disaster Resilience	Wildfire Risk Management Program	Natural Resources Canada	Existing	Disaster Resilience 1; Disaster Resilience 2	Provincial governments; Territorial governments; Municipal governments	Fire events
Disaster Resilience	2021-22 FPT Emergency Management Strategy Interim Plan	Public Safety Canada	Existing	Disaster Resilience 2	Provincial governments; Territorial governments	All climate risks
Disaster Resilience	Heavy Urban Search and Rescue (HUSAR) Program	Public Safety Canada	Existing	Disaster Resilience 3	Provincial governments; Municipal governments	Extreme weather events; Flooding; Fire events
Disaster Resilience	Humanitarian workforce	Public Safety Canada	Existing	Disaster Resilience 3; Disaster Resilience 2; Disaster Resilience 5	Not-for-profit organizations	Flooding; Fire events
Disaster Resilience	Parks Canada Wildfire Management Program	Parks Canada Agency	Existing	Disaster Resilience 1	Federal government; Communities	Fire events
Disaster Resilience	Wildfire Resilient Futures Initiative	Natural Resources Canada	New investment	Disaster Resilience 1; Disaster Resilience 4	Communities; Natural resource managers	Fire events

GOVERNMENT OF CANADA ADAPTATION ACTION PLAN TABLE						
NAS System	**Federal Action**	**Lead Department/Agency**	**Status**	**NAS Objective(s)**	**Audience**	**Climate Risk**
Disaster Resilience	Flood Insurance and Relocation	Public Safety Canada	Existing	Disaster Resilience 1; Disaster Resilience 2; Disaster Resilience 4; Disaster Resilience 5	Provincial governments; Territorial governments; Private sector	Flooding
Disaster Resilience	Statistics Canada data on emergency preparedness, response and disasters	Statistics Canada	Existing	Disaster Resilience 4	All Canadians	Extreme weather events; Flooding; Fire events; Extreme heat events
Disaster Resilience	Canadian Disaster Database	Public Safety Canada	Existing	Disaster Resilience 4	All Canadians	Extreme weather events; Flooding; Fire events; Extreme heat events
Disaster Resilience	Geoscience supporting public safety and climate change resilience	Natural Resources Canada	Existing	Disaster Resilience 4	Provincial governments; Territorial governments; Indigenous communities and organizations	Flooding; Erosion; Permafrost thaw and degradation; Changing snow, glacier and ice conditions; Sea level
Disaster Resilience	National Fire Information Database	Statistics Canada	Existing	Disaster Resilience 4; Disaster Resilience 1	Communities	Fire events
Disaster Resilience	Federal Flood Mapping Guideline Series	Natural Resources Canada	Existing	Disaster Resilience 1; Disaster Resilience 2; Disaster Resilience 4	Provincial governments; Territorial governments	Flooding
Disaster Resilience	Emergency Geomatics Services	Natural Resources Canada	Existing	Disaster Resilience 1; Disaster Resilience 4	Provincial governments; Territorial governments	Flooding
Disaster Resilience	Enhanced mandate for the Canadian Interagency Forest Fire Centre	Natural Resources Canada	Existing	Disaster Resilience 3	Provincial governments; Territorial governments	Fire events
Disaster Resilience	WildfireSat	Natural Resources Canada	Existing	Disaster Resilience 3	All Canadians; Provincial governments; Territorial governments	Fire events
Disaster Resilience	Advancing the Flood Hazard Identification and Mapping Program	Natural Resources Canada	Existing with new investment	Disaster Resilience 1; Disaster Resilience 4	Provincial governments; Territorial governments	Flooding
Disaster Resilience	Disaster Financial Assistance Arrangements	Public Safety Canada	Existing	Disaster Resilience 5	Provincial governments; Territorial governments	Extreme weather events; Flooding; Fire events
Disaster Resilience	AgriRecovery Framework	Agriculture and Agri-food Canada	Existing	Disaster Resilience 2; Economy and Workers 3	Provincial governments; Territorial governments; Agricultural producers	Drought; Flooding; Fire events; Extreme weather events
Disaster Resilience	Government Operations Centre Request for Federal Assistance	Public Safety Canada	Existing	Disaster Resilience 2; Disaster Resilience 3	Federal government	Extreme weather events; Flooding; Fire events
Disaster Resilience	Emergency Management Assistance Program	Indigenous Services Canada	Existing	Disaster Resilience 1; Disaster Resilience 5	Indigenous communities and organizations	Extreme weather events; Flooding; Fire events

GOVERNMENT OF CANADA ADAPTATION ACTION PLAN TABLE						
NAS System	**Federal Action**	**Lead Department/Agency**	**Status**	**NAS Objective(s)**	**Audience**	**Climate Risk**
Disaster Resilience	Federal Investments in Wildfire Management (response and operations)	Natural Resources Canada	Existing	Disaster Resilience 2; Disaster Resilience 3; Disaster Resilience 4	Provincial governments; Territorial governments; Indigenous communities and organizations	Fire events
Health and Wellbeing	Protecting Canadians from Extreme Heat / Protecting Canadians from Extreme Heat - Expanded Program	Health Canada	Existing with new investment	Health and Wellbeing 3	All Canadians; Provincial governments; Territorial governments, Local and regional health authorities, municipal governments, Non-governmental organizations, Indigenous communities and organizations, and all Canadians	Extreme heat events
Health and Wellbeing	HealthADAPT / Expanded HealthADAPT	Health Canada	Existing with new investment	Health and Wellbeing 1; Health and Wellbeing 2; Health and Wellbeing 4	All Canadians; Provincial governments; Territorial governments, Local and regional health authorities, municipal governments, Non-governmental organizations, Indigenous communities and organizations, and all Canadians	All climate risks
Health and Wellbeing	Climate Change and Health Adaptation Program for First Nation and Inuit Communities	Indigenous Services Canada	Existing	Health and Wellbeing 1; Health and Wellbeing 3	Indigenous communities and organizations; Not-for-profit organizations	Extreme weather events; Food security; Changing freshwater, ocean and marine conditions
Health and Wellbeing	Climate Change Research and Knowledge Mobilization Initiative	Canadian Institutes of Health Research	Existing	Health and Wellbeing 1	All Canadians; Academic institutions	All climate risks
Health and Wellbeing	Infectious Disease and Climate Change Program	Public Health Agency of Canada	Existing	Health and Wellbeing 1; Health and Wellbeing 3	Provincial governments; Territorial governments; Municipal governments; Indigenous communities and organizations; Not-for-profit organizations	Infectious disease
Nature and Biodiversity	Natural Climate Solutions Fund	Environment and Climate Change Canada	Existing	Nature and Biodiversity 3	Provincial governments; Territorial governments; Municipal governments; Indigenous communities and organizations; Not-for-profit organizations; Private sector	Habitat and species
Nature and Biodiversity	2 Billion Trees	Natural Resources Canada	Existing	Nature and Biodiversity 3	Provincial governments; Territorial governments; Municipal governments; Indigenous communities and organizations; Not-for-profit organizations; Private sector	Habitat and species; Changing freshwater, ocean and marine conditions; Extreme heat events

GOVERNMENT OF CANADA ADAPTATION ACTION PLAN TABLE						
NAS System	**Federal Action**	**Lead Department/Agency**	**Status**	**NAS Objective(s)**	**Audience**	**Climate Risk**
Nature and Biodiversity	Nature Smart Climate Solutions Fund	Environment and Climate Change Canada	Existing	Nature and Biodiversity 4	Provincial governments; Territorial governments; Municipal governments; Indigenous communities and organizations; Not-for-profit organizations; Private sector; Academic institutions	Habitat and species; Changing freshwater, ocean and marine conditions
Nature and Biodiversity	Marine Protected Areas Program	Fisheries and Oceans Canada	Existing	Nature and Biodiversity 4	Provincial governments; Territorial governments; Indigenous communities and organizations; Not-for-profit organizations; Private sector	Habitat and species; Changing freshwater, ocean and marine conditions
Nature and Biodiversity	Canada's Enhanced Nature Legacy Program	Environment and Climate Change Canada	Existing	Nature and Biodiversity 4	Provincial governments; Territorial governments; Municipal governments; Indigenous communities and organizations; Not-for-profit organizations; Private sector	Habitat and species
Nature and Biodiversity	National Program for Ecological Corridors	Parks Canada Agency	Existing	Nature and Biodiversity 4	Provincial governments; Territorial governments; Municipal governments; Indigenous communities and organizations	Habitat and species
Nature and Biodiversity	Aquatic Ecosystems Restoration Fund	Fisheries and Oceans Canada	Existing	Nature and Biodiversity 4	Indigenous communities and organizations; Not-for-profit organizations; Academic institutions	Habitat and species; Changing freshwater, ocean and marine conditions
Infrastructure	Disaster Mitigation and Adaptation Fund	Infrastructure Canada	Existing with new investment	Cross Cutting 4	Provincial governments; Territorial governments; Municipal governments; Indigenous communities and organizations; Not-for-profit organizations; Private sector	Flooding; Drought; Fire events; Extreme heat events; Erosion; Extreme weather events; Permafrost thaw and degradation; Sea-level
Infrastructure	Natural Infrastructure Fund	Infrastructure Canada	Existing	Nature and Biodiversity 3	Provincial governments; Territorial governments; Municipal governments; Indigenous communities and organizations; Not-for-profit organizations; Private sector	Flooding; Erosion; Extreme heat events; Extreme weather events
Infrastructure	Climate Resilient Built Environment (CRBE) Initiative	Infrastructure Canada; National Research Council Canada	Existing	Infrastructure 3	Provincial governments; Territorial governments; Municipal governments; Academic institutions; Not-for-profit organizations; Academic institutions	Flooding; Fire events; Extreme weather events; Extreme heat events

GOVERNMENT OF CANADA ADAPTATION ACTION PLAN TABLE						
NAS System	**Federal Action**	**Lead Department/Agency**	**Status**	**NAS Objective(s)**	**Audience**	**Climate Risk**
Infrastructure	Standards to Support Resilient Infrastructure Program (SSRIP)	Infrastructure Canada; Standards Council of Canada	Existing	Infrastructure 3	Provincial governments; Territorial governments; Municipal governments; Indigenous communities and organizations; Not-for-profit organizations; Academic institutions	Flooding; Fire events; Extreme weather events; Permafrost thaw and degradation; Changing snow, glacier and ice conditions; Extreme heat events
Infrastructure	National Trade Corridors Fund	Transport Canada	Existing	Infrastructure 4	Provincial governments; Territorial governments; Municipal governments; Indigenous communities and organizations; Not-for-profit organizations; Private sector; Academic institutions; Federally regulated organizations; Provincially regulated organizations	Flooding; Permafrost thaw and degradation; Extreme weather events; Erosion; Sea level
Infrastructure	First Nations Infrastructure Fund	Indigenous Services Canada	Existing	Infrastructure 3	Indigenous communities and organizations; Not-for-profit organizations; Academic institutions; Provincial governments; Territorial governments; Municipal governments	Flooding; Fire events; Extreme weather events; Erosion
Infrastructure	Capital Facilities and Maintenance Program	Indigenous Services Canada	Existing	Infrastructure 3	Indigenous communities and organizations; Not-for-profit organizations; Academic institutions; Provincial governments; Territorial governments; Municipal governments	Flooding; Fire events; Erosion
Infrastructure	Supporting Resilient Infrastructure	Infrastructure Canada	New Investment	Infrastructure 1; Infrastructure 2; Infrastructure 4	Provincial governments; Territorial governments; Municipal governments; Indigenous communities and organizations; Not-for-profit organizations; Academic institutions	All climate risks
Economy and Workers	Climate Resilient Coastal and Northern Communities Program	Natural Resources Canada	New Investment	Economy and Workers 3; Cross Cutting 3; Cross Cutting 4	Communities; Indigenous communities and organizations	Changing freshwater, ocean and marine conditions; Changing snow, glacier and ice conditions; Sea level; Permafrost thaw and degradation; Extreme weather events
Economy and Workers	Using Scenario Analysis to Assess Climate Risk	Bank of Canada; Office of the Superintendent of Financial Institutions	Existing	Economy and Workers 4	Private sector	All climate risks
Economy and Workers	National Supply Chain Taskforce	Transport Canada	Existing	Economy and Workers 1	Private sector	Flooding; Fire events; Extreme weather events

GOVERNMENT OF CANADA ADAPTATION ACTION PLAN TABLE						
NAS System	**Federal Action**	**Lead Department/Agency**	**Status**	**NAS Objective(s)**	**Audience**	**Climate Risk**
Economy and Workers	Climate Resilient Mining Program	Natural Resources Canada	Existing	Economy and Workers 1; Nature and Biodiversity 1	Private sector	Extreme weather events
Economy and Workers	Agricultural Climate Solutions – On-Farm Climate Action Fund	Agriculture and Agri-food Canada	Existing	Economy and Workers 2	Provincial governments; Territorial governments; Indigenous communities and organizations; Not-for-profit organizations; Private sector; Agricultural producers	Drought; Habitat and species; Changing freshwater, ocean and marine conditions
Economy and Workers	Rail Climate Change Adaptation Program	Transport Canada	Existing	Economy and Workers 2	Federally regulated organizations; Provincially regulated organizations	Flooding; Fire events; Extreme weather events; Permafrost thaw and degradation
Economy and Workers	Sectoral Workforce Solutions Program	Economic and Social Development Canada	Existing	Economy and Workers 3	Provincial governments; Territorial governments; Municipal governments; Indigenous communities and organizations; Not-for-profit organizations; Private sector	All climate risks
Economy and Workers	Agricultural Climate Solutions – Living Labs	Agriculture and Agri-food Canada	Existing	Economy and Workers 3	Agricultural producers; Academic institutions; Private sector; Not-for-profit organizations	Drought; Habitat and species; Changing freshwater, ocean and marine conditions
Economy and Workers	Canadian Agricultural Partnership: Federal, provincial, territorial (FPT) cost-shared programs	Agriculture and Agri-food Canada	Existing	Economy and Workers 3; Health and Wellbeing 4; Nature and Biodiversity 1; Nature and Biodiversity 2; Nature and Biodiversity 3; Nature and Biodiversity 4	Provincial governments; Territorial governments; Agricultural producers	Drought; Habitat and species; Changing freshwater, ocean and marine conditions; Fire events
Economy and Workers	Canadian Agricultural Partnership: Agriculture and Agri-food Canada Science and Innovation programs	Agriculture and Agri-food Canada	Existing	Economy and Workers 3; Nature and Biodiversity 3	Not-for-profit organizations; Indigenous communities and organizations; Private sector; Agricultural producers	All climate risks
Economy and Workers	Canadian Agricultural Partnership: FPT Business Risk Management Programs	Agriculture and Agri-food Canada	Existing	Economy and Workers 3; Disaster Resilience 2	Agricultural producers; Provincial governments; Private sector; Not-for-profit organizations	Drought; Flooding; Fire events; Extreme weather events
Knowledge and Understanding	Canada's National Assessment Process (*Canada in a Changing Climate: Advancing our Knowledge for Action*)	Natural Resources Canada	Existing	Cross Cutting 1; Cross Cutting 2	All Canadians	All climate risks
Knowledge and Understanding	Canadian Centre for Climate Services	Environment and Climate Change Canada	Existing	Cross Cutting 2	All Canadians; Academic institutions	All climate risks

GOVERNMENT OF CANADA ADAPTATION ACTION PLAN TABLE						
NAS System	**Federal Action**	**Lead Department/Agency**	**Status**	**NAS Objective(s)**	**Audience**	**Climate Risk**
Knowledge and Understanding	Climate Science 2050	Environment and Climate Change Canada	Existing	Cross Cutting 1	All Canadians; Academic institutions	All climate risks
Knowledge and Understanding	Climate science to inform risk assessment and adaptation planning	Environment and Climate Change Canada	Existing	Cross Cutting 1	All Canadians; Academic institutions	All climate risks
Knowledge and Understanding	The Meteorological Service of Canada's work in response to hazards	Environment and Climate Change Canada	Existing	Cross Cutting 1	All Canadians	Extreme weather events; Flooding; Extreme heat events; Air quality; Changing freshwater, ocean and marine conditions
Knowledge and Understanding	Indigenous Community-based Climate Monitoring	Crown-Indigenous Relations and Northern Affairs	Existing	Cross Cutting 2	Indigenous groups	All climate risks; Changing freshwater, ocean and marine conditions; Changing snow, glacier and ice conditions; Habitat and species
Knowledge and Understanding	Aquatic Climate Change Adaptation Services Program	Fisheries and Oceans Canada	Existing	Cross Cutting 1	Communities; Academic institutions; Natural resource managers	Sea level; Changing freshwater, ocean and marine conditions; Changing snow, glacier and ice conditions; Habitat and species
Knowledge and Understanding	Enhancing Sustainable Forest Management Practices Program	Natural Resources Canada	Existing	Cross Cutting 1	Natural resource managers	Habitat and species; Fire events
Knowledge and Understanding	*Resourceful, Resilient, Ready: Canada's Strategy for Satellite Earth Observation*	Canadian Space Agency; Natural Resources Canada; Environment and Climate Change Canada	Existing	Cross Cutting 1	Provincial governments; Territorial governments; academic institutions; Indigenous communities and organizations; Private sector	Air quality; Flooding; Fire events; Infectious diseases; Food security; Drought; Extreme weather events; Permafrost thaw and degradation; Changing freshwater, ocean and marine conditions; Changing snow, glacier and ice conditions
Knowledge and Understanding	Expansion of foundational climate data, information, science and communications	Environment and Climate Change Canada	New Investment	Cross Cutting 1	All Canadians	All climate risks
Tools and Resources	Climate Change Preparedness in the North	Crown-Indigenous Relations and Northern Affairs	Existing	Cross Cutting 3; Cross Cutting 4; Cross Cutting 5	Indigenous communities and organizations; Communities; Territorial governments; Academic institutions; Not-for-profit organizations	Extreme weather events; Permafrost thaw and degradation; Changing snow, glacier and ice conditions; Habitat and species; Food security
Tools and Resources	First Nation Adapt	Crown-Indigenous Relations and Northern Affairs	Existing	Cross Cutting 3; Cross Cutting 4; Cross Cutting 5	Indigenous communities and organizations	Flooding; Erosion; Extreme weather events

GOVERNMENT OF CANADA ADAPTATION ACTION PLAN TABLE						
NAS System	**Federal Action**	**Lead Department/Agency**	**Status**	**NAS Objective(s)**	**Audience**	**Climate Risk**
Tools and Resources	Advancing Municipal Adaptation Action	Environment and Climate Change Canada	New Investment	Cross Cutting 5; Cross Cutting 3; Cross Cutting 4	Municipalities	All climate risks; Flooding; Fire events; Extreme heat events
Governance and Leadership	Indigenous Climate Leadership	Crown-Indigenous Relations and Northern Affairs	Existing	Cross Cutting 7	Indigenous communities and organizations	All climate risks
Governance and Leadership	Integrated Climate Lens	Environment and Climate Change Canada	Existing	Cross Cutting 9	Federal government	All climate risks
Governance and Leadership	Greening Government Strategy	Treasury Board Secretariat	Existing	Cross Cutting 9	Federal government	All climate risks

Annex 4: National Adaptation Strategy Goals, Objectives, and Targets

NATIONAL ADAPTATION STRATEGY SYSTEMS

DISASTER RESILIENCE					
Goal	Communities and all people living in Canada are better enabled to prepare for, mitigate, respond to and recover from the hazards, risks and consequences of disasters linked to the changing climate; the well-being and livelihoods of people living in Canada are better protected, and overall disaster risks have been reduced, particularly for vulnerable sectors, regions and populations at greater risk.				
Objectives	Disaster Resilience 1 There is a measurable reduction of people in Canada impacted by climate-related hazards (e.g., eliminate fatalities and reduce displacement and damage from wildfires; eliminate mortality and reduce hospitalization from extreme heat; households in high-risk flood zones and those subject to flooding from extreme precipitation are protected).	Disaster Resilience 2 Effective, efficient and accountable governance mechanisms are established for stronger disaster risk reduction coordination through a whole of society approach.	Disaster Resilience 3 All communities are able to implement timely and successful emergency response plans that are readily accessible to everyone in the event of a disaster.	Disaster Resilience 4 National and regional readiness, mitigation and recovery plans and policies integrate the latest evidence and are inclusive of all populations/communities.	Disaster Resilience 5 People affected by disasters face minimal disruptions to lives and livelihoods, and can return to their homes within a reasonable period of time (e.g., establish clear timelines with milestones for displaced Canadians to return home after a disaster).
Targets	By 2025, 60% of Canadians are aware of the disaster risks facing their household as a result of climate change. *(also Cross Cutting 2)*	By 2025, FPT governments have engaged regularly, including with whole of society partners and Indigenous communities, to align EM adaptation activities to promote disaster resilience.	All communities in zones of high risk develop and implement a wildfire community protection plan by 2050, with 15% by 2028.		By 2028, a national recovery strategy is developed which sets out shorter timeframes for displaced individuals to be able to return to their homes or resettle after climate change disaster events.
	By 2028, at least 200 out of 250 targeted high-risk areas identified as priorities in collaboration with PTs are covered by new flood hazard maps, produced in accordance with scientific guidance and made available to Canadians. *(also Cross Cutting 1 & Cross Cutting 2)*				By 2025, in 65% of disaster events where provinces and territories seek support through the Disaster Financial Assistance Arrangements, they seek additional funding for measures to prepare for, respond to and recover from future natural disasters
	By 2025, 50% of Canadians have taken measures to respond to climate change risks facing their household.				

HEALTH AND WELLBEING					
Goal	The health of all people in Canada is safe-guarded and supported by a climate-resilient and adaptive health sector that has robust and agile systems and services that account for and support the diverse components of well-being.				
Objectives	Health and Wellbeing 1 Health systems have the expertise, knowledge and resources needed to identify climate change-related risks and take equitable, evidence-based action to protect health.	Health and Wellbeing 2 Health authorities have identified the extent to which climate change is impacting health and have established methods for tracking future health impacts and evaluating progress towards protecting health and reducing risks.	Health and Wellbeing 3 People are protected from urgent climate-related health risks such as extreme heat, infectious diseases, foodborne hazards and impacts to traditional foods, poor mental health outcomes and others.	Health and Wellbeing 4 Climate action across all sectors promotes good health and prioritizes measures that have multiple benefits (e.g., protecting health and improving environmental sustainability).	
Proposed Targets	By 2026, 80% of health regions will have implemented evidence-based adaptation measures to protect health from extreme heat.	By 2030, health systems have identified risks, developed adaptation plans and are measuring progress towards climate resilience.	By 2040, deaths due to extreme heatwaves have been eliminated.	By 2030, consideration of health impacts and benefits are integrated into key climate change tools, guidelines and standards.	
NATURE AND BIODIVERSITY					
Goal	Biodiversity loss has been halted and reversed and nature has fully recovered allowing for natural and human adaptation, where ecosystems and communities are thriving together in a changing climate, with human systems existing in close connection with natural systems.				
Objectives	Nature and Biodiversity 1 Human activities are transformed to halt and reverse biodiversity loss, and enhance ecosystem connectivity and resilience.	Nature and Biodiversity 2 First Nations, Métis Nation, and Inuit governments, organizations and communities have the opportunities and means to pursue self-determined priorities for ecosystem stewardship initiatives to adapt to climate change.	Nature and Biodiversity 3 The use of nature-based solutions is accelerated to increase resilience and maximize co-benefits such as reducing stress on grey infrastructure and increasing social benefits of nature.	Nature and Biodiversity 4 The ecosystems most affected by climate change are monitored, restored and managed to ensure their continued viability and adaptive capacity.	
Proposed Targets	Conserve 25% of our lands and waters by 2025 and 30%of each by 2030, working to halt and reverse nature loss by 2030 in Canada.	By 2026, support new and existing Guardians initiatives, establish new Indigenous Guardians Networks and support Indigenous communities to build capacity to establish more Indigenous Protected and Conserved Areas.	Establish 15 new national urban parks by 2030.		
	Identify and support at least 3 ecological corridors by 2026 to improve ecological connectivity between protected and conserved areas.				

INFRASTRUCTURE					
Goal	All infrastructure systems in Canada are climate resilient and undergo continuous adaptation to adjust for future impacts to deliver reliable, equitable and sustainable services to all of society.				
Objectives	Infrastructure 1 Technical standards have been updated or developed to embed climate change in all decisions to locate, plan, design, manage, adapt, operate and maintain infrastructure systems across their lifecycle.	Infrastructure 2 Public and private infrastructure decision-making is informed by system-wide assessments of, and planning for, climate change risks.	Infrastructure 3 Infrastructure decisions prioritize benefits for marginalized populations and communities at highest risk of climate change impacts.	Infrastructure 4 All new investments in infrastructure apply resilience criteria and adopt climate change guidance, standards and future design data to maximize the long-term benefits of infrastructure outcomes.	
Proposed Targets	By 2030, robust guidance, codes and standards covering the top climate change risks for key public infrastructure systems are available to be adopted by all infrastructure decision makers.	By 2030, 80% of public and municipal organizations have factored climate change adaptation into their decision-making processes.		Starting in 2024, resilience to climate change impacts is factored into all new federal infrastructure funding programs.	
ECONOMY AND WORKERS					
Goal	Canada's economy is structured to anticipate, manage, adapt and respond to climate change impacts; and to actively advance new and inclusive opportunities within a changing climate, particularly for communities at greater risk, Indigenous Peoples and vulnerable economic sectors.				
Objectives	Economy and Workers 1 The business case for adaptation is advanced through research and the knowledge is accessible, tailored and useful.	Economy and Workers 2 Policy and financial instruments provide the right incentives and remove disincentives for proactive adaptation.	Economy and Workers 3 Canada has a skilled, diverse, and adaptable workforce that is supported by education, training, knowledge and skills development to respond to future impacts of climate change.	Economy and Workers 4 Economic sectors most vulnerable to the impacts of climate change routinely assess climate change impacts on the operating environment and incorporate adaptation considerations into business decisions.	
Proposed Targets			By 2027, 75% of the members of professional associations (i.e., civil engineers, planners, landscape architects and accountants) have the capacity to apply climate change adaptation tools and information and communicate the business case for adaptation measures to their clients.	By 2027, 80% of highly exposed businesses include adaptation to climate change in plans and strategies in order to strengthen their competitiveness.	By 2030, coastal communities and businesses reduce the incremental costs of adaptation by 40%.

FOUNDATIONAL

KNOWLEDGE AND UNDERSTANDING				
Objectives	Cross Cutting 1 A robust evidence base for adaptation is in place through development, stewarding and sharing of existing and new data, knowledge (including Indigenous knowledge and local knowledge), environmental and socio-economic analyses and other ways of knowing.	Cross Cutting 2 Everyone in Canada is informed about climate risks and vulnerabilities. Available information is accessible, easy to understand and designed for different audiences.		
Proposed Targets		By 2024, Canadians better understand how to use relevant information to support adaptation decision-making.		
TOOLS AND RESOURCES				
Objectives	Cross Cutting 3 Everyone in Canada has equitable access to the tools and supports needed to prepare for, reduce and respond to climate change impacts.	Cross Cutting 4 Sustained, sufficient and equitable public and private funding is in place to support adaptation to climate change.	Cross Cutting 5 Local, regional and institutional capacity for adaptation contributes to self-sufficiency and participation in adaptation actions.	
GOVERNANCE AND LEADERSHIP				
Objectives	Cross Cutting 6 Effective governance for climate change adaptation is established and is inclusive of people who are disproportionately impacted by climate change.	Cross Cutting 7 First Nations, Métis Nation and Inuit are prepared for and have the capacity to respond to climate change through self-determined adaptation actions that are grounded in their cultures, preferences and community priorities.	Cross Cutting 8 Adaptation efforts improve social connections and reduce isolation in order to enhance overall community resilience to climate change.	Cross Cutting 9 Innovative solutions, through exchange of best practices and cross-jurisdictional cooperation, enhance adaptation outcomes across the country and position Canada as a global leader in supporting climate resilience.

Annex 5: Key Terms and Concepts

Adaptation

In human systems, the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities. In natural systems, the process of adjustment to actual climate and its effects; human intervention may facilitate adjustment to expected climate and its effects.

Adaptive Capacity

The ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences.

Co-benefits

The positive effects that a policy or measure aimed at one objective might have on other objectives, thereby increasing the total benefits for society or the environment. Co-benefits are often subject to uncertainty and depend on local circumstances and implementation practices, among other factors. Co-benefits are also referred to as ancillary benefits.

Climate-related hazards

The potential occurrence of a [climatic] event or trend that may cause loss of life, injury or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems and environmental resources.

Ecosystem Goods and Services

Ecosystem goods and services include the tangible goods (e.g., fish, timber) and less tangible services (e.g., clean air, productive soil) that arise from ecosystem structures and functions and that provide benefits to people.

Exposure

The presence of people, livelihoods, species or ecosystems, environmental functions, services and resources, infrastructure, or economic, social or cultural assets in places and settings that could be adversely affected.

Disaster Risk Reduction (DRR)

The substantial reduction of disaster risk and losses in lives, livelihoods and health, as well as in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.

Emergency Management (EM)

The prevention and mitigation of, preparedness for, response to and recovery from emergencies.

Green/Natural Infrastructure

The interconnected set of natural and constructed ecological systems, green spaces and other landscape features. It includes planted and indigenous trees, wetlands, parks, green open spaces and original grassland and woodlands, as well as possible building and street-level design interventions that incorporate vegetation. Green infrastructure provides services and functions in the same way as conventional infrastructure.

Hazard

A potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.

Health System

Individuals, organizations, groups, communities, all orders of government, Indigenous health organizations and others who contribute to improving the health and well-being of populations make up Canada's complex health system. This includes, for example, Indigenous health organizations, local/municipal health authorities, provincial and territorial ministries of health, national and provincial/territorial health organizations and institutions, federal agencies and departments whose responsibility is the management

of risks that may impact population health or funding research, health and allied health professionals and associations, healthcare and public health service providers, non-governmental organizations and community-based organizations, universities, laboratories and research institutions, media, private sector and industry partners.

Infrastructure

Includes new and existing assets, as well as grey infrastructure, hybrid and natural infrastructure.

Infrastructure systems

Sets of built and nature-based infrastructure assets that together deliver key services, and which share vulnerabilities and interdependencies, within and across the built environment, natural systems such as ecosystems and watersheds, jurisdictions and transboundary territories.

Infrastructure services

Includes the provision and support for health care, utilities, water and wastewater, telecommunications, emergency services, trade and transportation routes and power (among others).

(Disaster) Mitigation

Sustained actions taken to eliminate or reduce risks and impacts posed by hazards well before an emergency or disaster occurs; mitigation activities may be included as part of prevention. Measures may be structural (e.g., flood dikes) or non-structural (e.g., land use zoning and building codes).

(Greenhouse Gas) Mitigation

A human intervention to reduce emissions or enhance the sinks of greenhouse gases.

Nature-based Solutions

Nature-based solutions are actions to protect, sustainably manage and restore natural or modified ecosystems which address societal challenges effectively and adaptively, simultaneously providing human well-being, ecosystem resilience and biodiversity benefits.

Preparedness

A phase of emergency management consisting in making decisions and taking measures before an emergency in order to be ready to effectively respond and recover.

Prevention

Actions taken to avoid the occurrence of negative consequences associated with a given threat; prevention activities may be included as part of mitigation.

Resilience

The capacity of social, economic and environmental systems to cope with a hazardous event, trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity and structure while maintaining the capacity for adaptation, learning and transformation.

Vulnerability

The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt.