

National Adaptation Strategy

**Recommendations
from the Federation of
Canadian Municipalities
September 2022**



FEDERATION
OF CANADIAN
MUNICIPALITIES

FÉDÉRATION
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MUNICIPALITÉS



Table of contents

Introduction	3
Recommendation #1: Scale up investment in resilient public infrastructure and nature-based solutions	8
Recommendation #2: Invest in climate data, and local and regional climate risk and vulnerability assessments	13
Recommendation #3: Integrate climate risks into public sector decision making	18
Recommendation #4: Build effective collaboration & climate governance practices	24
NAS implementation	28
Appendix	29

Introduction

The Federation of Canadian Municipalities (FCM) is the national voice of Canada’s local order of government, representing more than 2,000 cities and communities of all sizes: more than 90 percent of Canadians living in every province and territory.

Canada’s cities and communities are where people live, work, raise families and start businesses. These are the places where national challenges unfold in people’s daily lives, where municipalities turn broad federal objectives into real results that make life better for Canadians. As Canada’s frontline order of government, municipal leaders are uniquely positioned to respond to local needs, to maximize local opportunities, and to build solutions that work. While collecting only a small fraction of Canada’s tax revenue, municipalities make the most of every dollar to deliver concrete results. This makes local governments essential partners in achieving national goals—from creating jobs and reaching net-zero emissions to ending chronic homelessness and making housing more affordable for Canadians.

We must invest in systemic transformation that will lead to better decisions, better investments and better results.

The importance of local action and leadership is particularly evident in the new climate reality we are facing today. From floods and wildfires to coastal surges, local leaders are responding as new weather extremes force families from their homes and cost our economy billions each year in property damage and lost productivity. Municipalities are working hard to build more resilient communities but are struggling with limited tools and resources. The federal Disaster Mitigation and Adaptation Fund (DMAF), for example, has been an essential support for local resilience, but even with a DMAF top-up in Budget 2021, we are nowhere near the funding levels and additional resources that communities need to protect Canadians from what’s coming.

In our report with the Insurance Bureau of Canada, *Investing in Canada’s Future: The Cost of Climate Adaptation*, we found that avoiding the worst impacts of climate change at the municipal level will cost an estimated \$5.3 billion per year shared amongst three orders of government. Those investments are critical to helping local communities adapt to the changing climate, and to reduce risk from extreme weather.

But those investments must be done right to increase our community resiliency for the long-term. We cannot invest in single adaptation projects and hope to make a lasting change. Instead, we must invest in systemic transformation that will lead to better decisions, better investments, and better results.



FCM's recommendations for the NAS

FCM's short-term recommendations for the National Adaptation Strategy (NAS) focus on actions that can be taken through federal-municipal partnership, indicating where multi-sector collaboration is needed. Overall, the recommendations are divided into four main overarching categories, which align with the key stages of the municipal planning and development lifecycle. The four overarching recommendations are:

1. **Scale up investment in resilient public infrastructure and nature-based solutions.**

With municipalities owning 60% of public infrastructure, there is a monumental need to rapidly scale up financial support for disaster mitigation and climate resilient infrastructure for communities of all sizes and establish a long-term funding commitment that will enable communities to plan for the future. Investing in proven delivery mechanisms like the Disaster Mitigation and Adaptation Fund (DMAF) and expanding existing programs like the Natural Infrastructure Fund and the Green Municipal Fund are ways to quickly scale up action. Investing in conservation areas, including Indigenous Protected and Conserved Areas (IPCAs), and support for building back better in recovery following a natural disaster are essential components to strengthen resiliency in Canada.

2. **Invest in climate data, and local and regional climate risk and vulnerability assessments.**

To understand and plan for greater climate risks, municipalities need support to ensure that all communities have access to local or regional risk and vulnerability assessments. These risk assessments require accurate and usable climate data and modelling; and anti-racism and equity considerations need to be integrated into data collection and risk assessment processes. Local considerations are essential in the identification of national high-risk areas, for identifying critical infrastructure at risk, and to harmonize climate tools and standards across Canada.

3. Integrate climate risks into public sector decision making. Significant operational and capacity challenges remain to integrate climate resiliency into planning processes at the local level, including in municipal asset management, building retrofits and GHG reduction projects. Federally funded infrastructure and climate mitigation policies and programs should include climate adaptation and resiliency objectives, public decision-making should value the co-benefits of natural infrastructure, and the federal government should support municipalities with integrating anti-racism and equity considerations into consultation processes and projects.

4. Build effective collaboration & climate governance practices. Implementation of the National Adaptation Strategy and its Action Plan must include formal, long-term mechanisms for collaboration between federal, provincial, territorial and municipal governments, First Nation, Métis, Inuit, urban and rural Indigenous Communities, and NGOs and civil society. An effective National Adaptation Strategy must advance reconciliation, and ensure that equity seeking groups, including marginalized communities most at risk from climate change impacts, are represented in NAS decision-making bodies and centred in policy and program discussions. Regional and/or risk-based collaboration, and ongoing monitoring, evaluation and progress reporting are critical to save lives and protect communities.

Within each of these four recommendations, this report outlines 23 specific short-term actions, potential targets and design and delivery considerations. The targets suggested in this report are intentionally ambitious to reflect the urgency with which actions must be taken to save lives and reduce disaster risk as effectively as possible. The federal government should track whether substantial progress has been made towards the targets by the identified timelines.

Figure 1 summarizes the short-term actions identified for each of FCM's overarching recommendations. The detailed descriptions of each action, along with the potential targets and design and delivery consideration can be found in the main document, while the principles that guided the development of these actions can be found in the Appendix.

Municipal planning cycle

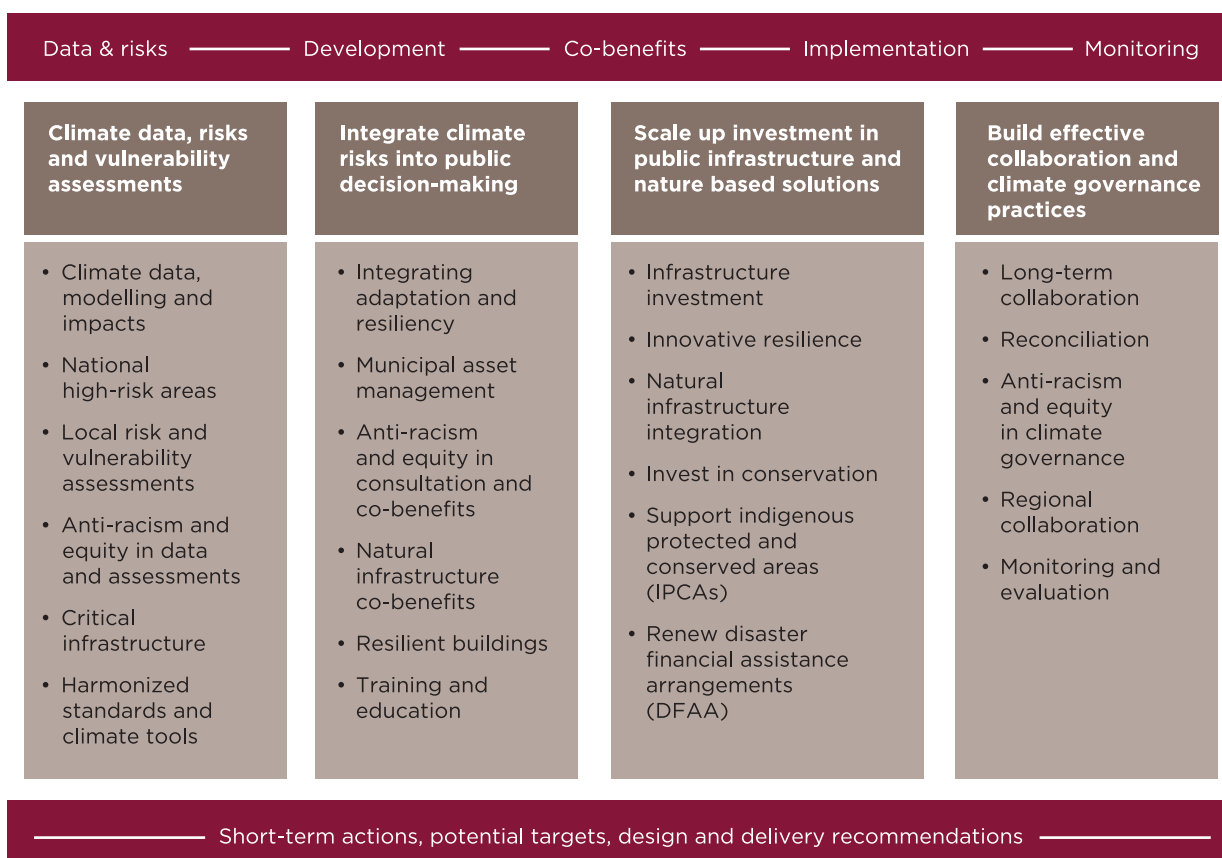


Figure 1: Summary of FCM's Recommended Short-term actions according to the typical municipal planning cycle

The design and delivery considerations included below are detailed elements that FCM believes are needed to effectively achieve the identified action and proposed target. These design and delivery considerations are intended to build upon existing federal programs and the systems that are already in place in communities and across orders of government, recognizing that there are only a few short years to scale up action to protect communities from growing climate risks. FCM encourages others, including individual municipalities, Indigenous communities and civil society to share their views on program design and delivery, and these views should be heard and considered by the federal government in the implementation of the Action Plan.

The National Adaptation Strategy (NAS) will be Canada's first attempt at a national strategy to guide our collective work in reducing the impacts of climate change that are now inevitable and ensure that our communities and people are safe and can withstand an uncertain future.



Getting the NAS right is particularly important for municipalities across Canada because it is clear that while we must continue to work towards net-zero emissions by 2050, there are serious climate impacts that our communities are facing now. The flooding, wildfires, and heat waves that have devastated this country over the past year alone demonstrate how urgently our communities need to adapt through a whole-of-society approach.

Over the course of the past year, FCM has contributed to two of the NAS Advisory Tables and participated in the Ministerial Roundtable at the Globe Forum and the launch of the federal consultation process. We are also a member of the Climate Proof Canada Coalition, working with a wide range of stakeholders on key NAS recommendations. The following recommendations have been developed through extensive consultation with FCM's Board of Directors and our 2,000 member municipalities and, together, offer a comprehensive approach to protecting Canadians from climate change from the municipal perspective.

Recommendation #1:

Scale up investment in resilient public infrastructure and nature-based solutions

Across Canada, the impacts of climate change are increasingly clear and increasingly devastating. Core infrastructure, particularly aging infrastructure, is being damaged, destroyed or degraded by more frequent and severe extreme weather events and other climate impacts such as permafrost melt. With municipalities owning 60% of public infrastructure, transformational planning and action at the local level are critical to building Canadian resilience to climate change.

We know that every dollar invested in infrastructure generates at least \$1.60 in economic growth, and we also know that for every dollar invested in disaster mitigation, we save \$6 in avoided damages. So it makes sense to continue investing in resilient infrastructure to the level that is required to protect Canadians now and in the future. But infrastructure is not just roads and bridges. Infrastructure includes our wetlands, forests, fields, and rivers. To properly invest in resilient infrastructure, we must therefore look to how a combination of grey (roads, bridges, buildings) and green (forest, wetlands, rain gardens) infrastructure can best provide the services that communities rely on. This must be a whole-of-society approach to ensure Indigenous communities can manage lands as they have done for millennia, whether in identified Indigenous Protected and Conserved Areas (IPCAs) or natural areas embedded within municipalities or other jurisdictions.

We must also take a service delivery approach when we are building back after a disaster. It is more important to build back the services lost than the structures themselves and so it will be critical to ensure that disaster recovery financing, at the provincial and national level, is flexible and allows for communities to rebuild infrastructure that is more resilient than it was before.



Scale up investment in resilient public infrastructure and nature-based solutions

RECOMMENDATIONS AND SHORT-TERM ACTIONS	POTENTIAL TARGET	DESIGN & DELIVERY
<p>1. Infrastructure investment: Scale up financial support for disaster mitigation and climate resilient infrastructure for communities of all sizes and establish a long-term funding commitment that will enable communities to plan for the future</p>	<p>By 2025, investment in adaptation and risk resilience is on par with a minimum of \$5.3 billion per year, cost shared between all levels of government</p>	<ul style="list-style-type: none"> ■ Immediately invest \$2 billion in DMAF & commit to a minimum of \$1 billion annually for next 10 years ■ Ensure public infrastructure investments remain available to all communities based on identified national high-risk areas or local risk and vulnerability assessments ■ Invest in smaller scale resilience projects for rural, remote and northern communities ■ Invest in nature and nature-based solutions (including land acquisition for conservation and biodiversity) ■ Ensure that natural infrastructure is included as critical infrastructure ■ Include monitoring and evaluation of adaptation efforts as eligible expenditures ■ Support the development of networks or regional collaborations to investigate the interdependencies between critical infrastructure to better understand how to effectively enhance regional resilience

RECOMMENDATIONS AND SHORT-TERM ACTIONS	POTENTIAL TARGET	DESIGN & DELIVERY
<p>2. Innovative resilience: Fund municipal projects that improve, pilot or support the scaling up of innovative approaches to adapt to climate change, that includes better integration of grey and green infrastructure, and that develop collaborative approaches across jurisdictions</p>	<p>By 2025, funding support for improving, piloting or scaling up adaptation initiatives is available to communities across Canada</p>	<ul style="list-style-type: none"> ■ Support funding and capacity building for municipalities to better integrate mitigation and adaptation into their climate solutions through planning, studies, pilots and capital projects ■ Support regional and/or risk-based approaches to capacity building, particularly for small, rural and remote or northern communities ■ Invest in staffing, training, network development, and pilot projects within communities or regions (e.g., regional programs, networks and initiatives) that enable municipalities, Indigenous communities, watershed authorities etc. to work together on specific regional and/or risk-based adaptation challenges ■ FCM's Green Municipal Fund (GMF) could be expanded to support this action
<p>3. Natural infrastructure integration: Support the integration of smaller-scale urban natural infrastructure solutions such as bioswales, rain gardens, green roofs, and urban forest canopies</p>	<p>By 2025, financial support is available to local governments, community organizations, and property owners for small-scale resiliency projects</p>	<ul style="list-style-type: none"> ■ Continue to fund and support small-scale resiliency projects, including through federal infrastructure programs like the Natural Infrastructure Fund, the Green and Inclusive Buildings Fund, the Active Transportation Fund, or the federal 2B Trees Program ■ Scale up funding for small-scale projects that integrate grey and green infrastructure ■ Consider funding smaller natural infrastructure solutions on private land in ways that would result in reduced risk to public assets ■ Support education and awareness raising programs for property/community level resiliency measures ■ Support research and development into innovative financing mechanisms for property/community level resiliency upgrades ■ Support not-for-profit organizations working locally to enhance natural infrastructure within communities ■ Support local government collaboration with local Indigenous organizations and communities ■ FCM's Green Municipal Fund (GMF) could also be expanded to support this action

RECOMMENDATIONS AND SHORT-TERM ACTIONS	POTENTIAL TARGET	DESIGN & DELIVERY
4. Invest in conservation: Invest in conservation at the local, regional, and national level to protect natural areas and ecological corridors, including through land acquisition	Existing targets of protecting 25% land & sea by 2025, 30% by 2030 are met through a combination of protected areas, other effective area-based conservation measures, and IPCAs	<ul style="list-style-type: none"> ■ Work with provinces, territories, local governments, First Nation, Métis, Inuit, and urban and rural Indigenous Communities, and other private stakeholders to develop and implement innovative conservation tools and financing ■ Conservation investments should include urban nature projects, land acquisition for protected areas, urban parks, and flood-plain renewal (including through strategic retreat where it has been determined to be locally appropriate) ■ Structure the High-Risk Flood Insurance Program to work with local governments to repossess and naturalize floodplains where determined to be locally appropriate
5. Support IPCAs: Support Indigenous Protected and Conserved Areas (IPCAs)	The needs and supports required by First Nation, Métis and Inuit communities, as identified by them, for advancing and establishing indigenous-led conservation efforts are fully supported	<ul style="list-style-type: none"> ■ Support the concepts and recommendations for IPCAs as outlined in the We Rise Together report by the Indigenous Circle of Experts ■ Continue to support Indigenous communities across the country to either establish IPCAs or undertake early planning and engagement work that could result in additional IPCAs ■ IPCA's should play a central role in attaining 30% of land, coastal and marine areas protected by 2030, and beyond ■ Support economic development opportunities through reconciliation and Indigenous-led conservation efforts ■ Include support for building relationships between First Nation, Inuit and Métis communities and their neighbouring municipal partners in establishing and managing IPCAs ■ Support collaborations between municipal governments and First Nation, Inuit and Métis communities around education and knowledge-sharing

RECOMMENDATIONS AND SHORT-TERM ACTIONS	POTENTIAL TARGET	DESIGN & DELIVERY
<p>6. Renew DFAA: Amend the Disaster Financial Assistance Arrangements (DFAA) to provide financial support for recovery following a natural disaster with an emphasis on building back better</p>	<p>By 2025, DFAA is revised to better support building back better post-disaster</p> <p>By 2025, a whole-of-society disaster relief and recovery framework is reviewed and updated to ensure consistent support in all regions</p>	<ul style="list-style-type: none"> ■ Assess the gaps in disaster relief financing nationwide that are currently preventing communities from “building back better” following disaster events ■ Ensure that financial support for disaster recovery is flexible and allows for and incentivizes moving structures and critical infrastructure out of hazard areas by supporting replacement of the services lost or impacted ■ Consider the disproportionate impacts a climate disaster has on vulnerable and equity seeking groups in any updates to the DFAA

Recommendation #2:

Invest in climate data, and local and regional climate risk and vulnerability assessments

To build resilient infrastructure, communities must have a solid understanding of their climate change risks and vulnerabilities. This means we must also invest in climate data, local and regional risk and vulnerability assessments, and equity and anti-racism assessments. Without up-to-date risk and vulnerability assessments, local governments may be making long-term investments in critical infrastructure that will be at risk.

The prioritization of high-risk areas will be critical in ensuring that those at greatest risk receive the support they need. However, it must be noted that areas identified at high-risk at a national scale will not necessarily catch all communities that are at high-risk due to unique local conditions or vulnerabilities. So it will be important to ensure that when taking a risk-based approach to prioritizing funding or other resources that it is done fairly and takes into consideration local risk & vulnerability assessments.

As we have seen in BC's recent heat wave, wildfires and flooding, climate change can impact communities or individuals differently depending on their vulnerability. The coroner's report on the BC heat dome determined that two-thirds of those heat-related deaths were among people aged 70 and older, while more than 80 per cent of those who died were on three or more chronic disease registries. Identifying vulnerable populations is a critical component of identifying risks.



Invest in climate data, and local and regional climate risk and vulnerability assessments

RECOMMENDATIONS AND SHORT-TERM ACTIONS	POTENTIAL TARGET	DESIGN & DELIVERY
<p>7. Climate data, modelling and impacts: Provide accurate climate data, modelling and other relevant information on climate risks for local decision-making at the property, community and regional levels</p>	<p>All local governments and Canadians have access to climate data for their community, to a property level, by 2025</p>	<ul style="list-style-type: none"> ■ Continue mandate of Canadian Centre for Climate Services (CCCS) to provide national level data and help desk services ■ Renew/update data continuously for improved accuracy and usability by local government practitioners. Federal climate data should be available in a format that is usable by Canadians without specialized knowledge ■ Include racialized, equity seeking groups, and First Nation, Métis, Inuit and urban/rural Indigenous communities in the development of processes, practices, and the monitoring and evaluation of data collection and guidance to ensure they appropriately address their needs and concerns

RECOMMENDATIONS AND SHORT-TERM ACTIONS	POTENTIAL TARGET	DESIGN & DELIVERY
<p>8. National high-risk areas: Work with provinces, territories, local governments, and First Nation, Métis, Inuit, urban and rural Indigenous communities to complete the identification of high-risk areas for extreme weather events, such as floods, wildfires and heat, and other climate impacts, such as permafrost melt, sea level rise, and coastal erosion</p>	<p>All high-risk areas are identified at a national level by 2025</p>	<ul style="list-style-type: none"> ■ Identification of high-risk areas must be coordinated with provinces/territories, local/regional governments and stakeholders and incorporate local data and mitigation activities, including knowledge learned from local risk and vulnerability assessments ■ High-risk area information must be available publicly in a usable format by local government practitioners ■ An assessment of vulnerable populations should be conducted to first identify those populations, individuals and communities most vulnerable to climate impacts, then to identify which of those are also at high-risk (e.g., most deaths from BC's 2021 heat wave were people over 70 who lived alone, did not have adequate cooling, or had chronic disabilities) ■ An implementation plan is in place to update high-risk area mapping regularly and communicate risks with provinces, territories, local governments, equity-seeking groups, and First Nation, Métis, Inuit, urban and rural Indigenous communities

RECOMMENDATIONS AND SHORT-TERM ACTIONS	POTENTIAL TARGET	DESIGN & DELIVERY
<p>9. Local risk and vulnerability assessments: Support the completion of climate change risk and vulnerability assessments for all communities across Canada</p>	<p>All local governments have completed or initiated a risk and vulnerability assessment (either locally or as part of a regional assessment) by 2025</p>	<ul style="list-style-type: none"> ■ Determine which communities/regions have not completed a risk and vulnerability assessment within the last 5 years that can be used for local decision making and support ■ Provide fundings and capacity building for the completion or revision of assessments where gaps are identified, for example through FCM's Municipal Asset Management Program ■ Prioritize the completion of assessments for identified vulnerable populations ■ Prioritize the completion of risk and vulnerability assessments in regions identified as high risk, while ensuring that all communities continue to have support for completing assessments ■ Identify risks of significant regional importance. These should be required in all vulnerability and risk assessments, and climate lens assessments. ■ Develop and implement a long-term plan to ensure risk and vulnerability assessments are updated regularly
<p>10. Anti-racism and equity in data and assessments: Ensure that anti-racism, equity and environmental justice principles are integrated into climate data collection processes and guidelines for risk and vulnerability assessment</p>	<p>All risk and vulnerability assessments completed/ revised after 2022 have anti-racism and equity considerations included</p>	<ul style="list-style-type: none"> ■ Include racialized and equity seeking groups in the development of processes, practices, and the monitoring and evaluation of data collection and guidance to ensure they appropriately address their needs and concerns ■ Support innovative consultation and data collection processes that better represent the perspectives of equity seeking groups (an example of the type of tool that could be used is the Energy Poverty Explorer Tool) ■ Support the centering of Indigenous traditional ecological knowledge and perspectives in regional risk and vulnerability assessments

RECOMMENDATIONS AND SHORT-TERM ACTIONS	POTENTIAL TARGET	DESIGN & DELIVERY
<p>11. Critical infrastructure: Work with Provinces, Territories, local governments, and First Nation, Métis, Inuit and urban and rural Indigenous communities to identify critical infrastructure at high-risk from the impacts of climate change</p>	<p>All high-risk areas are identified at a national level by 2025 and work is started on identifying and assessing the critical infrastructure at high-risk within those areas</p>	<ul style="list-style-type: none"> ■ Complete the National Strategy for Critical Infrastructure update, including provincial/territorial or regional implementation plans ■ Investigate the possibility of integrating critical infrastructure into regular Core Public Infrastructure Surveys or other mechanisms to measure progress
<p>12. Harmonized standards & tools: Work with Provinces, Territories, local governments, First Nation, Métis, Inuit and urban and rural Indigenous communities, and civil society to harmonize risk assessment processes, climate tools and standards across Canada</p>	<p>Guidelines or standards for climate change risk and vulnerability assessments are available to the public by 2025</p>	<ul style="list-style-type: none"> ■ Inventory the various methods being applied for assessing and monitoring climate change risk and vulnerability, as well as the identification of critical infrastructure at risk, and provide a set of guidelines or best practices that can be referenced by any community across Canada.

Recommendation #3:

Integrate climate risks into public sector decision making

The federal and municipal orders of government agree on the need for ambitious action on climate mitigation and adaptation. However, significant operational and capacity challenges remain, highlighting the need to integrate climate resiliency into infrastructure planning at the local level, support operational pilots of adaptation measures, move towards green and grey infrastructure integration, foster local collaboration and include adaptation considerations in mitigation projects. This is particularly true in small to medium sized municipalities.

To make a just transformation in public-sector decision making we must also centre the perspectives of racialized and equity seeking groups in the development of consultation processes, policies and projects to ensure their needs are appropriately addressed.



Integrate climate risks into public sector decision making

RECOMMENDATIONS AND SHORT-TERM ACTIONS	POTENTIAL TARGET	DESIGN & DELIVERY
<p>13. Integrating adaptation and resiliency: Work with local governments to ensure climate adaptation and resiliency objectives are incorporated into relevant federally funded infrastructure and climate mitigation policies and programs</p>	<p>By 2025 all relevant federal funding programs assess climate risks and resilience</p>	<ul style="list-style-type: none"> ■ In consultation with municipalities, integrate climate resilience objectives into all relevant federal funding programs, such as infrastructure, housing, and climate mitigation, to align and support local climate resiliency objectives (for example, adapting the Canada Greener Homes Grant to incorporate resiliency measures such as flood prevention can reduce climate risks and lower emissions at a reduced overall cost) ■ Ensure that the completion of risk assessments for federal funding is either an eligible expenditure for all funding programs or is supported separately (such as through the Municipal Climate Action Program (MCAP) program proposed by FCM), to ensure it is not a barrier to achieving a successful funding application ■ Support, through funding and capacity building, the integration of resilience into GHG mitigation projects (such as through an amended GMF funding offer)

RECOMMENDATIONS AND SHORT-TERM ACTIONS	POTENTIAL TARGET	DESIGN & DELIVERY
<p>14. Municipal asset management: Fund and support transformational planning and action by municipalities that will integrate a climate mitigation and adaptation lens into municipal asset management planning</p>	<p>Funding and capacity building support for the integration of climate and adaptation considerations into asset management practices is supported and continuous between now and 2030</p>	<ul style="list-style-type: none"> ■ Support programs that institutionalize climate considerations in asset management, integrate a systematic climate lens in all public service operations, fully integrates natural assets into asset management, and support cross-functional, climate-focused systems (e.g., outcomes-based procurement, carbon budgeting, etc.) ■ Ensure that funding and capacity building are accessible to small and medium-sized communities to overcome significant operational and capacity challenges that are barriers to achieving ambitious climate goals, including adaptation ■ FCM's Municipal Climate Action Program (MCAP) proposal is a potential program that would support this action

RECOMMENDATIONS AND SHORT-TERM ACTIONS	POTENTIAL TARGET	DESIGN & DELIVERY
<p>15. Anti-racism & equity in consultation and co-benefits: Ensure that local governments and racialized and equity seeking groups have the resources and capacity to collaborate on how to fully integrate and implement anti-racism, equity and environmental justice principles into climate adaptation consultation processes, policies and projects</p>	<p>By 2025, all local governments and racialized and equity seeking groups have access to support for integrating anti-racism, equity and environmental justice efforts into municipal planning and development processes</p>	<ul style="list-style-type: none"> ■ Support, through funding and capacity building, innovative consultation and data analysis processes that better represent the perspectives of equity seeking groups (an example of integrating equity considerations into consultation processes is a project funded by FCM's Municipalities for Climate Innovation Program (MCIP) in the City of Vancouver) ■ Support equity seeking groups in resourcing and capacity to participate in collaborative processes ■ Centre the perspectives of racialized and equity seeking groups in the development of consultation processes, policies and projects to ensure their needs are appropriately addressed ■ Centre vulnerable populations in service-delivery and infrastructure decision-making ■ Support municipal and Indigenous collaboration on climate adaptation consultation processes to elevate and centre Indigenous ecological knowledge and ensure municipalities adopt rights-based approaches that integrate ethical and legal responsibilities to Indigenous communities ■ FCM's MCAP or amended GMF programs are potential programs that could support this action

RECOMMENDATIONS AND SHORT-TERM ACTIONS	POTENTIAL TARGET	DESIGN & DELIVERY
<p>16. Natural infrastructure co-benefits: Support the development of best practices and standards for assessing the value and co-benefits of nature and natural/green infrastructure for municipal/regional service delivery</p>	<p>All local governments have access to a standard set of tools and guides for assessing the service delivery value and co-benefits of natural assets by 2025</p>	<ul style="list-style-type: none"> ■ Scale up work already being done in communities across Canada to value natural assets (Municipal Natural Assets Initiative, for example) ■ Work with the Public Sector Accounting Board to accelerate the assessment of natural assets within public sector financial disclosures ■ Support the assessment of vulnerable populations lacking nature/natural infrastructure to ensure projects support environmental justice and equity principles
<p>17. Resilient buildings: Integrate climate resilience measures into the federal Green Building Strategy and all relevant national model building codes and performance standards</p>	<p>By 2030, the federal government has worked with provinces, territories and municipalities to ensure that regional climate hazards are mitigated in the implementation of the Green Building Strategy, new national model building codes and standards</p>	<ul style="list-style-type: none"> ■ Ensure that the federal Green Building Strategy includes a strong emphasis on integrating climate hazards and risks into how buildings are designed, built and retrofitted in Canada ■ Support building and construction innovation and ensure that local governments and the building sector have up to date information on new technologies and approaches that reduce climate risks ■ Work with provinces, territories and local governments to accelerate the adoption of regionally appropriate climate resiliency measures into buildings codes and performance standards ■ Provide funding and capacity building support for municipalities to develop green building standards that incorporate resiliency measures ■ Apply a place-based approach to identifying green building economic opportunities, developing building material and technology supply-chains, and workforce training, particularly in regions that will face harder challenges transitioning to a net zero future

RECOMMENDATIONS AND SHORT-TERM ACTIONS	POTENTIAL TARGET	DESIGN & DELIVERY
<p>18. Training & education: Support training and education programs that incorporate disaster risk knowledge, including disaster prevention, mitigation, preparedness, response, recovery, and rehabilitation, as well as reconciliation, anti-racism and equity considerations into civic education for municipal staff and elected officials, as well as in professional education and training</p>	<p>Specialized training on integrating climate and equity considerations into public sector decision making is available to the public by 2025</p>	<ul style="list-style-type: none"> ■ Support professional associations to develop and deliver climate resiliency training ■ Support colleges and universities to develop/integrate climate resiliency into professional programs, such as public administration, engineering and planning programs ■ Support disaster risk and response training for civil servants and the public, particularly in support of the development of regional emergency response networks ■ Support the scale up and adoption of the Infrastructure Resilience Professional (IRP) designation to build sector capacity. Encourage the development of complimentary designations for other professional practices ■ Support training and education for civil servants on Indigenous ecological knowledge and climate resilience, and the implications for their work

Recommendation #4:

Build effective collaboration & climate governance practices

Adaptation efforts are going to be most effective when they are not restricted by jurisdictional boundaries. The protection of natural areas, the assessment of coastal erosion, and the management of wildfires are all examples of how adaptation will require significant collaboration between all orders of government, local and regional stakeholders, First Nation, Métis, and Inuit communities, urban and rural Indigenous populations, and other racialized and equity-seeking groups. The successful implementation of the NAS must therefore include a formal plan for long-term collaboration and dialogues between all stakeholders and a process for assessing progress and adjusting course when necessary.



Build effective collaboration & climate governance practices

RECOMMENDATIONS AND SHORT-TERM ACTIONS	POTENTIAL TARGET	DESIGN & DELIVERY
<p>19. Long-term collaboration: Implementation of the National Adaptation Strategy and its Action Plan, must include formal, long-term mechanisms for equity centred collaboration between federal, provincial, territorial and municipal governments, First Nation, Métis, Inuit, urban and rural Indigenous Communities, and NGOs and civil society</p>	<p>By 2023, following the release of the NAS, a formal process is established to regularly consult representatives from all stakeholder groups</p>	<ul style="list-style-type: none"> ■ Following the publication of the NAS and its Action Plan, a process for long-term collaboration is established within 6 months ■ The framework for long-term collaboration is based in the principles of multi-dimensional, transparent, substantive, equitable and intersectional dialogues ■ Local government representation is critical for the effective implementation of federal climate governance priorities such as identifying national high-risk areas, integrating a climate lens in government operations, and integrating climate considerations into the National Infrastructure Assessment ■ Local government representatives need to be able to engage meaningfully with all orders of government, and learn from First Nation, Métis, Inuit, urban and rural Indigenous Communities, as well as NGOs and civil society representatives

RECOMMENDATIONS AND SHORT-TERM ACTIONS	POTENTIAL TARGET	DESIGN & DELIVERY
<p>20. Reconciliation: Support Indigenous representation in all consultation processes supporting the implementation of the NAS and its Action Plan, including through adaptation decision-making and programs, policies, and practices that seek to recognize, understand, and centre traditional, Indigenous and local knowledge</p>	<p>The needs of First Nation, Métis, Inuit, urban and rural Indigenous communities, as identified by them, for advancing and establishing consultation processes that support reconciliation are fully supported</p>	<ul style="list-style-type: none"> ■ First Nation, Métis, Inuit, urban and rural Indigenous communities are able to determine what representation in long-term NAS consultation processes should look like and this is fully supported and implemented ■ Support the development of a learning network where local governments and First Nation, Métis, Inuit, urban and rural Indigenous communities can share knowledge and support regional and/or risk-based collaboration, for example through the First Nation-Municipal Community Economic Development Initiative
<p>21. Anti-racism & equity in climate governance: Ensure that equity seeking groups, including marginalized communities most at risk from climate change impacts, are represented in NAS decision-making bodies and centred in policy and program discussions</p>	<p>By 2025, an equity assessment of the NAS and its Action Plan is completed, and recommendations are actioned</p>	<ul style="list-style-type: none"> ■ Equity seeking groups and marginalized communities are included in ways that, as identified by them, best support their participation in all long-term consultation processes ■ An equity assessment would review how well the NAS and its Action Plan incorporate and support: intersectional representation, environmental justice, anti-racism, and reconciliation

RECOMMENDATIONS AND SHORT-TERM ACTIONS	POTENTIAL TARGET	DESIGN & DELIVERY
<p>22. Regional collaboration: Support for regional approaches to manage natural assets, disaster mitigation, response and recovery, and municipal-Indigenous collaborations</p>	<p>By 2025, municipalities have access to funding and capacity building for regional approaches to adaptation</p>	<ul style="list-style-type: none"> ■ Federal departments and representatives should leverage their unique positions to lead national and regional or risk-based conversations on collaborative approaches that bring together regional actors to break down jurisdictional silos and generate action ■ Support the development of a learning network where local governments and First Nation, Métis, Inuit, urban and rural Indigenous communities, and other private and public organizations can share knowledge and support regional and/or risk-based collaboration ■ Support the development of formal arrangements and innovative approaches, for example through creation of IPCA's or funding regional adaptation projects through programs like DMAF or GMF. ■ Support the development of regional disaster response networks to better support small, rural, and remote communities during and immediately after a disaster event
<p>23. Monitoring and evaluation: Support ongoing monitoring, evaluation and progress reporting on the implementation of the National Adaptation Strategy and its Action Plan and provide opportunities for regular feedback</p>	<p>By 2023, following the release of the NAS, a process is established to report back on progress and impact</p>	<ul style="list-style-type: none"> ■ Establish measurement targets and indicators that will feed into all funding and support structures established through the NAS ■ Ensure transparency and accountability in progress reporting, including progress on mitigating risks to vulnerable populations ■ Allow for flexibility in the targets and indicators used depending on the community(s) involved. For example, targets and indicators for IPCAs should be Indigenous-led

NAS implementation

As identified in FCM's report on the cost of adaptation, it will require a significant investment to avoid the worst impacts of climate change on Canadians. That investment, a minimum of \$5.3 billion annually, cannot be the sole responsibility of the federal government, nor can it fall on the shoulders of municipal governments. Just as it will take a whole-of-society approach to implement the NAS, it will also take a whole-of-society approach to finance it.

Funding investments from federal and provincial governments can have an immediate impact in ensuring that the momentum and progress on adaptation is sustained and, even more importantly, enhanced:

- Investment through established federal programs such as DMAF or the NIF can support those communities with ready-to-go adaptation projects
- Investments in established capacity building programs, such as FCM's Green Municipal Fund, or reinvestments in completed programs, such as FCM's Municipal Climate Innovation Program, can ensure municipalities are progressing from risk assessment to adaptation project implementation
- Investments and match-funding by provincial and territorial governments can further support local and regional actions
- Investments in research and development of innovative financing mechanisms can integrate and capitalize on private sector resources

Conclusion

The overarching goal of these recommendations is to ensure that municipalities have capacity and support for all phases of the adaptation project lifecycle: data, assessments, planning, implementation, maintenance, and governance. We know that we need urgent action to protect our communities from the impacts of climate change and municipalities are where much of the critical work of adaptation will be done. We need to be ambitious, and we need to work together.

Appendix

FCM's guiding principles for the NAS

To develop our recommendations and short-term actions, FCM first set out a series of six guiding principles that shaped our work on the NAS from the beginning. The 23 short-term actions that follow are guided by the following principles:

Guiding principle 1 — Shared path to climate resilience with Indigenous Peoples

Climate resiliency requires the rebuilding of relationships both with the land but also with each other. Supporting Indigenous-led conservation as part of a National Adaptation Strategy is critical if we are to make meaningful progress on the path of reconciliation, but it is also critical for conservation and adaptation measures to succeed in Canada. According to the Indigenous Circle of Experts, Indigenous Protected and Conserved Areas (IPCAs) or similar conservation areas are “lands and waters where Indigenous governments have the primary role in protecting and conserving ecosystems through Indigenous laws, governance and knowledge systems. Culture and language are the heart and soul of an IPCA”. As noted in their report, *We Rise Together*, IPCAs first and foremost benefit Indigenous communities but they also benefit all Canadians by protecting more lands and waters resulting in greater biodiversity, improved human health and mitigation of climate change risks. A national adaptation strategy cannot succeed if the path is not shared with and guided by Indigenous peoples.

Guiding principle 2 — Equity based approach to ensure climate resilience is enhanced for all people, particularly those most impacted by climate change.

Certain communities and populations will be more vulnerable to the impacts of climate change compared to others because of their income, housing, or other factors. The IPCC 6th assessment notes that cities are hotspots for global warming, where heatwaves are set to intensify. For those who cannot afford suitable housing or air conditioning, the increase in heat waves could be deadly. BC's heatwave this past summer is a recent example of this, where it was determined that of the more than 800 sudden deaths recorded during that week 619 were a direct result of extreme temperatures and most of the deaths occurred in homes that had inadequate cooling systems. The benefits that result from adaptation efforts, such as planting trees in areas impacted by urban heat island effects, can also be unequally distributed if equity considerations are not included. A national adaptation strategy will require a just approach that integrates equity considerations into climate adaptation measures.

Guiding principle 3 — Promote nature-based solutions for enhanced community resilience, reduced GHG emissions, and improved health and well-being

A recent report by Nature United demonstrated that Natural Climate Solutions can reduce Canada's emissions by up to 78 megatonnes of CO₂e annually in 2030, which is equivalent to 11% of Canada's current annual carbon emissions. By better protecting, managing and restoring our natural areas and natural infrastructure we can not only support the national goal of achieving net-zero emissions by 2050, but also reduce the impact and cost of natural disasters, improve and conserve biodiversity, and enhance the health and well-being of communities.

Guiding principle 4 — Enhance capacity of local governments to assess, plan and implement climate resilient decision-making, asset management and social programming through better data, monitoring, and partnerships at the local level

A national adaptation strategy must support local adaptation strategies, which are based on local data and science. Communities need comprehensive local climate risk assessments in order to understand their unique climate change risk and vulnerabilities and the unique solutions they have available to them to address those risks. And no single municipality, group, or organization can implement successful adaptation actions on their own. Adaptation requires the concerted efforts of neighboring communities, industry, businesses, private landowners, and Indigenous communities in order to collect and analyze the data and determine the best adaptation measures for their region.

Guiding principle 5 — Create a diverse and inclusive working group to continually monitor, assess, and report back on adaptation indicators and progress

Although many nations globally are adopting national adaptation plans or strategies, there is less success in monitoring the implementation and impact of those plans or strategies. Creating an independent group of diverse members representing all orders of government, not-for-profits, private sector, industry, academia and Indigenous communities will ensure that the NAS is updated regularly to adjust to changing needs, information, and building upon successes.

Guiding principle 6 — Align adaptation and disaster risk reduction efforts from the local to national level

One of the main policy and implementation issues for adaptation is the tenuous link between climate adaptation policy networks both at the national and local levels. While these two areas of disaster risk reduction and adaptation share a similar focus on reducing the impacts of climate related events, they are often not coordinated through policy or funding frameworks. Improving the link between these two areas could help achieve greater impact and greater efficiencies, both financially and administratively.