

Minister of Housing,
Infrastructure
and Communities



Ministre du Logement,
de l'Infrastructure
et des Collectivités

Ottawa, Canada K1P 0B6

February 28, 2024

Peter Schiefke
Chair of Standing Committee on Transport, Infrastructure and Communities
House of Commons
Ottawa, Ontario K1A 0A6

Dear Peter Schiefke:

The Government of Canada welcomes the opportunity to respond to the Standing Committee on Transport, Infrastructure and Communities' fifteenth report entitled, *Building a More Climate Resilient Canada*. As extreme weather events and slow-onset hazards continue to cause damage to communities across Canada, the Government of Canada recognizes the urgent need to increase climate resilience.

This year was a significant milestone for adaptation in Canada, with the release of Canada's first National Adaptation Strategy (NAS), which presents a whole-of-society approach to reducing risk and building climate-resilient communities. The NAS highlights the need to expand traditional asset-based approaches and infrastructure management to a systems-based model that situates assets within, and across, infrastructure systems. This approach recognizes the critical services that infrastructure provides, such as transportation, utilities, and communications, as well as the potential for cascading risks and impacts.

The Government of Canada Adaptation Action Plan (GOCAAP), released alongside the NAS, committed \$643 million to scale up actions for climate-resilient infrastructure. The resilient infrastructure investments included additional commitments to the Disaster Mitigation and Adaptation Fund (DMAF), for the development of climate-informed codes, standards and guidance, and new commitments to develop a publicly available Climate Toolkit for Infrastructure. The GOCAAP also committed \$530 million to expand the Green Municipal Fund to support community-based adaptation initiatives and capital projects, building on its climate change mitigation work.

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In addition, the GOCAAP committed to long-term investments of up to \$543 million to enhance disaster resilience. This included establishing the Centre of Excellence for Wildland Fire Innovation and Resilience; expanding the Flood Hazard Identification and Mapping Program to conduct flood hazard mapping for high-risk areas; standing up a low-cost flood insurance options for households at high-risk of flooding; creating a new Flood Risk Awareness Portal with publicly accessible information on flood exposure; and modernizing the Disaster Financial Assistance Arrangements (DFAA) Program.

These investments complement the commitments made across the other key areas of the NAS: health and well-being, economy and workers, and nature and biodiversity.

To build a more resilient Canada, the Government has made significant investments to advance the climate resilience of infrastructure. I am pleased to outline in greater depth how the Government of Canada's infrastructure investments support the report's recommendations. The following response uses a thematic approach that responds to the recommendations under three sections that largely mirror those of the report. They are:

- *Water and Wastewater Systems* (recommendations 1 to 3) that touches on the Government's efforts to advance climate-resilient water and wastewater systems, addressing recommendations on responding to needs and enhanced cooperation for international watercourses.
- *Climate Resilient Infrastructure* (recommendations 4 to 7 and 10 to 12) that covers the Government's investments related to climate resilient infrastructure and climate adaptation. The response specifically highlights the NAS, signature funding programs, including the DMAF, flood-related initiatives, and the forthcoming National Infrastructure Assessment.
- *Infrastructure Program Review* (recommendations 8 to 9) that highlights the Government's review of current infrastructure programs and the evolution of the Climate Lens to implement climate resilience requirements in new infrastructure funding programs, as directed by the NAS.

Water and Wastewater Systems (Recommendations 1 to 3)

The Government of Canada agrees with the priorities outlined regarding water and wastewater systems, including the importance of supporting and enhancing modernized water and wastewater systems in communities of all sizes and cooperation for international watercourses, and acknowledges the recommendation for permanent water and wastewater funding.

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The Government of Canada has been a longstanding and steady partner in funding water and wastewater infrastructure, supporting the sustainability, efficiency, and cost-effectiveness of water systems. Since its inception in 2002, Infrastructure Canada (INFC) has allocated over \$8 billion to more than 7,000 water system improvement projects across the country, including investments in aqueduct systems. Investments include nearly \$3.4 billion for drinking water and over \$5.4 billion for wastewater. To support communities of all sizes, INFC has tailored its funding to better support small and rural communities, with over 65% of water and wastewater projects funded under the Investing in Canada Infrastructure Program located in communities of 5,000 people or less. In addition, since 2016 Indigenous Services Canada (ISC) has committed over \$5.6 billion for First Nations through the ongoing Capital Facilities and Maintenance Program. The funding supports First Nation projects to build and repair water and wastewater infrastructure and support effective management and maintenance of water and wastewater systems on reserves. Other key funding mechanisms include the Canada Community-Building Fund, the Green Municipal Fund, and the Canada Infrastructure Bank, which all support water investments.

The Government of Canada recognizes that communities are facing complex and significant pressures from the intersecting challenges of growth, climate change, and providing efficient and reliable water and wastewater services. There is growing need to maximize the value of investments in the context of responding to immediate needs, while building for the future – this means thinking about water systems, and the services, proactively and strategically alongside other key priorities and infrastructure systems. In 2022, INFC announced federal funding of over \$214 million through the DMAF to the City of Iqaluit to improve the water supply and distribution systems. The new and upgraded infrastructure will be designed and built to mitigate current and future impacts of climate change.

Moving forward, and in consideration of housing needs, Budget 2022 signaled the Government's intention to improve flexibility within federal infrastructure programs to tie access to funding to actions that increase housing supply where possible.

Communications for Watercourses Bordering International Boundaries

Shared waters comprise more than 40% of the Canada–United States border. The International Joint Commission (IJC), established under the *Boundary Waters Treaty of 1909*, is the primary mechanism for cooperation and coordination in managing shared waters and for investigating issues of mutual interest related to those waters. The IJC is responsible for approving projects that affect water levels and flows across the boundary, and for investigating transboundary issues and recommending solutions. Environment and Climate Change Canada (ECCC) employees participate on the international water management boards set up by the IJC. Other Board members can include federal, provincial, state, municipal, Indigenous organizations, non-governmental organizations, academia, and industry representatives.

By bringing together implicated riparian interests, the IJC provides mechanisms for information sharing, data harmonization, and collaboration within transboundary watersheds which foster cross border engagement at different levels of government.

Climate Resilient Infrastructure (Recommendations 4 to 7 and 10 to 12)

The Government of Canada agrees with the importance of enhancing infrastructure resilience. In 2023, there were record-breaking wildfires, floods, hurricanes, tornados, and hailstorms that resulted in damage to critical and community infrastructure, including roads and railways, electrical and telecommunications infrastructure, public buildings and homes, disrupting the delivery of essential services and highlighting the need to increase resilience.

Increasing Resilience to Natural Hazards

The Government of Canada plays a leadership role in building climate resilient infrastructure by moving knowledge to action through strategic investments that progress through a ‘value chain’ approach. The sequencing generates climate change data and information that support the creation of guidance, standards, and codes to inform integrated planning capacity and shape project decisions for data-informed capital investments and long-term resilience.

Key programs along the value chain include:

- The Research and Knowledge Initiative that has helped Canadian communities better understand their public infrastructure needs, challenges, and opportunities – with seven resilience-focused projects, such as filling knowledge gaps on natural infrastructure, developing models to support infrastructure planning and emergency response to wildfire, and making coastal hazard information and floodplain maps broadly-available.
- Through the Climate Resilient Built Environment Initiative and the Standards to Support Resilience in Infrastructure Program, the Government has committed over \$160 million to integrate climate resilience into national guidelines, standards and codes, and develop future-climate design data in priority areas, such as flooding, extreme heat, and nature-based solutions. These investments have so far delivered: 65 climate informed codes, standards, guidance, and decision-support tools, updates to three major Canadian Codes (buildings, bridges, and electrical), and future-climate design data in 680 locations across Canada.
- The recently announced Climate Toolkit for Infrastructure that has committed \$94.7 million over five years to provide infrastructure decision-makers and professionals with the necessary supports and services to incorporate climate change risks in their infrastructure decisions and assessments. The platform will provide access to key climate-hazard and risk information and offer tailored tools, guidance and learning resources to be readily used.

To complement the mainstreaming of climate-informed decision-making and integrated planning, the Government of Canada also invests directly in capital projects:

- INFC's DMAF is Canada's signature funding program for advancing climate resilient infrastructure, representing a \$3.86 billion investment. Through the DMAF, communities can better prepare for and withstand future climate change impacts and natural disasters, including droughts and floods; prevent infrastructure failures; and protect people across Canada. The DMAF encourages communities to submit project proposals that best address the natural hazard risk for their community and welcomes the highest adoption of guidelines, codes and standards. As of December 2023, 90 projects have been approved and announced under DMAF for a total program commitment of \$2.41 billion for built and natural infrastructure projects.
- Through INFC's Natural Infrastructure Fund (NIF), the Government announced \$200 million to increase the use of natural and hybrid infrastructure throughout Canada – recognizing the value of green and blue spaces and the effectiveness of natural infrastructure solutions in building climate resiliency. As of December 2023, the NIF has announced four projects for a total federal commitment close to \$46 million. Additional project announcements are forthcoming.
- ISC's First Nation Infrastructure Fund and Crown-Indigenous Relations and Northern Affairs Canada's First Nation Adapt program and Climate Change Preparedness in the North program provide resources to address critical infrastructure needs for First Nations on reserve, and Indigenous communities, including in the North, respectively.

While building climate-resilient infrastructure proactively is critical, as the frequency, magnitude, and impacts of events grow, communities continue to need post-disaster support:

- The DFAA is the program through which Public Safety Canada provides financial support to provinces and territories following a disaster. The DFAA plays a critical role in the response to, and recovery from, large-scale natural disasters in Canada. Public Safety recently undertook a robust review of the program to ensure that it would continue to remain relevant and sustainable to meet the needs of provinces and territories post-disaster and a modernized program with greater focus on rebuilding with resilience will be launched in 2025.

In considering other Government of Canada levers, the Greening Government Strategy, which applies to real property, fleet, and procurement activities across all core government departments and agencies, commits to minimizing disruptions and damage to its assets, services, and operations related to the impacts of climate change. This will help ensure that communities can continue benefitting from infrastructure services in the context of climate impacts and support climate resilience.

The Government will continue to seek additional opportunities to accelerate the implementation of climate resilient infrastructure, while also recognizing the need for private sector investment and alternative financing solutions to accelerate adaptation solutions and close the financing gap.

Natural Infrastructure

In Canada, a growing number of local governments and non-government organizations are turning to natural infrastructure as cost-effective solutions to manage hazards and climate risks, that also provide co-benefits to surrounding assets and households, such as enhanced health and well-being, improved environmental quality, and reduced greenhouse gas emissions. Building on the NIF, the Government of Canada has also invested in guidance including codes, standards, guidelines, tools, and best practices on valuing, implementing, and managing natural infrastructure. Examples of guidance include National Standards of Canada for the design and construction of bioretention systems; planning, design, operation, and maintenance of wastewater treatment in northern communities using lagoon and wetland systems; and guidelines for nature-based solutions for managing flooding and erosion.

Moving forward, the Government of Canada has made several commitments to encourage investment in natural assets; for instance, one of the objectives in the NAS is to accelerate the use of nature-based solutions to increase resilience and maximize co-benefits. The Government is also developing a 2030 National Biodiversity Strategy to advance the uptake of natural and hybrid approaches for achieving the new global goals and targets adopted in the Kunming-Montreal Biodiversity Framework in December 2022. In the Greening Government Strategy, the Government committed to maximize the use of natural infrastructure and other nature-based solutions to protect physical assets within federal real property.

Targeted Initiatives for Flood-related Activities

Flooding is Canada's costliest natural disaster with damages continuing to rise as a result of climate change, demographic shifts, and further development in high-risk flood areas. Budget 2023 announced funding for three initiatives related to disaster recovery and flood resilience. These include: 1) flood insurance; 2) a new flood risk portal for Canadians; and 3) establishing federally identified flood risk areas across the nation to guide federal infrastructure investment decisions. These investments complement the Flood Hazard Identification and Mapping Program, which collaborates with provinces and territories and other stakeholders to develop flood hazard maps for higher risk areas to help decision-makers inform land-use planning and climate adaptation.

The Meteorological Service of Canada within ECCC also provides environmental monitoring, prediction, and warning services. These services are critical to anticipate, manage, and adapt to risks created by rapid onset hazards. The Meteorological Service of Canada is the authoritative voice in informing the public, emergency management organizations, and public health authorities ahead of severe and extreme weather using various traditional and digital dissemination channels, such as radio, television, and social media.

Together, these initiatives increase the resilience of communities across Canada in the face of the rising frequency and costs of flood events through evidence-based decisions.

Comprehensive Assessment of Infrastructure

In implementing the NAS, the Government of Canada is developing bilateral action plans with provinces and territories to scale-up and better coordinate adaptation efforts across the key areas of the NAS, while respecting the jurisdiction and responsibilities of different orders of government and rights holders. These bilateral action plans will help substantiate and advance shared adaptation priorities, which may include identification of areas most at-risk and infrastructure-specific solutions.

Canada's first National Infrastructure Assessment, once established, will also serve as a foundational tool for infrastructure decision-makers to support identification of needs and priorities in the built environment.

To further support informed investment decisions, the Government of Canada continues to work on projects to develop open national datasets, related to environmental equity, housing and transportation affordability, and open databases of critical infrastructure locations. Through the mapping of major infrastructure assets, the Government aims to identify at-risk infrastructure due to a variety of factors, such as land usage, environmental and climate risks, accessibility, and economic factors.

Communications Resiliency

The Government of Canada recognizes the importance of resilient and interoperable communications in emergencies, including extreme weather events. The development of an interoperable public safety communications systems is a priority outcome of the *Emergency Management Strategy for Canada*¹, which aims to strengthen the resilience of Canadian society by 2030. The initiative also supports the broader objectives of the Telecommunications Reliability Agenda² to improve the reliability and resilience of Canada's telecommunications networks and strengthen coordinated planning and preparedness.

¹ Government of Canada. (2022, July 21). Emergency management strategy for Canada: Toward a resilient 2030. Public Safety Canada. <https://www.publicsafety.gc.ca/cnt/rsrscs/pblctns/mrgncy-mngmnt-strtg/index-en.aspx>

² Government of Canada. (2023, May 12). A Telecommunications Reliability Agenda. Innovation, Science and Economic Development Canada. <https://ised-isde.canada.ca/site/ised/en/reliable-telecom-services/telecommunications-reliability-agenda>

Infrastructure Program Review (Recommendations 8 to 9)

The Government of Canada agrees with the importance in regularly reviewing its suite of infrastructure programs and federal requirements, such as the Climate Lens, to apply lessons learned, reduce barriers to access, and address municipalities' infrastructure needs.

Program Review

To address evolving needs and improve programs, the Government of Canada reviews its infrastructure funding programs, applying lessons learned and ensuring they remain relevant. The Government recognizes that there is no one-size-fits-all solution for communities but, by working together, infrastructure programs can build the infrastructure that meets the diverse needs of communities across Canada – including for smaller, rural communities. In previous programs, and based on lessons learned, the Government of Canada offered increased capacity support and adjusted program parameters for smaller and rural communities, through its rural-focused programs such as the Rural Transit Solutions Fund and the Canada Community Building Fund. These programs helped to meet the distinct needs of these communities, offering flexible deadlines, and increased federal contribution rates.

In continuing to respond to the needs of smaller, rural communities, the Climate Toolkit for Infrastructure will support decision-makers by providing tailored tools, guidance and resources that are readily available. The Toolkit will reduce barriers to access to support the implementation of low-carbon, climate resilient infrastructure solutions. One of the key priorities for the Climate Toolkit will be to provide targeted supports to high-risk and lower-capacity communities. Moving forward, the Government intends to continue to undertake robust program reviews and improve infrastructure programming.

Climate Risk Assessment and Risk Reduction

The Government of Canada wants to ensure that infrastructure built today can withstand current and future climate change impacts, delivering on the NAS 2050 goal that “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.” Flexible and scalable resilience requirements are being established for all new programs beginning in 2024, building on the lessons learned from the Climate Lens. These requirements will include identifying risks, adopting risk reduction measures based on the latest codes, standards, and guidelines, and incentivizing natural infrastructure. The Climate Toolkit for Infrastructure will offer guidance for the implementation of resilience requirements.

To conclude, the Government of Canada thanks the Standing Committee on Transportation, Infrastructure and Communities for its work and study on how to improve Canada's climate resilient infrastructure. While substantial work to increase climate resilience in infrastructure systems is already being undertaken, the findings of your committee offer valuable insights in the development of programming going forward.

Sincerely,

A handwritten signature in black ink, appearing to read "S. Fraser". The signature is written in a cursive, flowing style.

The Honourable Sean Fraser, P.C., M.P.
Minister of Housing, Infrastructure and Communities