

August 31, 2018

Memorandum to the Standing Committee on Environmental Issues and Sustainable Development

UPDATE MEMO: Climate Adaptation and Disaster Mitigation Infrastructure Funding

EXECUTIVE SUMMARY

“Federal investment in climate change adaptation and disaster mitigation infrastructure” is being proposed as a key component of FCM’s 2019 federal election policy platform. See the memo on 2018-2019 priorities for this committee.

This memo provides an update on ongoing FCM research into the federal government’s role in investing in infrastructure to reduce the risk posed by climate change. The primary aim of the research is to identify a target rate for federal infrastructure investment to support an election ask for increased federal investment climate adaptation and disaster mitigation for municipalities.

DECISION HISTORY

- At the September 2017 Board of Directors meeting, the Standing Committee approved Federal Climate Change Policy and Programming as a 2017-2018 policy and advocacy priority, which identified the need for additional research to support the municipal role in achieving Canada’s climate change goals.
- At the March 2018 Board of Directors meeting, the Standing Committee received an [update](#) on proposed FCM climate change research, including proposal of a research project aimed at quantifying the cost of climate adaptation in Canada.
- At the September 2017 Board of Directors meeting, the Standing Committee on Community Safety and Crime Prevention [approved a set of principles](#) for the design of federal programs to support climate change adaptation.

BACKGROUND

- Municipalities are on the front lines of climate change in Canada. Municipal infrastructure is susceptible to chronic and acute climate risks, and protecting critical infrastructure from disaster events is an important determining factor in community resilience.
- Currently, the cost of climate change is being borne by all levels of government and all Canadian taxpayers. Analysis by the Parliamentary Budget Office has shown a marked increase in claims through the federal-provincial-territorial Disaster Financial Assistance Arrangements (DFAA) program and projects that this trend will continue as a result of climate change. There is a growing body of evidence that shows that proactive investments to reduce disaster risk can avoid costly damages and insurance claims (both public and private), creating a financial rationale for preventative action.
- The federal government has recently allocated significant funding to this issue, most notably through the \$2 billion Disaster Mitigation and Adaptation Fund (DMAF). Despite

responding to a number of FCM recommendations on program design, DMAF is meant to fund large (>\$20 million) infrastructure projects and will not likely address the needs of smaller, rural and northern municipalities.

- In July 2018, FCM contracted ICF Consulting Canada Inc. to undertake research on the future of the federal government's role in investing in resilient infrastructure, including by identifying a possible target rate of investment. A survey of available literature on resilient infrastructure investment was undertaken, including a jurisdictional scan, which assessed resilient infrastructure investment in comparable regions such as the United States, United Kingdom and member countries of the European Union, including Norway.

ANALYSIS

Findings from the jurisdictional scan highlighted detailed examples of federal infrastructure programs that support municipalities to adapt to climate change. Of particular interest to FCM are examples of programs in Alaska and Nordic European countries that have increased community resilience in the Arctic, as well as programs in the US, UK and Europe that support climate change adaptation in rural regions. The research provides useful comparisons of federal funding levels and frameworks for resilient infrastructure projects, comparisons of programs and delivery models, and initiatives and approaches aimed at addressing the climate adaptation needs of rural, remote and northern communities. Additionally, the scan returned useful information about government-funded buyout programs for high-risk properties located on floodplains in the United States, which included federal or state grant schemes to offset post-disaster relocation and land acquisition costs.

In particular, one study identified by ICF established a target rate of investment for industrialized countries for climate adaptation of 0.66 – 1.25% of GDP per year. As a percentage of Canada's GDP this works out to \$13-25 billion per year. Based on this formula, research suggests that parts of the world are currently underspending on resilience by at least 70%. However, it should be noted that this includes a wide range of interventions, both infrastructure investments and other programming, in all segments of the economy, not just public infrastructure. The literature on this topic continues to support a strong economic argument for investments in climate adaptation and disaster mitigation infrastructure. A 2018 study, conducted by the National Institute of Building Sciences (NIBS) in the United States, reviewed several thousand government-funded disaster mitigation projects and found evidence of 6:1 benefit-cost ratio for investments in resilience, meaning that every \$1 invested in the resilience, yields approximately \$6 in abated future disaster and climate change related costs.

Ultimately, however, the research suggests that it is not advisable to identify a national target rate of investment for Canada – such as “for every x dollars in infrastructure value, Canada should invest y dollars per degree of warming” – through comparisons to peer countries alone. The impacts of climate change are so local, and vary so much between regions, that national comparisons are very difficult to make. Further research is required to establish resilience cost estimates for a representative range of large and small communities in order to extrapolate a national target investment figure that is Canada-specific.

FCM staff will conduct Phase 2 of this research during fall 2018 and winter 2019. The research will continue to build on the evidence gathered in the Phase 1 by examining existing federal programs in Canada – including the Disaster Mitigation and Adaptation Fund (DMAF), the National Disaster Mitigation Program (NDMP), and the DFAA program – to determine current

allocations of federal funding for climate adaptation and disaster mitigation infrastructure. Most importantly, Phase 2 will conduct a “bottom up” assessment of the cost of climate change to municipalities and the investments that municipalities are making in public infrastructure to reduce climate risk (e.g. stormwater infrastructure, flood protection or investments to protect critical infrastructure). Drawing on information gathered through climate risk assessments funded by FCM’s Municipalities for Climate Innovation Program (MCIP), member surveys and interviews, the evidence gathered in this phase of the research will help substantiate an election ask calling for greater federal infrastructure investment.

POLITICAL CONSIDERATIONS

As noted above, this federal government is making significant new investments to support communities as they adapt to climate change. The government’s climate strategy, the Pan-Canadian Framework for Clean Growth and Climate Change, addresses both climate change adaptation and GHG mitigation. FCM has engaged substantially with political staff and departmental officials from Infrastructure Canada, Environment and Climate Change Canada and Natural Resources Canada to inform adaptation policies and programs, most notably making recommendations on the design of the Disaster Mitigation and Adaptation Fund (DMAF).

In comparison to the political division over carbon pricing and other policies put forward by the Liberal government to reduce GHG emissions, all of the major political parties have expressed a significant interest in reducing the risk posed by natural disasters and adapting to climate change, giving this policy proposal broad political appeal to advance within an election context.

SUPPLEMENTARY MATERIALS

There are no supplementary materials attached.

RECOMMENDATION

It is recommended that the Standing Committee on Environmental Issues and Sustainable Development receive this report.

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