



ASSOCIATION OF CONSULTING  
ENGINEERING COMPANIES | CANADA

ASSOCIATION DES FIRMES  
DE GÉNIE-CONSEIL | CANADA

**Submission to the House of Commons Standing Committee on  
Finance**

**Building Capacity:  
Infrastructure Investments to Help  
Communities, Businesses and Families  
Thrive**

**Submitted October 8, 2022**

## **ACEC RECOMMENDATIONS**

- 1. Invest \$10 million over the next five years to build capacity for municipal and First Nation infrastructure decision-making, including for climate change adaptation and mitigation and new, energy-efficient construction.**
- 2. Improve project outcomes and reduce delays and cost overruns in construction projects by expanding the use of Qualifications-Based Selection in federal procurement of engineering and architectural services.**
- 3. Ensure the delivery of the National Infrastructure Assessment to provide an integrated vision for the environment and economy.**

## INTRODUCTION

Canada's long-term economic and environmental success depends on building capacity that will lead to more sustainable and useful infrastructure assets in the future. The Canadian economy is undergoing significant transformation, which is not only a product of short-term disruptions but also a product of an evolving economy.

To address current and emerging challenges and opportunities, all levels of government, First Nations, and private infrastructure owners will need to plan, design and build new assets and refit existing ones. Over the coming decades, owners and operators of infrastructure and real property assets will be looking to create economic opportunity, improve energy efficiency, reduce carbon emissions and strengthen resiliency.

The Association of Consulting Engineering Companies-Canada (ACEC) believes that the federal government plays a vital role in ensuring infrastructure investments create economic opportunity, improve environmental sustainability and ensure public health and safety.

We envision a future where it is easier to build new infrastructure. Where all levels of government and First Nations are better connected and well-informed about the age, capacity, quality and purpose of infrastructure in communities across the country. Better solutions, significant life-cycle savings, and on-time and on-budget projects can be realized when procurement processes encourage more innovation.

The recommendations we propose will streamline decision-making for all governments by ensuring better information is available and that the right team is selected for the right project.

These recommendations also have the potential to significantly reduce costs for the federal government, and other infrastructure owners, by adopting established and proven procurement best practices.

Finally, they have the potential to reduce inflationary pressure while improving the productivity, competitiveness, and quality of life for all Canadians.

## RECOMMENDATIONS

**Invest \$10 million over the next five years to build capacity for municipal and First Nation infrastructure decision-making, including for climate change adaptation and mitigation and new, energy-efficient construction.**

While the federal government plays an important and necessary role in funding and delivering infrastructure, the municipal sector owns and operated over 60% of Canada's infrastructure assets. Yet they, as well as indigenous governments, often struggle with the capacity to pursue funding or undertake needed projects. ACEC recommends that the federal government invest in initiatives that provide a knowledge base and tools to grow and improve the capacity of municipalities and First Nations to make informed decisions on their infrastructure investments.

The federal government is in a unique position to lead a coalition of stakeholders to provide a “one window” source of state of industry data, best practices, and resources. This would help municipalities and First Nations to ensure that they are investing in the right infrastructure assets, that are planned, designed, constructed, operated and maintained, and managed to achieve the desired social, economic, and financial benefits to their communities. This includes the ability to reduce carbon emissions, mitigate both the causes and effects of climate change, and improve the resiliency of infrastructure – and by extension, the resiliency of communities.

This will require an investment of funding and time from experts, along with collaboration between government departments and involved stakeholders. It will deliver a substantial return on investment through more efficient, sustainable, and robust infrastructure in communities from coast-to-coast-to-coast. This investment would also help ensure public dollars invested in infrastructure go further through substantial life-cycle savings.

This approach to capacity building will help municipalities and First Nations to align their infrastructure investments with current and evolving needs by providing an accessible and current resource centre, focused on identifying and improving existing data, knowledge and best practices while adding new information for more modern, sustainable infrastructure.

To deliver this important resource, **the federal government should invest \$2 million per year, over the next five years** at Infrastructure Canada and the National Research Council to facilitate stakeholder engagement, review sources of currently available information and existing resources, identify knowledge gaps and needs, and design a program to provide convenient one-window access. Eventually, we envision a permanent program with regular reviews and evaluations to ensure continued improvements and updating.

An example where a similar program was successfully initiated by the federal government and its stakeholder partners is the *National Guide to Sustainable Municipal Infrastructure* (InfraGuide). This program was initiated by the federal government in 2001 to support sustainable design, construction, and management of municipal infrastructure. It was both a knowledge network and a process to provide municipalities access to case studies, best practices, and other important capacity-building resources. Unfortunately, funding for InfraGuide was discontinued in 2008, but the increased demands on municipalities and their infrastructure assets make a revitalized and updated InfraGuide or a comparable new program more relevant and necessary than ever.

InfraGuide was developed by the public sector for the public sector. From 2001 to 2008 it was a partnership between the Federation of Canadian Municipalities, the National Research Council, and Infrastructure Canada. It was supported by stakeholder associations and subject matter experts from both the public and private sectors who developed case studies, best practice reports, and other resources to give municipalities access to the best of Canadian knowledge and experience at no cost. Many InfraGuide documents are still available, allowing the government to update, expand and build upon this previous work

## **Reforming procurement: Why the planning and design of infrastructure is an investment to be leveraged – not an expense to be minimized**

ACEC applauds the government's recognition that infrastructure investments can have cascading social, economic and environmental benefits to Canadians and their communities. However, fully realizing this potential requires significant reform of public procurement. ACEC encourages the government to adopt Qualifications-Based Selection (QBS), a proven approach to the procurement of engineering and architectural services that encourages innovation and results in significant lifecycle cost savings for infrastructure assets. It also reduces delays and ensures better project outcomes.

The prevalent approach to procurement by most public agencies can conflict with the government's overarching policy objectives. Addressing issues such as climate change mitigation and resilience inherently requires an approach that considers costs and performance over the entire project lifecycle: planning, design, construction, operations and maintenance, and ultimately decommissioning/post-use of an asset.

Furthermore, cost overruns and project delays make construction more expensive for public and private sector infrastructure owners. At present, higher interest rates are increasing the costs of borrowing and the importance of reducing expenses has risen substantially. This is especially true for large, public sector infrastructure projects that are fundamental to Canada's productivity and competitiveness, as well as sustainability goals, over the decades ahead.

Engineering and other professional services typically account for only 6%-18% of the capital costs of infrastructure projects and 1%-2% of total costs over the asset's life cycle. Yet these services dramatically impact all aspects of the financial and operational success of infrastructure for decades.

QBS ensures long-lived public infrastructure benefits from being planned and designed by the team with the best combination of experience, resources, and vision to deliver what the community needs. This approach ensures the best possible return on investment over the long term while putting forward the best lifecycle plan for each new community asset. It is far superior to overweighting the importance of a project proponent having the lowest bid. Low-bid procurement models create natural disincentives to collaborative, innovative and thorough work in the design stage.

Therefore, to achieve sustainability, encourage innovation and realize life cycle savings across its infrastructure investments, the federal government should adopt and expand the use of the QBS process to procure engineering and design services on all federal infrastructure projects. A best practice published by the aforementioned InfraGuide recommended QBS as the preferred procurement method for professional services that plan and design infrastructure.

Recent research has also found that among project owners, 89% reported high or very high satisfaction with projects that used the QBS model, compared to 75% for non-QBS projects. Designers also gave QBS high marks, with 88% of QBS projects receiving a rating of high or very high. An NSERC-funded study from the University of Alberta found that the average design cost index of non-QBS projects was 27.2% higher than QBS projects. That same study found that QBS

projects saw a 50% reduction in project cost growth, and a 30% reduction in project schedule growth compared to non-QBS projects.

Engineering and architecture firms can help the federal government leverage infrastructure to achieve many of its policy goals while also achieving significant lifecycle cost savings by adopting QBS as its preferred model of infrastructure procurement over the decades ahead. While QBS procurement does not guarantee the lowest cost for the owner, it does ensure that the best team - based on experience and qualifications, with the best proposal and project fit - is selected to deliver the project design. The economic benefits of QBS would be substantial at the micro level on a project-by-project basis for the federal government, and at a macro level by improving outcomes across the construction sector.

### **Ensure the delivery of the National Infrastructure Assessment to provide an integrated vision for the environment and economy.**

The National Infrastructure Assessment has the potential to provide governments, First Nations, businesses, and workers with unprecedented predictability in planning to address local and national infrastructure needs over the coming decades.

“Building the Canada We Want in 2050” outlines the potential for the National Infrastructure Assessment (NIA). After its release, stakeholders like ACEC have provided feedback to ensure the governance model of the NIA and its consultative processes deliver the best possible outcomes for Canadians.

For years, both public and private sector organizations involved with infrastructure development have sought a long-term vision to guide prudent and predictable investment by the federal government. The NIA will remedy that challenge and overcome the “start and stop” cycles that drive productivity down between active infrastructure programs.

ACEC believes that the NIA will benefit the entire project team, including the extended supply chain, that plans, designs, builds, operates and maintains infrastructure. Predictability will enhance the ability of both public and private sector partners to make informed investments in the people, resources and technology necessary to deliver projects and operate assets. More importantly, Canadians that rely on our infrastructure will also benefit.

We recommend that budget 2023 ensure funding is available to establish the NIA and an independent, permanent and arms-length National Infrastructure Agency responsible for overseeing the NIA. This Agency would also be mandated to provide regular updates, monitoring, and progress reports and serve as a repository of best practices and industry expertise. While Parliament would remain ultimately responsible for the design and funding of infrastructure programs, an independent agency would ensure that public policy is built upon reliable data, relevant expertise, and objective review and measurement of progress.