

the professional body for  
whole life management of physical assets



Response sent by email to [infc.info.inf@canada.ca](mailto:infc.info.inf@canada.ca)

June 29, 2021

The Honourable Minister  
Catherine McKenna  
Infrastructure Canada  
180 Kent Street Suite 1100  
1100 Ottawa, Ontario K1P 0B6

Dear Ms. McKenna,

The Institute of Asset Management (IAM) Canada is pleased to provide a response to the Engagement Paper on the National Infrastructure Assessment and is ready to contribute to 'Building the Canada We Want in 2050'.

We applaud the Government's initiative to plan its infrastructure according to global best practices in asset management and would like to become a partner in defining a sustainable strategy to ensure a better quality of life for all Canadians. The IAM Canada represents Canadian asset owners and contributing professionals in municipal, provincial, federal, and private sectors, and is part of an international network of experts in the field of asset management.

#### **A framework for success**

In reviewing the engagement paper's three priorities, we believe the following will be important for success:

- ✓ **Planning** through value-based needs assessments considering both existing and new infrastructure
- ✓ **Designing, building, operating and maintaining** infrastructure to foster confidence of funders and other stakeholders in the investment strategy and execution of infrastructure sustainability and lifecycle management
- ✓ **Governing** through the establishment of partnerships among stakeholders and communities, leveraging the various innovative financial models

IAM Canada believes that a globally recognized, framework and associated tools, like the ones developed by the Institute of Asset Management, can be leveraged as the foundation to achieve Government's priorities. The IAM framework supports evidence-based decision-making in balancing risk, performance, and costs. It reflects the ISO 55000 standards that were developed by more than 30 countries around the world and have been recognized internationally (including UK and Australia) and adopted by governments, organisations, and society since 2004.

#### **The IAM Community is ready to do its part**

The diverse and international community of asset managers in the IAM are ready to contribute in an advisory role, in activating the 2050 Plan and providing our country with the infrastructure it needs and deserves.

With our best regards,

Handwritten signature of Bonnie Tam in black ink.

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# IAM Canada's Consultation Response to the Government's Engagement Paper on the National Infrastructure Assessment



June 2021

We applaud the creation of the National Infrastructure Assessment initiative and advocate the adoption of a framework that is founded on a lifecycle approach, value-based methodology, and considers both existing and new infrastructure. The Institute of Asset Management [1] Canada can assist in an advisory capacity for the development and implementation of a National Infrastructure Plan, to assess long-term needs, foster synergy between owners and funders, and determine innovative funding arrangements.

## Addressing the state of existing infrastructure

While the focus of the National Infrastructure Assessment initiative is understandably on creating new infrastructure capacity (and mitigating carbon impact), it should be noted that new infrastructure typically adds < 5% additional capacity each year. Significant risk and opportunity relate to existing infrastructure.

If existing infrastructure (and the new!) is not maintained and renewed in a timely manner, a significant proportion of the remaining 95% capacity and value could be lost. If the existing infrastructure base is left to decline through prolonged underinvestment, it requires significant investment to bring it back to a serviceable level; and there are examples of this which have been highlighted over recent decades, in various sectors.

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IAM Canada's specific contribution is to enable the activation of a framework that encompasses effective assessment, management and financing of existing infrastructure for the benefit of new infrastructure.

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## Canada's Infrastructure Report Card is alarming

The Canadian Society of Civil Engineers, the Federation of Canadian Municipalities and other organisations have shared their concerns. Some of the key findings of the 2019 Canadian Infrastructure Report Card [2] are cause for alarm:

- Nearly 40 percent of roads and bridges are in fair, poor or very poor condition, with roughly 80 percent being more than 20 years old.
- Between 30 and 35 percent of recreational and cultural facilities are in fair, poor or very poor condition.
- 30 percent of water infrastructure (such as watermains and sewers) are in fair, poor or very poor condition.

The current approach to investment in existing infrastructure is creating a growing deficit; it does not represent best use of scarce public funds and is not sustainable in the long term. Although Canada's Core Public Infrastructure Survey [3] is a step in understanding capabilities to improve the impact of infrastructure investments, current condition and performance data is still not sufficiently comprehensive, consistent and reliable to help reduce risk, make optimal decisions regarding maintaining, rehabilitating or replacing existing infrastructure, and develop solid strategic financial plans.

The IAM has supported organisations in developing financial decision-making processes emphasising:

- strong leadership, and social/ethical responsibility,
- assurance to potential funders that the infrastructure will generate value,
- alignment from all parties to a common framework.

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IAM Canada suggests that developing a National Infrastructure Plan requires a holistic and balanced approach that is based on a common framework for new and existing infrastructure in order to address all three priorities set by the Canadian Government.

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## Value from National Infrastructure

Infrastructure is vital to the country's prosperity and quality of life. Infrastructure is a catalyst for renewal/regeneration of cities and regions, connecting jobs and homes, addressing regional and social imbalances and promoting sustainable communities. **Government has an opportunity to view all national infrastructure as an asset from which the nation obtains value over the long term.** This requires a change in mind-set from a focus on the initial, capital cost and provision of infrastructure to the purpose and need for infrastructure, how this is provided and the value it provides to the nation. The National Audit Offices of the UK, Australia and New Zealand are considering a value-based approach to their assessments rather than a purely cost based one.

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A **value-based asset management** approach is founded on the ability to develop evidence-based, long-term, asset lifecycle investment forecasts for infrastructure portfolios. The approach provides a basis for transparent, robust, prioritisation decision-making. The IAM supports value-based asset management approaches and has extensive experience supporting their development.

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## Achieving socio-economic-environmental outcomes with optimized resources

There is inevitably a limit to available funding, as indeed there is a limit to the capacity of industry to carry out works or to the disruption that can be tolerated during the implementation of infrastructure work. That naturally leads to a need to prioritise across the whole asset base to balance the competing aspects of asset performance (value generation), costs and risk. This prioritisation must align with stakeholders' (customer/shareholders) priorities. In Canada, since over 60% of infrastructure is principally owned by municipal and provincial governments, we understand the need to create coordination between funders (public or private) and owners.

It is also important that investment in infrastructure is targeted towards achieving specific socio-economic-environmental outcomes on a long term, sustainable basis. This will ensure that the right mix and integration of infrastructure systems (e.g., housing, transport, utilities, clean energy systems, parks) are selected to deliver the required outcomes.

The conventional silo-approach of creating infrastructure on a piecemeal basis, with business cases for identified schemes/projects, has failed to deliver the predicted business case benefits. A national framework presents the opportunity to standardize, assess, integrate and prioritise infrastructure needs across all infrastructure types. The IAM can support and inform robust methodologies to realize this goal.

## Benefits of long-term thinking

Therein lies part of the challenge for Government. With a relatively short period in office for each elected Government (compared to the life of the National Infrastructure), there is a risk of short-term delivery targets. This is understandable but is not the most appropriate way to achieve the desired outcome: long term value creation.

If we are to obtain a proper increase in the value provided by National Infrastructure, prioritisation must:

- be developed using a common approach (a framework),
- evolve independently of Government,
- clearly promote priorities for value generation,
- cut across silos within and across the various industries.

## Asset management competence and a risk-based approach

Achieving this long-term, risk-based approach, requires a change in the level of understanding of asset management in the leadership of many organisations and Government, both national and local. Good practice is emerging globally, a recent local example of which is the legally enforceable requirements for an asset management approach published by Ontario [4] in 2017.

The focus on long term value, and how the asset base contributes to this value is central to effective decisions about National Infrastructure. The process involves:

- understanding the risk of failing to meet objectives,
- understanding how to capitalise on opportunities to generate additional value over the long term and prioritising the allocation of resources accordingly,
- having the right person at the right place with the right competencies,
- governance without silos.

If we are to meet the needs of the nation now, in 2050 and beyond, we need a change in the way organisations think about the management of infrastructure to ensure the country gets most value from the investment being proposed.

Asset management is performed by people, and this is where we need to elevate competencies in Canada in managing infrastructure to create best value to our communities. We need to train and develop knowledge around the practice of asset management.

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IAM Canada can help individuals, and organisations, develop appropriate knowledge and understanding of how value can be achieved in a structured and evidence-based way.

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## An asset is for life

There is often a focus on reducing the cost of construction of a new asset to meet short term spending targets. While Value Engineering aims to reduce the costs of delivery of an appropriate asset, it also often results in assets with capabilities stripped out and/or little opportunity for capacity growth - and which face longer term costs due to additional maintenance and necessary asset improvements as the needs of society / government or businesses change.

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The IAM clearly supports the principle of achieving the right balance between costs, outcomes and risk in major projects, but this must consider the costs through the lifetime of the asset not just the project phase.

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The key point in asset management is that value is generated over the lifecycle of the asset and consequently the costs associated with the asset must consider the whole lifetime at the outset. This approach often leads to different decisions in the construction phase - and indeed may change the nature of the infrastructure constructed.

## Being in control

Organisations internationally have recognised the value of effective asset management and implemented formal approaches to ensure control of their activities and consistency of outcome. As a result:

- risk is better understood and managed,
- resources are targeted to where they are most effective and
- performance improves.

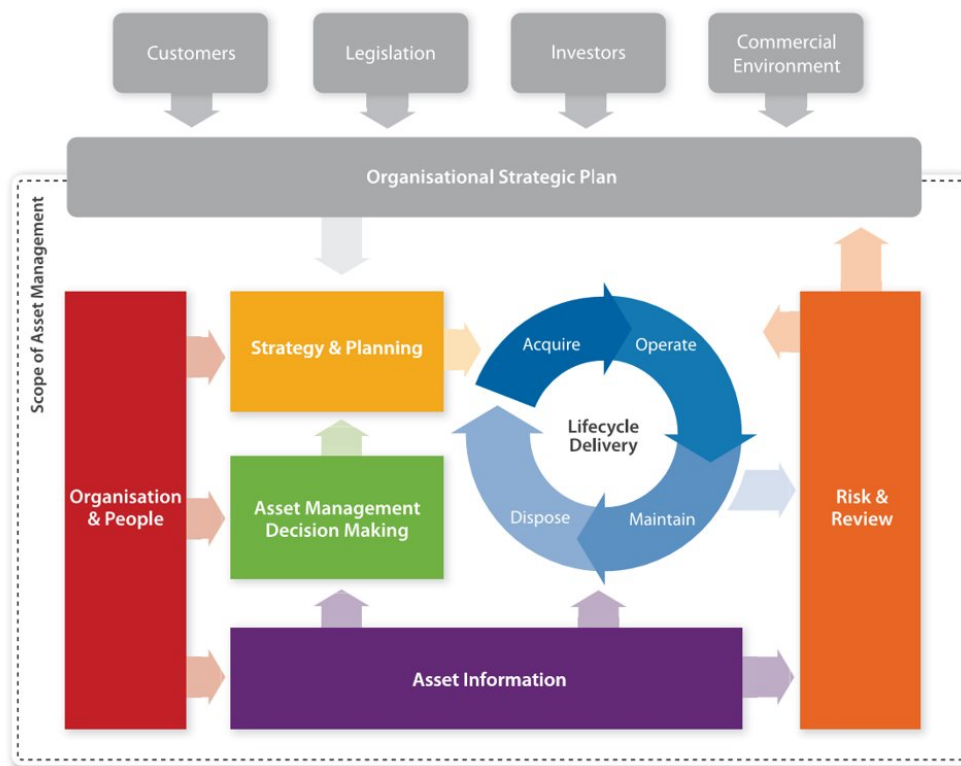
It moves organisations to a position where they do not simply follow the minimum legal and regulatory requirements, but actively consider the wider risks and the consequences for the organisation - should those risks materialise. The pandemic situation and climate change are good examples of the importance of having more resilient infrastructure.

## The IAM framework

Many organisations choose to align their practices with the requirements set out in ISO 55001 which specifies a framework for the establishment, implementation, maintenance and improvement of an asset management system. The fact that diverse organisations have implemented the IAM framework underlines the value and relevance of structured asset management to assets in both public and private ownership. In developing the National Infrastructure, and improving the stewardship of our Infrastructure, the National Infrastructure Assessment initiative should mandate specific asset management requirements, including those set out in the IAM framework, which is based on ISO 55001.

In summary, the framework covers 6 important components of asset management: strategy and planning, asset management decision-making, risk and review, asset information, lifecycle delivery, and organisation and people [5,6] as shown in the Figure below. The framework assists in:

- creating synergy in the governance model to eliminate silos,
- aligning the purpose of the organisation to its assets and the service delivery required,
- formalising the practice of asset management in organisations to better align governance and competencies, and
- promoting an evidence-based decision-making process.



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In reviewing the Engagement paper's three priorities and relating them to the proposed IAM framework (see Table), we believe the following will be important for success:

1. **Planning** through value-based needs assessments considering both existing and new infrastructure.
2. **Designing, building, operating and maintaining** infrastructure to foster confidence of funders and other stakeholders in the investment strategy and execution of infrastructure sustainability and lifecycle management.
3. **Governing** through the establishment of partnerships among stakeholders and communities, leveraging the various innovative financial models.

Priority	IAM Framework enabler
<b>1. Assessing infrastructure needs and establishing a long-term vision</b>	<p><b>Strategy and Planning</b> - Asset management strategy considering service levels, long term outlooks.</p> <p><b>Asset Information Strategy</b> - Setting standards and consistency in the creation of a Canada-wide asset register and associated condition.</p> <p><b>Decision-making</b> - Criteria for capital investment decision-making; lifecycle value realization; resourcing strategy.</p>
<b>2. Improving coordination among infrastructure owners and funders</b>	<p><b>Strategy and Planning</b> - Establishing policy and principles.</p> <p><b>Risk &amp; Review</b> - Risk management; contingency planning; sustainable development.</p> <p><b>Lifecycle Delivery</b> - Technical standards; asset creation/acquisition; maintenance strategies and delivery.</p> <p><b>Asset Information</b> - Asset information systems; data &amp; information management.</p> <p><b>Organisation &amp; People</b> - Competence management.</p>
<b>3. Determining the best ways to fund and finance infrastructure</b>	<p><b>Organisation &amp; People</b> - Procurement &amp; Supply chain management; Asset management leadership; structure, roles &amp; responsibilities.</p> <p><b>Risk &amp; Review</b> - Stakeholder engagement.</p> <p><b>Lifecycle Delivery</b> - Understanding full lifecycle costs of assets.</p>

### How IAM Canada can help

The diverse and international community of asset management professionals in the IAM are ready to do their part in activating the 2050 Plan and providing our nation with the infrastructure it needs and deserves. IAM Canada can help in an advisory capacity to:

- Develop a National Infrastructure Plan structured on a value-based methodology so all organisations concerned with national infrastructure (whether public or privately owned, existing or new) can demonstrate how value is to be generated over the specified lifecycle of the asset and at what cost, risk and performance to the owner, funder and the nation.
- Assist Government and organisations involved at any stage of the provision or management of National Infrastructure Assets adopt the principles set out in the framework (which is based on ISO 55000/1 /2), for example by:
  - piloting research projects in asset management with our international academic research network,
  - reviewing national infrastructure initiatives with a panel of experts,
  - training the workforce and developing the required skills for adopting the principles.

IAM Canada believes that a globally recognized, framework and associated tools, like the ones developed by the Institute of Asset Management, can be leveraged as the foundation to achieve Government's priorities. The IAM framework supports evidence-based decision-making in balancing risk, performance, and costs. It reflects the ISO 55000 standards that were developed by more than 30 countries around the world and have been recognized internationally (including UK and Australia) and adopted by governments, organisations, and society since 2004.

## **The IAM**

Established in 1994, the IAM has global network of over 30,000 people in more than 100 different countries and is headquartered in the United Kingdom. The IAM seeks to ensure the widespread understanding of asset management and the value of good practice for society. The IAM initiated the creation of the international suite of standards for Asset Management (ISO 55000 / 55001 / 55002). The introductory document, the Anatomy of Asset Management [5] is used worldwide. The knowledge projects, publications and services promote a considered approach to achieving long-term value from physical assets in every organisation, whether large or small, private, public, governmental or not-for-profit. The IAM and its Chapters collaborate with other organisations and professional bodies. The IAM supports individuals and organisations with professional development to foster and demonstrate capability in asset management.

## **References**

- [1] 'The Institute of Asset Management Ltd' is registered in England No. 5056259. Registered Office: 4th Floor, St Catherine's Court, Berkeley Place, Bristol, 858 18Q 'IAM Trading Ltd' is registered in England No. 4990747 and is wholly owned by The Institute of Asset Management Ltd. See website for more information, <http://www.theiam.org>
- [2] The 2019 Canadian Infrastructure Report Card, <http://canadianinfrastructure.ca>
- [3] Canada's Core Public Infrastructure Survey developed by Infrastructure Canada (INFC) and Statistics Canada. <https://www.infrastructure.gc.ca/plan/ccpi-ipec-eng.html>
- [4] Ontario Regulation 588/17 Infrastructure for Jobs and Prosperity Act, 2015 - Asset Management Planning for Municipal Infrastructure 13 December 2017, <https://www.ontario.ca/laws/regulation/r17588>
- [5] Asset Management - An Anatomy, Version 3, December 2015 (first published by the IAM in 2011)
- [6] What is Asset Management? <https://theiam.org/knowledge/introduction/what-is-asset-management>