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# An Asset Management Governance Framework for Canada



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A Committee of the National Round Table for Sustainable Infrastructure



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## PREAMBLE

This framework was developed by the National Asset Management Working Group (NAMWG). The Group evolved out of the recommendations respecting infrastructure in the report, 'Civil Infrastructure Systems: Technology Road Map' and now operates as a committee of the National Round Table for Sustainable Infrastructure (NRTSI).

NAMWG is a group of like minded individuals representing twelve organizations working in the area of asset management, urban planning, engineering and operations, municipal administration, political decision making and finance. The Group joined efforts to produce this document towards the establishment of a common framework for the various stakeholders in Municipal Infrastructure Asset Management.

Every municipality has a responsibility for ensuring safe and reliable infrastructure to the



public and providing a quality service to its citizens. The goal of this Asset Management Governance Framework is to help infrastructure stakeholders understand their roles in improving and enhancing the service by the municipalities by promoting better management techniques.

This Governance Framework is intended to assist in identifying the roles and responsibility plus the inter-relationships of the various governance levels involved including the users.

# INTRODUCTION

## *The need for change in managing civil infrastructure systems*

The world is changing. Traditional environmental, financial and social stability of communities are being challenged as never before. The magnitude and complexity of the challenges facing the physical and financial aspects of civil infrastructure systems that have supported the traditional lifestyle of Canadian communities is significant and complex. Historical management practices can no longer support the expected level of infrastructure services on a sustainable basis. The improved approach for managing our infrastructure to keep up to these changes is “Strategic Asset Management” (AM). The challenge is to make this change in our collective management approaches.



In recent years significant efforts have been made by individuals and groups across Canada to understand and develop these new Asset Management practices and tools. The results of these efforts and further developmental activities need to be integrated and implemented on a national scale which will be a challenge given the broad scope, complexity and multi-disciplinary nature of Asset Management and the diverse and disparate nature of infrastructure stakeholders.

## A NATIONAL VISION

In 2003 four national organizations representing infrastructure interests developed a national consensus on the future needs of infrastructure in Canada. The "Technology Road Map" (TRM) for Civil Infrastructure Systems, published in June of 2003 called for a national action plan and a national common vision to address the future needs, including the growing maintenance and replacement deficit of our infrastructure systems.



The National Asset Management Working Group (NAMWG) was created to address asset management strategies. This group, comprising a broad range of private and public sector representatives (infrastructure stakeholders), was established to develop a strategy and program for implementing the Asset Management recommendations of the Technology Road Map. One specific goal of the group was to develop a model national framework for the integrated management of municipal infrastructure assets. In so doing, the working group adopted the following vision statement:

### VISION STATEMENT

*In 2020, through collaboration of all orders of government, communities in Canada will have sustainable municipal infrastructure with the levels of service that support the community's health, safety, economic prosperity and quality of life.*

*Specifically, Canadian communities will:*

- *Make sound municipal infrastructure decisions based on full lifecycle analysis that are socially, environmentally and economically sustainable.*
- *Have eliminated the current infrastructure and deferred maintenance deficits and have access to sustainable funding mechanisms.*
- *Have improved overall resilience and adaptability of municipal infrastructure to the impacts of climate change, and*
- *Be recognized as leaders in innovative infrastructure technology and practice.*

# A DEFINITION OF ASSET MANAGEMENT

In the context of this vision statement the Working Group recommends the following definition of Asset Management be accepted:

*Asset Management is an integrated business approach involving planning, finance, engineering and operations to effectively manage existing and new infrastructure to maximize benefits, reduce risk and provide satisfactory levels of service to community users in a socially, environmentally and economically sustainable manner.*



# A NATIONAL ASSET MANAGEMENT GOVERNANCE FRAMEWORK

The National Asset Management Working Group has developed the National Asset Management Governance Framework. The Governance Framework focuses on 'why do asset management'. It is intended as a basis for asset management strategy development at the local level in Canada. The 'Governance Framework' specifically does not focus or address the 'how' to do asset management as there is no single best approach that meets all needs.

The 'Framework' confirms the holistic nature of asset management in the context of a broad scope of multi-disciplinary and integrated scale of activities. The 'Framework' includes a statement of the overall purpose of asset management as a new approach



for managing civil infrastructure systems, the key foundational principles that distinguish asset management from historical management practices, the basic types of activities involved in asset management and an identification of infrastructure stakeholders in the context of the scale, scope and activities associated with asset management. This framework identifies the 'why, what and who' of asset management. It does not identify or incorporate the 'how' to carry out AM strategy development and implementation.



## A NATIONAL ASSET MANAGEMENT GOVERNANCE FRAMEWORK – WHY?

The purpose of the 'Framework' is to establish a foundation on which any activity associated with asset management across Canada can relate to a common set of



operating principles to achieve an overall common objective. Infrastructure stakeholders are encouraged, therefore, to assess their role and mandate as stakeholders and, in the context of the framework, recognize how they contribute to the overall objective of sustainable communities. Through the framework, the diverse and disparate nature of the infrastructure community can be unified. It will take the

collective and integrated efforts of the entire community to address the significant infrastructure management challenges.

In reviewing this framework, it is important that stakeholders are able to agree with the statements that are made and to recognize the relationship their organization or group has within the overall stakeholder (infrastructure) community.

The acknowledgement and endorsement of this 'Framework' is an important step in moving towards integrating the collective efforts of all infrastructure stakeholders to address common strategic objectives.

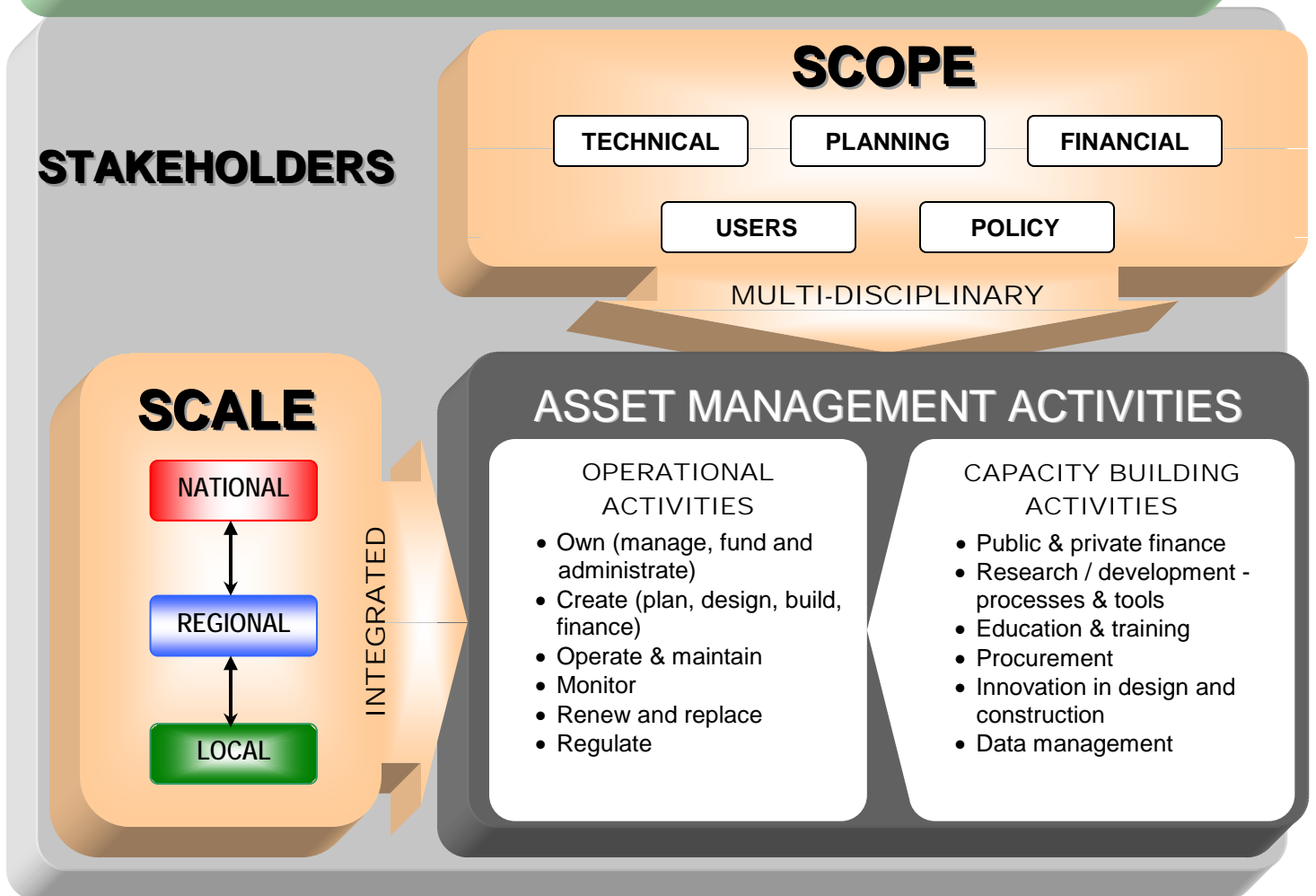


## Objectives of Asset Management

Sustainability of communities – building environmental, financial and social resilience and adaptability to face a changing world

## Key Principles for Managing Infrastructure

- ☑ Infrastructure needs to be managed as a valuable asset
- ☑ Assets need to be defined within the context of community goals for level of service
- ☑ Assets need to be managed on the basis of full lifecycle assessments
- ☑ Assets need to be managed as inter-connected systems considering the relationship between various categories of assets
- ☑ Asset management activities themselves need to be managed as integrated processes to optimize investment decisions





SCOPE of AM	WHO ARE THE STAKEHOLDERS?
<ul style="list-style-type: none"> <li>• AM is multi-disciplinary in nature</li> <li>• AM includes a broad spectrum of integrated components, including but not necessarily limited to:               <ul style="list-style-type: none"> <li>○ Technical / operations</li> <li>○ Planning</li> <li>○ Financial</li> <li>○ Policy</li> <li>○ Management / administration</li> <li>○ Customers / users</li> </ul> </li> </ul>	<p>Public and private agencies, organizations, associations and individuals with disciplines representing operational activities and supporting capacity building activities in the industry:</p> <ul style="list-style-type: none"> <li>○ governments (federal, provincial/territorial and municipal)</li> <li>○ private enterprises</li> <li>○ financiers</li> <li>○ engineers and technologists</li> <li>○ information technology practitioners and suppliers</li> <li>○ planners</li> <li>○ accountants</li> <li>○ contractors and construction trades</li> <li>○ manufacturers, fabricators and distributors</li> <li>○ researchers</li> <li>○ educators and trainers</li> <li>○ legal, regulatory and policy makers</li> <li>○ associations and professional societies</li> </ul>



ACTIVITIES	WHO ARE THE STAKEHOLDERS?
<ul style="list-style-type: none"> <li>• AM processes include operational activities and capacity building activities</li> <li>• AM “best practices” are being developed and documented through a variety of national initiatives. Core operational activities include: <ul style="list-style-type: none"> <li>○ Ownership (managing, funding)</li> <li>○ Creation (planning, designing, building, financing)</li> <li>○ Operations and maintenance</li> <li>○ Monitoring</li> <li>○ Renewing and replacing</li> <li>○ Regulating</li> </ul> </li> <li>• Capacity building activities support and enhance AM operational processes including: <ul style="list-style-type: none"> <li>○ Public and private financing</li> <li>○ Research and development analytical processes and tools</li> <li>○ Education and training</li> <li>○ Procurement</li> <li>○ Innovation and development in design, construction, operations and monitoring activities</li> <li>○ Data management (information technology)</li> </ul> </li> </ul>	<p><i>‘Operational activity stakeholders’</i> are basically the responsibility of infrastructure owners and the departments, agencies and individuals within these ownership groups:</p> <ul style="list-style-type: none"> <li>○ Federal government</li> <li>○ Provincial / territorial governments</li> <li>○ Municipal governments</li> <li>○ Public Authorities (i.e. airports and harbours)</li> <li>○ First Nations</li> <li>○ Private enterprises</li> </ul> <p>Core operational activities are also facilitated by a variety of technical and professional stakeholders:</p> <ul style="list-style-type: none"> <li>○ Financiers</li> <li>○ Planners</li> <li>○ engineers and technologists</li> <li>○ contractors and construction trades</li> <li>○ legal, regulatory and policy makers</li> </ul> <p><i>‘Capacity building stakeholders’</i> are key to support and improve the AM operational activities. They include:</p> <ul style="list-style-type: none"> <li>○ engineers and technologists</li> <li>○ information technology practitioners planners</li> <li>○ users</li> <li>○ accountants/financial analysts</li> <li>○ contractors and construction trades</li> <li>○ manufacturers, fabricators and distributors</li> <li>○ researchers, educators and trainers,</li> <li>○ Legal, regulatory and policy makers associations and professional societies</li> <li>○ politicians</li> </ul>



## SUMMARY

An Asset Management Governance Framework for Canada is recommended for acceptance to determine common operating principles in order to achieve common objectives of sustainable communities. The 'Framework' encourages the participation of all stakeholders in infrastructure management. The ultimate goal is enhancing the services offered by municipalities to Canadians at reasonable cost. In order to achieve satisfactory level services to today's Canadian communities, asset management should include but not necessarily be limited to integrated components such as technical, planning, financial, policy and management. It encourages life cycle 'cradle-to-grave' analysis and reporting. An Asset Management Governance Framework helps our communities define their leadership role in a changing world.



## Special thanks to the members of the NAMWG (Working Group as of February 2009)

### Chair

- Greg Chartier P. Eng. Canadian Public Works Association, City of Saskatoon

### Vice Chair

- Reg Andres P. Eng. Canadian Society of Civil Engineering, R.V. Anderson Associates

### Members

- Kevin Bainbridge, Canadian Networks of Asset Managers, City of Hamilton
- Claude Bruxelle, CERIU, Montreal, Quebec
- Marni Cappe, MCIP, RPP, Canadian Institute of Planners
- Peter Enslin P.Eng. Canadian Public Works Association CPWA, City of Calgary, (prior Co-chair)
- Guy Felio, P.Eng. Canadian Public Works Association
- James Ferguson, Geomatics Industry Association of Canada
- Adrian Franko, Ministry of Energy and Infrastructure (Ontario Government)
- Heather Fraser, Ministry of Energy and Infrastructure Renewal (Ontario Government)
- Roger Galipeau, Government Financial Officers Association, City of Montreal
- Glen Miller, Canadian Institute of Planners, Canadian Urban Institute
- Michael Mortimer, P. Eng. Canadian Standards Association
- Kwok Lui (Konrad) Siu, P. Eng. Canadian Public Works Association, City of Edmonton
- Isobel Tardiff , CERIU, Montreal, Quebec
- Wally Wells P. Eng. Canadian Public Works Association, Group Co-ordinator.
- Stan Westby, Government Financial Officers Association, City of Powell River,

### Observer

- Robert Pratt P. Eng. Infrastructure Canada

### Previous Representatives

- Paul Bates, Canadian Standards Association
- Aubrey Hope, Canadian Public Works Association CPWA, City of Winnipeg
- Jacques Internosica, CERIU, Quebec
- Joan Loughheed, Federation of Canadian Municipalities
- Tony Varriano, Director General, Issues Management, Infrastructure Canada (Co-chair)

## GLOSSARY

This glossary is provided for reference purposes only and is not intended to modify existing definitions in various federal, provincial and territorial laws in effect.

**Asset** – A tangible physical component part of the inventory of infrastructure. It includes but is not limited to roads, sidewalks, bridges, water and wastewater systems, buildings and recreational facilities. It excludes dynamic asset such as vehicle fleet and intangible assets such as intellectual property.

**Level of Service** – The level of service approved by a community of users based on affordability, needs and future demand.

**Life Cycle** – Life cycle costing is as an effective means to evaluate projects and measure costs over the life of an infrastructure asset. Life cycle costing enables the comparison of construction and material costs – such as asphalt versus concrete. It also enables a comparison of future investment requirements and the total cost of operating, maintaining, rehabilitating and replacing an asset.

**Risk-Based** – The concepts that sound Asset Management decision-making will be based on an understanding and evaluation of hazards, risks and vulnerabilities.

**Resilience** - The capacity of a system, community or society to adapt to disturbances by persevering, recuperating or changing to reach and maintain an acceptable level of functioning. Asset Management aims to strengthen the resiliency of communities to keep hazards from becoming disasters.

**Sustainable** – A sustainable approach is one that meets the needs of the present without compromising the ability of future generations to meet their own needs.

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