

The Infrastructure Deficit Defined — Is Asset Management the Solution?



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It has been said that we live in interesting times. That is especially true when it comes to the emerging challenge faced by municipalities in balancing their budgets while continuing to invest for the future. Talk about conflicting priorities. Elected officials are being pushed from all sides, hearing about the need for additional investment in social programs, increased protection with police services, enhanced funding to tackle potholes and more money for rehabilitating water and wastewater infrastructure to extend their useful life. And that is just the beginning.

Crisis, what crisis?

This crisis has been creeping up on us over the past several decades. Thought leaders promoting the concept of managing infrastructure in a sustainable way were met with ignorance of the problem and delay. Although it made sense at the logical level, the renewal plans for existing infrastructure

continued to take a back seat to what seemed to be more pressing issues at the time. Now the time has come.

The first Canadian Infrastructure Report Card was released in September 2012, a joint initiative by the Canadian Construction Association (CCA), Canadian Public Works Association (CPWA), Canadian Society of Civil Engineers (CSCE) and the Federation of Canadian Municipalities (FCM). The report card defines the municipal infrastructure deficit in 123 communities across the country. The results were then extrapolated across the country. In the four categories of municipal assets measured, municipal roads fared the lowest.

CANADIAN INFRASTRUCTURE REPORT CARD - HIGHLIGHTS

Physical condition assessment:

Drinking Water – Good, adequate for now
(15.4% rank condition of pipes fair or below)

Wastewater – Good, adequate for now
(30.1% rank condition of pipes fair or below)

Storm Water – Very Good, fit for the future
(23.4% rank condition of pipes fair or below)

Municipal Roads – Fair, requires attention
(52.6% rank physical condition fair or below)

The infrastructure report card defined the replacement cost for municipal roads, i.e. to bring the infrastructure ranked fair and below up to good, as \$91.1 billion or \$7,325 per household in Canada. The total value of the four types of municipal infrastructure (their replacement cost) is estimated to be \$538.1 billion.

Ontario takes the lead in asset management plans

In August, Ontario Infrastructure Minister Bob Chiarelli announced the launch of the first phase of the province’s Municipal Infrastructure Strategy. Asset management planning is a cornerstone of this strategy. This type of planning considers the long-term aspect of infrastructure and helps ensure communities get the greatest value from infrastructure investments.

The province included funding to assist smaller municipalities with asset management plans in the amount of \$60 million over three years, under its long-term infrastructure plan, Building Together. More information is available at www.ontario.ca/municipalinfrastructure.

The Ontario Coalition for Sustainable Infrastructure (OCSI) publicly supported the new strategy. “Good asset management is one of the keys to ensuring infrastructure is safe and sustainable,” remarked Carl Bodimeade, OCSI chair. “Well managed infrastructure is necessary to provide Ontarians with the level of service they require and expect.”

Three steps towards a solution

Through the collaborative work of the Coalition, OCSI suggests that the solution relies on a three-point approach.

Awareness: Increase awareness and recognize the extent of the problem. The recent adoption of the Public Servicing Accounting Board (PSAB) 3150 rules was a good first step, requiring municipalities to report the depreciated value of their assets in their financial reports, therefore quantifying the annual funds required to offset depreciation.

Communication: Communicate the problem to elected officials and the public. Articulate and demonstrate the value that the public receives through the various taxes they pay, how those are directly responsible for the infrastructure upon which our health, quality of life and economic competitiveness depend. And equally important, communicate the consequences if that infrastructure is not maintained.

Planning: With a better understanding of the problem, plan to address it. This will require integrated land use, engineering and fiscal planning. Take a longer range view of our communities and consider life cycle costing (as shown in Figure 1). Financial plans are required to provide the life cycle costs in a sustainable way.

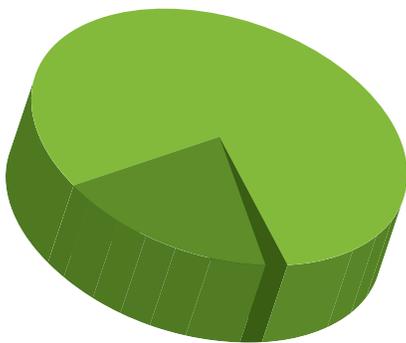


Figure 1: Asset life cycle costing (Source: Infraguide, 2006)

- O&M
- Engineering
- Construction

Get the right people at the table

Quoting from Albert Einstein, “Problems cannot be solved by the same level of thinking that created them.” The infrastructure deficit problem will be solved by expanding the conversation to include input from new perspectives.

“We need new planning paradigms that entwine our cities and regions, we need clarity about what it will cost to make the public infrastructure investments that we require, and we need to embrace new, creative financing models,” stated Jennifer Keesmaat, chief planner, City of Toronto, in an article in the *Globe and Mail* on September 10, 2012

OCSI recently expanded its membership beyond engineers and operation staff to include the voice of those making financial decisions.

Municipal Finance Officers’ Association of Ontario (MFOA) brings expertise related to the financing of municipal infrastructure, an essential component of the sustainability challenge faced by municipalities.

“When we learned about the mandate of OCSI, we recognized how important it would be to lend our voice, representing the financial aspects of infrastructure, to the experience of the well established organizations that build and operate the infrastructure,” stated Calvin Barrett, treasurer and past president of MFOA.

Contribute to the conversation

As the task of building infrastructure is expanded to include meeting the environmental sustainability challenge and incorporating

operations and maintenance into the solution, the voice of the engineer is essential in the conversation. Engineers

should seek opportunities to educate the public and municipal clients in the move towards achieving sustainability, as well as other levels of government.

Over the summer, the federal Minister of Infrastructure and Communities hosted roundtables to explore how future federal infrastructure programs could respond to specific challenges in various regions and sectors. OCSI’s submission to Minister Denis Lebel included these key messages:

Manage existing infrastructure: The need for existing infrastructure to be maintained and funded. Sustainable infrastructure is not only about building new infrastructure, it’s about managing existing infrastructure and getting good value. Effective management of existing infrastructure includes: operation and maintenance; repair,

rehabilitation and replacement; and disposal.

Determine life cycle costing: Strive to minimize life cycle costing when building new capital projects. Identifying savings on the operations and maintenance are significant because over time the annual operating costs far exceed the initial capital cost by 5:1. Low bid options and pricing often run counter to long-term planning.

Plan for asset management: Develop and use asset management plans that integrate technical, operational/maintenance and financial perspectives, which provide municipalities with necessary information to make informed decisions, in particular, related to affordable service levels.

Next steps

The sooner action is taken to make our infrastructure systems sustainable from environmental, societal (service level) and fiscal viewpoints, the less it will cost the citizens. The issue is on the table now that the infrastructure deficit is defined. Asset management planning is an essential aspect of the solution. The next step is to get the right people at the table, have a frank discussion and together seek sustainable solutions to adequately maintain municipal infrastructure and services in the long-term. ■

Carl Bodimeade, P.Eng, has a strong interest in the sustainability of infrastructure systems. He is a senior vice-president with Hatch Mott MacDonald and Chair of OCSI.

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The OCSI coalition comprises: Municipal Engineers Association, Municipal Finance Officers’ Association of Ontario, Ontario Good Roads Association, Ontario Public Works Association, Ontario Water Works Association and Water Environment Association of Ontario.