Canadian Infrastructure Report Card

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Canadian Infrastructure Report Card

The Infrastructure Problem

According to Statistics Canada, the Gross stock of core public infrastructure was $286.2 billion in 2007.

Figures from Budget 2015

- Average age of core assets down from a high of 17.8 years in 2000 to 14.7 years in 2013.
- Average age percentage of useful life decreased from 65.9 years in 2000 to 52.5 years in 2013.

Notes: Core public infrastructure (roads, bridges, transit, water, wastewater, culture, and sports and recreation infrastructure) owned by all levels of government including crown corporations and provincial agencies. Data for 2013 based on forecast.
Source: Statistics Canada, National Economic Accounts Division
Why Focus on Municipal Assets?

Most core public infrastructure was built in the 1950s, but Canada’s population has increased since then from 16 million to 35 million today.

Canada is also now more urbanized:
  - In 1951, 62 per cent of Canadians lived in cities
  - In 2011, 81 per cent lived in cities

These changes in demographics have shifted infrastructure ownership from higher orders of government to municipalities.
Changes in Ownership over Time

Infrastructure Capital by Jurisdiction, 1955-2007

Source: Statistics Canada, CANSIM matrix 031-0002.
What is the Canadian Infrastructure Report Card (CIRC)?

• First attempt to document the condition of Canadian municipal infrastructure assets.

• Create reliable tools to objectively assess primary condition data of core public infrastructure and chart the progress of renewal efforts over time.

• Data drawn from response received from 123 municipalities across Canada.
Purpose of the Report Card

✓ Assess the health of Canada’s municipal infrastructure
✓ Inform stakeholders about issues and trends
✓ Rigorous, repeatable process
Project Objectives

- Repeatable
- Defendable
- Raise awareness
- Factual

NOT advocacy
Project Steering Committee (PSC)

• Steering committee comprised of project funding partners:
  • Canadian Construction Association
  • Canadian Public Works Association
  • Canadian Society for Civil Engineering
  • Federation of Canadian Municipalities

• Steering Committee Role:
  • Develop the survey
  • Direct research efforts
  • Promote the project
Report Card Advisory Board (RCAB)

Chaired by the Canadian Network of Asset Managers

- Association of Canadian Engineering Companies - ACEC
- Canadian Association of Municipal Administrators - CAMA
- Canadian Automobile Association - CAA
- Canadian Construction Association – CCA (PSC)
- Canadian Council of Public-Private Partnerships - CCPPP
- Canadian Institute of Planners - CIP
- Canadian Network of Asset Managers – CNAM (Chair)

- Canadian Public Works Association – CPWA (PSC)
- Canadian Society for Civil Engineering - CSCE (PSC)
- Canadian Urban Transit Association – CUTA
- Canadian Water and Wastewater Association - CWWA
- Federation of Canadian Municipalities – FCM (PSC)
- Engineers Canada
- Transportation Association of Canada – TAC (Observer)
About the Ratings

• Very Good – Fit for the Future (80% or higher)
• Good – Adequate for Now (70% to 80%)
• Fair – Requires Attention (60% to 69%)
• Poor – At Risk (50% to 59%)
• Very Poor – Unfit for Sustained Service (50% or less)
What we Discovered

<table>
<thead>
<tr>
<th>Drinking Water</th>
<th>Wastewater</th>
<th>Storm Water</th>
<th>Municipal Roads</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>15.4%</strong> Good, Adequate for now</td>
<td><strong>30.1%</strong> Good, Adequate for now</td>
<td><strong>23.4%</strong> Very Good, Fit for the Future</td>
<td><strong>52.6%</strong> Fair, Requires Attention</td>
</tr>
<tr>
<td>15.4 percent of drinking water pipes rank fair or below</td>
<td>30.1 percent wastewater pipes rank fair or below</td>
<td>23.4 percent of stormwater pipes rank fair or below</td>
<td>52.6 percent of municipal roads rank fair or below</td>
</tr>
<tr>
<td>Replacement cost - $25.9 billion or $2,082 per household in Canada</td>
<td>Replacement cost - $39 billion or $3,136 per household in Canada</td>
<td>Replacement cost - $15.8 billion or $1,270 per household in Canada</td>
<td>Replacement cost - $91.1 billion or $7,385 per household in Canada</td>
</tr>
</tbody>
</table>

**NOTE:** "Replacement cost" means how much it would cost to bring all of the infrastructure at fair or below up to "good" condition.
Drinking Water

Rating: Good; adequate for now

- 15.4% of pipes were rated fair to Very Poor.
- 14.4% of water treatment facilities, reservoirs and pumping stations rated Very Poor.
- Cost to replace estimated at $25.9 billion or $2,082 per household in Canada.
Wastewater Collection & Treatment

Rating: Good; adequate for now

- 40.3% of wastewater plants, pumping stations and storage tanks are in Fair to Very Poor condition.
- Cost to replace estimated at $39 billion or $3,136 per household in Canada.
Lessons Learned From CIRC 2012

• Many municipalities do not have accurate information regarding the condition of their infrastructure assets.

• The situation is particularly acute within small and rural municipalities.

• Finite financial resources and limited staff time preclude a much more thorough, real-time evaluation of the state and performance of their physical infrastructure.
Asset Management Primer
Asset Management Primer

• Why an Asset Management Primer?
• Who is intended audience?
• How does it support CIRC?
Knowledge Management

• **Recommendation 1**

  *When identifying opportunities to improve asset management processes and knowledge within municipalities, it is necessary to document and store the information that is currently retained by experienced staff in some type of management system (spreadsheet, GIS/stand-alone database, or software application).*
Knowledge Management

• Recommendation 2

*Municipalities should develop governance structures as well as competencies and training strategies that support their asset management practices.*
Speaking a Common Language

**Condition grading system terms**
The condition grading system should align with the following definitions:

- **Very Good - Fit for the future.**
  Well maintained, good condition, new or recently rehabilitated.

- **Good - Adequate for now.**
  Acceptable, generally approaching mid stage of expected service life.

- **Fair - Requires attention.**
  Signs of deterioration, some elements exhibit deficiencies.

- **Poor - At risk of affecting service.**
  Approaching end of service life, condition below standard, large portion of system exhibits significant deterioration.

- **Very Poor/Critical - Unfit for sustained service.**
  Near or beyond expected service life, widespread signs of advanced deterioration, some assets may be unusable.

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**Don’t have condition information?** Using the amount of the estimated service life (ESL) remaining is a good starting point. Here is a guide that you can use:

<table>
<thead>
<tr>
<th>CONDITION GRADE</th>
<th>% OF ESL REMAINING ON ASSET</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Good</td>
<td>80-100%</td>
</tr>
<tr>
<td>Good</td>
<td>60-79%</td>
</tr>
<tr>
<td>Fair</td>
<td>40-59%</td>
</tr>
<tr>
<td>Poor</td>
<td>20-40%</td>
</tr>
<tr>
<td>Very Poor/Critical</td>
<td>&lt;20%</td>
</tr>
</tbody>
</table>

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Asset Management Plans

• Recommendation 3

Municipalities should develop an Asset Management Plan for the portfolio of assets required to support the delivery of services.
Managing Services by Managing Assets

• Recommendation 4

Municipalities should strive to understand the levels of service provided to their community and focus on managing assets, risks, and investment decisions to support service delivery.
The Future of Asset Management

• **Recommendation 5**

*It is essential for Municipalities to participate in CNAM, various country wide initiatives and forums such as the Canadian Infrastructure Report Card in order to improve their asset management practices. Sharing leading practices and enabling comparisons across jurisdictions is essential to the success of asset management programs in Canadian municipalities to lower the total cost of development and to accelerate its adoption.*
2015 Report Card
2015 Participation

NUMBER OF MUNICIPALITIES THAT COMPLETED AT LEAST ONE SECTION:
Total Municipalities: 119
Date: 03/04/2015

Percent of Province’s Population in Responding Municipalities

Canadian Infrastructure Report Card
## 2012 – 2015 Comparison

<table>
<thead>
<tr>
<th>Category</th>
<th>2012</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drinking Water Systems</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Wastewater Systems</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Stormwater Systems</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Municipal Roads</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Municipal Bridges</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Buildings</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Sports &amp; Recreation Facilities</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Transit Infrastructure</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
## 2012 – 2015 Comparison

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<thead>
<tr>
<th>Category</th>
<th>2012</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Municipal Roads</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of municipalities</td>
<td>118</td>
<td>111</td>
</tr>
<tr>
<td>Population (M)</td>
<td>16.1</td>
<td>23.0</td>
</tr>
<tr>
<td><strong>Potable Water</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of municipalities</td>
<td>86</td>
<td>102</td>
</tr>
<tr>
<td>Population (M)</td>
<td>13.5</td>
<td>21.9</td>
</tr>
<tr>
<td><strong>Stormwater</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of municipalities</td>
<td>68</td>
<td>107</td>
</tr>
<tr>
<td>Population (M)</td>
<td>11.7</td>
<td>23.3</td>
</tr>
<tr>
<td><strong>Wastewater</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of municipalities</td>
<td>84</td>
<td>104</td>
</tr>
<tr>
<td>Population (M)</td>
<td>13.2</td>
<td>23.1</td>
</tr>
<tr>
<td><strong>Municipal Buildings</strong></td>
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<td></td>
</tr>
<tr>
<td># of municipalities</td>
<td></td>
<td>105</td>
</tr>
<tr>
<td>Population (M)</td>
<td></td>
<td>22.7</td>
</tr>
<tr>
<td><strong>Sports &amp; Recreation facilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of municipalities</td>
<td>Not Applicable</td>
<td>102</td>
</tr>
<tr>
<td>Population (M)</td>
<td></td>
<td>22.6</td>
</tr>
</tbody>
</table>
Next Steps

• Survey is closed.
• Data is being analyzed...with the benefit of more detailed information.
• RCAB will be reviewing the results and developing key messages.
• Project Steering Committee to provide final approval by late July.
• CIRC to be released in September 2015