



CANADIAN INFRASTRUCTURE REPORT CARD:

Informing the Future



The report card is the continuation of a collaboration struck between the Canadian Construction Association (CCA), the Canadian Public Works Association (CPWA), the Canadian Society for Civil Engineering (CSCE) and the Federation of Canadian Municipalities (FCM). The 2016 edition also received support from the Canadian Urban Transit Association (CUTA) as well as the Federal-Provincial/Territorial Sport, Physical Activity and Recreation Committee. The information used in the study was collected using a voluntary survey, distributed to the nearly 2,000 municipalities across Canada.



WHY IS MUNICIPAL INFRASTRUCTURE IMPORTANT?

It is well established that sustained investment in public municipal infrastructure gets people and goods moving, provides safe drinking water, handles our waste, creates spaces for sport and recreation, and helps protect our homes against flooding and other natural disasters. It is the foundation that the daily life of Canadians is built upon. The strength of this foundation enables our communities and local businesses to grow, and ensures Canadians have a high quality of life.

As owners of the majority of Canada's public infrastructure, municipal governments are essential partners in building Canada, identifying and implementing projects that respond to local needs. This includes both responding to new needs caused by population and economic growth as well as the renewal and reinvestment of the existing stock of municipally-owned infrastructure. All local governments regardless of size face multiple pressures and demands for infrastructure including population growth, climate change and environmental legislation that create new needs and make upgrades to older systems necessary. Despite a renewed commitment to infrastructure by the three levels of government in recent years, the impact of unpredictable investment patterns is still felt by municipalities today.

While the physical condition of existing infrastructure remains a concern, there is no question that in Canada there is a significant public infrastructure deficit. The 2012 Canadian Infrastructure Report Card found that the replacement cost for assets rated fair to very poor to be \$172 billion. Currently, there is no consistent strategy or alignment across governments in Canada to support infrastructure planning and investments. Inadequate engagement with local governments — which own and manage the majority of Canada's infrastructure — is a notable gap.

WHAT DOES THE REPORT CARD SAY?

Municipalities own the core infrastructure assets that are critical to the quality of life of Canadians and the competitiveness of our country. Almost 60% of Canada's core public infrastructure is owned and maintained by municipal governments. According to survey results, the total value of core municipal infrastructure assets is estimated at \$1.1 trillion, or about \$80,000 per household.

One-third of our municipal infrastructure is in fair, poor or very poor condition, increasing the risk of service disruption. The survey asked municipalities to qualitatively assess their infrastructure according to a five-point rating scale ranging from very good to very poor. Nearly 35% of assets are in need of attention. Assets in fair, poor and very poor conditions represent a call for action. Survey results demonstrate that roads, municipal buildings, sport and recreation facilities and public transit are the asset classes most in need of attention.

Increasing reinvestment rates will stop the deterioration of municipal infrastructure. The 2016 CIRC found that rates of reinvestment are lower than targets recommended by asset management practitioners. The rate can vary based on factors such as the age of the infrastructure, the level of service and risk tolerance. Continuing down this path will result in a gradual decline of physical condition levels that will impact municipal services.

Infrastructure	Lower Target Reinvestment Rate	Upper Target Reinvestment Rate	Current Reinvestment Rate
Potable Water (linear)	1.0%	1.5%	0.9%
Potable Water (non-linear)	1.7%	2.5%	1.1%
Wastewater (linear)	1.0%	1.3%	0.7%
Wastewater (non-linear)	1.7%	2.5%	1.4%
Stormwater (linear)	1.0%	1.3%	0.3%
Stormwater (non-linear)	1.7%	2.0%	1.3%
Roads and Sidewalks	2.0%	3.0%	1.1%
Bridges	1.0%	1.5%	0.8%
Buildings	1.7%	2.5%	1.7%
Sport and Recreation	1.7%	2.5%	1.3%

Increasing reinvestment rates will save money in the long-term. Without an increase in current reinvestment rates, the condition of Canada's core municipal infrastructure will gradually decline, costing more money and risking service disruption. Investing in preventive maintenance and regular repair will prolong the asset service life, avoiding premature and costly reconstruction and service disruption.

Building for today's communities and tomorrow's Canada requires long-term planning. Survey results demonstrate that, if our current rates of reinvestment do not change, the condition of Canada's existing municipal infrastructure will decline. A long-term plan is needed to ensure Canadians can continue to rely upon essential public services without disruption.

All communities, particularly smaller municipalities, would benefit from increased asset management capacity. Only 40% of responding municipalities reported publishing a state of infrastructure report (SOIR).

RATING SYSTEM

The survey asked municipalities to qualitatively assess their infrastructure according to a five-point rating scale ranging from very good to very poor. Nearly 35% of assets are in need of attention. Assets in fair, poor and very poor conditions represent a call for action. Survey results demonstrate that roads, municipal buildings, sport and recreation facilities and public transit are the asset classes most in need of attention.

Rating Scale for Asset Condition

Very Good – fit for the future (weighted average 80% to 100%):	Well maintained, good condition, new or recently rehabilitated.
Good – adequate for now (weighted average 70% to 79%):	Acceptable, generally approaching mid-stage of expected service life.
Fair – requires attention (weighted average 60% to 69%):	Signs of deterioration, some elements exhibit deficiencies.
Poor – increasing potential of affecting service (weighted average 50% to 59%):	Approaching end of service life, condition below standard, large portion of system exhibits significant deterioration.
Very Poor – unfit for sustained service (weighted average below 50%):	Near or beyond expected service life, widespread signs of advanced deterioration, some assets may be unusable.

HOW ARE MUNICIPALITIES DOING?

POTABLE WATER: GOOD (Average physical condition of potable water assets only)

The infrastructure in the system or network is in good condition; it is acceptable, generally approaching mid-stage of expected service life. The Extrapolated Replacement Value for assets in poor or very poor condition is \$25 billion. The current average reinvestment level of 0.9 per cent annually for linear and 1.1 per cent for non-linear assets will result in a decline in the condition of potable water assets over time.



WASTEWATER: GOOD (Average physical condition rating of wastewater assets)

The infrastructure in the system or network is in good condition; it is acceptable, generally approaching mid-stage of expected service life. The Extrapolated Replacement Value for assets in poor or very poor condition is \$26 billion. The current average reinvestment level of 0.7 per cent annually for linear and 1.4 per cent for non-linear assets will result in a decline in the condition of wastewater assets over time.



STORMWATER: VERY GOOD (Average physical condition of storm water assets only)

The infrastructure in the system or network is in very good condition; it is well maintained, in good condition, new or recently rehabilitated. The Extrapolated Replacement Value for assets in poor or very poor condition \$10 billion. The current average reinvestment level of 0.3 per cent annually for linear and 1.3 per cent for non-linear assets will result in a decline in the condition of storm water assets over time.



ROADS AND BRIDGES: GOOD (Average physical condition rating of road and bridge assets)

The infrastructure in the system or network is in good condition; it is acceptable, generally approaching mid-stage of expected service life. The Extrapolated Replacement Value for assets in poor or very poor condition \$50 billion. The current average reinvestment level of 1.1 per cent annually for roads and sidewalks and 0.8 per cent for bridges will result in a decline in the condition of these assets over time.



BUILDINGS: GOOD (Average physical condition rating of buildings)

The infrastructure in the system or network is in good condition; it is acceptable, generally approaching mid-stage of expected service life. The Extrapolated Replacement Value for assets in poor or very poor condition \$12 billion. The current average reinvestment level of 1.7 per cent annually will result in a decline in the condition of buildings over time.



SPORT AND RECREATION FACILITIES: FAIR (Average physical condition rating of sport and recreation facilities)

The infrastructure in the system or network is in fair condition; there are signs of deterioration, some elements exhibit deficiencies. The Extrapolated Replacement Value for assets in poor or very poor condition \$9 billion. The current average reinvestment level of 1.3 per cent annually will result in a decline in the condition of sport and recreation facilities over time.



PUBLIC TRANSIT: GOOD (Average Physical Condition Ratings)

The infrastructure in the system or network is in good condition; it is acceptable, generally approaching mid-stage of expected service life. The Extrapolated Replacement Value for assets in poor or very poor condition \$9 billion. The current average reinvestment rate shows that if the trend is maintained, assets will continue to deteriorate.



ASSET MANAGEMENT IN CANADA

The 2016 CIRC survey included a section on asset management for the first time. These questions shed light on the state of Canadian municipal asset management practices.

Survey results point to varied asset management practices according to community size. For instance, 62% of large municipalities, 56% of medium-sized municipalities and 35% of small municipalities reported having a formal asset management plan in place. All communities, particularly smaller municipalities, would benefit from increased asset management capacity.

One of the challenges we face is building the capacity of local governments to use asset management practices to manage their local infrastructure. Almost two thirds of larger cities have a formal asset management process but in smaller municipalities that drops to just a third. Building this capacity requires a commitment and support from the federal, provincial and territorial governments.

MODERIZING CANADA'S INFRASTRUCTURE

Efficient, modern core infrastructure enables Canada to be more competitive, create jobs and strengthen our economy. Without adequate infrastructure, business costs will increase and productivity will decrease making Canada less globally competitive.

A modern, well-maintained, efficient national system of core infrastructure is critical to the safety and economic future of all Canadians. Canadians do not want to drink water from water mains that are rated as fair any more than they want to drive on roadways in subpar condition. The 2016 CIRC study found that the replacement value of the physical condition of the infrastructure assets in very poor and poor condition totals over \$140 billion. Simply put, there is no room for fair, poor or very poor when it comes to our infrastructure.

The modernization of Canada's core municipal infrastructure is a national challenge. Strong global demand for Canadian products and natural resources will continue to put a strain on our existing infrastructure. Either we strengthen our economy by accelerating the modernization of our existing infrastructure, or we squander what gains we've made and fall further behind.

Canadian Construction Association and partner organizations involved in the development of CIRC are making the results available publicly so that they may inform ongoing work for decision makers at all levels of government and industry. We are pleased with the major infrastructure commitments made by the new Liberal government and look forward to federal infrastructure investment in municipal public infrastructure in communities across the country.

For other highlights and a copy of the full report, please visit canadianinfrastructure.ca.

