

CSCE Encouraging the Development of Sustainable Infrastructure Systems

Additional investments are essential, but it will take more than just money...

Since the adoption of our strategic direction of *Leadership in Sustainable Infrastructure*, CSCE's sights have been collectively focused on helping our world solve one of the largest problems of our time: how to engineer our infrastructure systems to be sustainable.

Below you will find a few ideas from the CSCE's Infrastructure Renewal Committee about what we feel needs to be done to 1) address our infrastructure challenges that are outlined in the 2015 Canadian Infrastructure Report Card, and 2) to prepare for the opportunity that is on our doorstep as governments at all levels begin to make large scale investments to renew our infrastructure systems. We will be advocating for these ideas in a multitude of venues across Canada. Over time, each of these broad ideas will become more granular and detailed as we collectively work together to achieve our common goal of a sustainable future supported by sustainable infrastructure systems.

Background

The second iteration of the Canadian Infrastructure Report Card (CIRC) was released in early 2016. This edition has been expanded to include bridges, municipal buildings and transit, in addition to the original asset groups of roads, water, wastewater and stormwater systems. The CSCE sits on the Project Steering Committee and has been a proud partner of the initiative since the original planning for the first CIRC began back in 2010. The CIRC is firmly positioned as a fact-based document that presents information that was collected directly from municipalities on the state of their infrastructure systems and the state of their asset management practices. The CIRC does not include any advocacy positions about what should be done to address the survey results.

What the CIRC tells us about our infrastructure systems

The CIRC tells us that a large proportion of our infrastructure systems will need to be renewed over the short to medium term in order to prevent a decline in the quality of life that is supported by the systems. Some \$388 billion worth of infrastructure is in fair or worse condition. Governments at all levels in Canada recognize this problem and are taking steps to increase the financial investment in our infrastructure. But, equally as important as financial concerns, the CIRC tells us that there is a wide spread lack of maturity in infrastructure asset management related processes that support informed decision making related to how our infrastructure systems are renewed. Infrastructure asset management processes provide the tools that will ensure our communities invest **now** in sustainable infrastructure systems.

Sustainable Infrastructure Systems will be the Foundation of a Sustainable Future

In 2015, the CSCE Board approved *Policy Statement 2015-01: Development of Sustainable Infrastructure*. This policy statement was based on the recognition that the Civil Engineering profession is the steward of Canada's core infrastructure systems. The availability, condition and functionality of public



infrastructure systems are widely acknowledged as having a direct impact on the quality of life for all Canadians. We will not have a sustainable future without sustainable infrastructure systems.

What does the CSCE feel should be done to address the infrastructure challenges that are identified in the 2015 CIRC?

In short, our infrastructure systems are not sustainable because we have not engineered them to be sustainable. We have engineered them with other purposes in mind, such as to be cheaper or faster to construct. Civil engineers have the ability to turn our infrastructure challenges into an opportunity – to bring innovation into the next generation of infrastructure systems that will support our future society. And the CSCE is well positioned to provide leadership in the collection of different areas that will need to work together to build the next generation of infrastructure systems: academia, government and the private sector in the disciplines of engineering, public policy and finance.

Here are some areas where the CSCE, and our members, will be working together to make our infrastructure systems more sustainable:

- We will encourage innovative ideas and techniques around the planning, design, construction, financing and management of infrastructure systems. At the same time, we will work with our partners to redesign how our infrastructure systems are procured by their owners to remove the barriers to innovation that currently exist within our municipal/provincial/federal bureaucracies.
- We will work with other infrastructure stakeholders to develop a long-term investment strategy to ensure that the financial needs of our infrastructure systems do not continue to be passed along to future generations.
- We will provide leadership to implement a Canadian Sustainable Infrastructure Rating System that supports the ability to quantify the sustainable performance of infrastructure projects. This will enable all infrastructure stakeholders to make better informed decisions to ensure that we are first building the right project, and then building the project right.
- We will advance the skills, knowledge and information necessary to achieve our vision for sustainable infrastructure through research, education and technological innovation. This will include working with post-secondary institutions to bring the concepts of sustainable infrastructure into our classrooms at an early stage. This will also include working with research groups in our university network to increase the ability to bring new products or construction techniques to our infrastructure systems.
- We will encourage municipalities to further advance their internal infrastructure asset management processes and show them how these processes will be fundamental to quantifying the sustainable performance of their own infrastructure systems. The CSCE believes that infrastructure asset management processes should be engineered to quantify greenhouse gas emissions of an infrastructure system, justify the adoption of a new product/construct technique that would result in lower GHG emissions, and be used to understand the resilience of an infrastructure system to climate change.



- We will partner with national organizations and government agencies to bring the 2018 International Conference for Sustainable Infrastructure to Canada.

Closing

The CSCE is actively engaged in finding ways to engineer our infrastructure systems to be sustainable. We would encourage all CSCE members to work together with their local groups to help guide the strategies that will form the collective voice of CSCE. Please contact your CSCE executive to find out how you or your local group can contribute to steering the direction of our advocacy positions.