

The impact of megatrends on Ontario's future infrastructure



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Infrastructure is an important topic across Canada boosted by a hotly contested federal election campaign, the Ontario government's commitment to invest \$130-billion in infrastructure over 10-years and the municipal sector's demand for access to more funding sources to pay for roads, bridges, transit and other infrastructure.

When Toronto's monumental Bloor Viaduct over the Don Valley was built in 1918, it was decided to add a lower level for a transit line that was then only a dream. But when the Bloor subway was built nearly 50 years later, it was completed sooner and at far less expense because of that foresight. This teaches us two lessons: today's infrastructure seems expensive, but yesterday's infrastructure seems like a prudent investment. And foresight, not just meeting current demands, should guide our infrastructure decision-making.

It's equally important to adopt new techniques to meet today's needs and to take into account wider economic impacts. The costs of congestion and the inconvenience of bridge rehabilitation are illustrated daily on the Gardiner Expressway; but innovations such as the rapid bridge replacement program used for the Aberdeen Ave. bridge on the 403 that was completed within

51 hours and for the Burlington Canal Lift-Bridge, demonstrate how innovation can help to solve today's infrastructure challenges.

Public infrastructure doesn't just respond to today's needs – it creates a better future. Although there is broad recognition of the need for infrastructure investment, there is less awareness of how major societal trends and disruptive technologies will determine what we should build. In a constrained fiscal environment, it is paramount that we build the right infrastructure. Good infrastructure decisions pay dividends for generations; bad decisions burden us for decades.

With this in mind, the **Residential and Civil Construction Alliance of Ontario**, representing those who build infrastructure, took the bold step of looking into the future of infrastructure. Our report, released in September, highlighted that new forms of infrastructure will emerge but that elsewhere, bricks-and-mortar solutions may become less relevant, such as in the health care and educational sectors.

Our political leaders have promised billions in infrastructure spending, but we need to anticipate what will be needed in the next 10-15 years. What should we be doing to anticipate that very different world?

Megatrends – the scope and pace of technological change; urbanization, globalization and connectivity; our changing economy and workplaces; environmental and energy trends; new political and fiscal currents – will change our society and its infrastructure.

These megatrends will affect both our daily lives and what must be built. Scale, distances and elapsed times will all shrink; margins of all kinds will be squeezed; individual customization will be expected and consumer choices will drive urban designs. Global impacts will become local impacts, and climate change will demand more resilient infrastructure.

But what if our ability to plan and invest long-term tends to be hindered by short-term thinking? Evidence-based approaches will be critical to adapting to megatrends and allocating scarce funds wisely.

The report came to the promising conclusion that this daunting pace of change has great potential. New materials, components and processes could make infrastructure easier and cheaper to build and maintain – and then to adapt it, repurpose it and refinance it when needs change. Flexible or adaptable infrastructure can help to speed up infrastructure planning. New infrastructure will enable and drive convergence in all aspects of our lives, from transportation fare-media to health care. In the near future, the requirement for hospitals may decline because technology will monitor people's health wherever they are. Similarly, will we need big college campuses when the world's best scholars and educational programs will be available on screens in our homes or on our wrists?

But a promising future is not a given. To embrace its potential, we must position government and society to address these challenges in a pragmatic way. We need a clear-sighted economic development strategy to inform our infrastructure choices. Within government, we must have

high-priority, focused ways of thinking about our future. In short, we need to take an all-encompassing approach to infrastructure decision-making that involves everyone.

Full report can be [found here](#).

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