Infrastructure investment becoming more complex: INFRASTRUCTURE SUMMIT

By Michael Mastromatteo

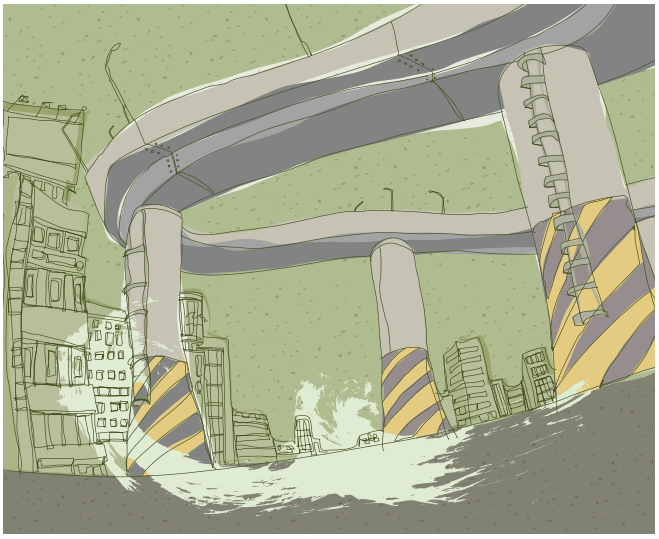
POLICIES FOR DEALING with Canada's much-talked-about infrastructure deficit are moving to a new level of sophistication and complexity–and not a moment too soon, say presenters at the annual infrastructure summit September 16 to 17 in Toronto (see "Complex infrastructure needs require new engineering approaches," p. 32).

Organized each year since 2007 by the Toronto-based Strategy Institute, the summits present the latest thinking on infrastructure investment, renewal and rehabilitation.

At least five PEO members were among this year's presenters. They joined elected officials, administrators and project planners in discussing a range of civil infrastructure issues with special emphasis on transit, alternative funding models, innovation, sustainability and life-cycle analysis of infrastructure investment over the next half century.

Zoubir Lounis, PhD, P.Eng., senior research officer with the National Research Council's civil engineering/infrastructure section, opened the two-day conference with an overview of best practices for municipal officials to pay for, build and maintain the next generation of infrastructure projects.

"Sustainability and resilience criteria need to be considered at the design stage and at the long-term management stage of critical infrastructures," Lounis said. To achieve sustainable and resilient infrastructure, he added, engineers and policy-makers should consider a program of innovative materials, regulations and comprehensive, risk-based design and management approaches. Lounis also said infrastructure systems now and in the future should be



marked by durability, low maintenance, high resistance and dependable functionality, especially in response to new and unforeseen disruptions.

Darla Campbell, P.Eng., executive director of the Ontario Coalition for Sustainable Infrastructure (OCSI) and a member of PEO's Government Liaison Committee (GLC), described the development of partnerships in addressing the infrastruc-

ture deficit. OCSI recently organized a Courageous Conservations conference that looked at why much municipal infrastructure has fallen into a state of neglect and disrepair.

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DAVID PHILLIPS, SENIOR CLIMATOLOGIST, ENVIRONMENT CANADA

Campbell said the top reasons for this inactivity include poor appreciation for infrastructure's contributions to healthy communities, weak political leadership and a lack of data on how to plan and build new projects.

She suggested it's time for new thinking and information sharing among all stakeholders to arrive at better infrastructure investment decisions.

In his discussion of sustainable transit initiatives, Derrick Toigo, P.Eng., senior vice president, Infrastructure Ontario, emphasized alternative funding and procurement programs as one way to stimulate project development and completion. Infrastructure Ontario is a provincial Crown corporation promoting infrastructure project delivery, usually by way of funding and procurement arrangements with the private sector.

A key take-away for engineers at the conference came from Environment Canada senior climatologist David Phillips, who outlined potential impacts of severe weather on infrastructure assets.

Phillips, who said he has seen more strange weather incidents in the last decade than at any other point in his 30-year career as a climatologist, said a warming climate is playing havoc with the understanding of weather patterns and the predictability of severe incidents.

"It suggests there is something else at play here, besides just nature," Phillips said, adding that changing land use patterns over the last 30 years, along with rapid urbanization, have rendered traditional weather and climate data unreliable. "It's almost as if we as a society are replacing nature's infrastructure with our own," Phillips said. "Engineers and others involved with infrastructure need to look to adaptation measures and to factor in a warming climate in all their decisions."