

ReNew

January/February 2018

C A N A D A

The Infrastructure Magazine

- + Priorities, Predictions and Project Pipelines
- + One-on-one with Minister Sohi
- + A New Era for Aecon

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The **Top100** **Projects** **Report**
2018



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Our 2018 preview uncovers 13 key stories that will generate infrastructure industry headlines in the year ahead. *By Andrew Macklin*



For additional details on this year's Top100 report, visit top100projects.ca



ON BOARD WITH HIGH SPEED RAIL?

By Andrew Macklin

Most of the infrastructure we build carries some level of controversy, but few have invoked as many mixed reactions as the Toronto-Windsor high speed rail project.

The proposed \$21-billion project, which would provide a seven-stop line connecting Toronto's Union Station with the City of Windsor, has been lauded by governing politicians and simultaneously slammed by conservative critics and worried taxpayers.

The economic arguments for the project are valid, as David Collette explained to a room full of industry professionals at the recent Canadian Council for Public-Private Partnerships conference in Toronto. The former federal cabinet minister, who served key roles under three Liberal Prime Ministers, was hired by the Ontario Ministry of Transportation as its special advisor on high speed rail in October of 2015. His report on the subject, released in May of 2017, presented the business case for the project.

The Ontario Liberals, facing a stiff political challenge ahead of the June 7th election, are touting the project as a slam dunk for reducing congestion times on regional highways, giving families more options for places to live, and improving the economic vitality of the region. It would allow for easier access between the economic hub of Toronto's downtown, one of the largest international airports in North America with Pearson International Airport, connection to the expanding Kitchener-Waterloo tech corridor, and would put cities like London, Chatham-Kent, and Windsor within reach for full and part-time commuters. The travel time of two hours and four minutes

to Windsor is just 24 minutes longer than the current farthest destination (Allandale Waterfront) in Metrolinx's GO service corridor.

So why aren't people convinced?

For starters, there is a fear of the unknown. Ontarians do not have first-hand experience with high speed rail, and the idea of travelling at 240 kilometres per hour is intimidating to some (I should note that we are the only G8 country that has no high speed rail). The price tag is definitely scary, as the \$21-billion expense represents the largest project cost in the province's history. And there are the spending sceptics, who recognize that the reigning Liberal government continues to spend beyond its means annually, increasing the provincial debt from \$132.6 billion to around \$290 billion during the Liberal's 14-plus years in office. The fear of billions of dollars of expense with little or no return can be a frightening proposition.

Nonetheless, the province is moving forward with the project. The first few tenders have been released and the Planning Advisory Board review is underway, contending the 'empty political promise' that opposition parties suggested the project was. Without question, this will be a key election issue in several prominent ridings in the province.

Is the Ontario high speed rail fantasy or reality? That answer could very well depend on the outcome of the June 7th election. 🍁

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ReNew Canada is published six times a year by Actual Media Inc.

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Subscription/customer services: 416-444-5842, ext 211

ReNew Canada subscriptions are available for \$39.95/year or \$64.95/two years and include the annual Top100 Projects report.

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Printed in Canada

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Undeliverable mail return to:
147 Spadina Avenue, Unit 208
Toronto, ON M5V 2L7

Canadian Publications Mail Product Sales Agreement
40854046
ISSN 1715-6734

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As our Top100 report flirts with \$200 billion in overall value, projects continue to push towards, and past, \$10 billion in overall cost. Read more on page 10.

Photo Credit: Lina Samoukova

N.B. INVESTMENT TOPS \$800 MILLION

In November, the Government of New Brunswick announced that it will spend \$815.3 million on public sector infrastructure as part of its 2018-19 budget.

The investments include:

- **\$12.6 million on parks, trails, historic sites, and other tourism infrastructure.**

This represents a 19.1 per cent increase over the level of investment last year;

- **\$105.8 million is being invested in primary and secondary schools across the province;**

- **\$99.9 million for hospital and health care infrastructure;**

- **\$458.1 million in roads, bridges, buildings, and other infrastructure.**

This continues ongoing construction on sections of Route 11 and the Fundy Trail Parkway Connector; and

- **\$20.3 million in energy retrofits and renewable energy upgrades.**

Additional details will be provided when departments present to main estimates.

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VEHICLE AUTOMATION: A MOBILITY SOLUTION THAT RAISES MANY QUESTIONS

The fascination with and concern of automotive technologies—specifically automation, connectivity, electric, and sharing—are growing with the expectation of new mobility options. The promise of a solution to many of our 20th century urban transportation ills has been underway for most of the 21st century.

Governments are expected to prepare for this new mobility. Anyone who has this expectation must also assume that governments have or will speculate the answers to certain critical questions about automated vehicles: How many automated vehicles will there be? How will they be owned and operated? How will they be managed and coordinated? How will they be regulated? How will lost revenue be replaced?

Without reliable answers, planning how cities must adjust remains difficult. The gap between smart cities and poured curbs and concrete or re-purposed parking garages is filled with physical, temporal, and regulatory detail we currently do not understand.

This gap is dangerous for cities. Innovators constantly seek to fill market gaps that earn revenue. Innovation waxes, government agility wanes. Innovation finds opportunity, regulators react. Innovation and regulation each carry unintended consequences.

Unintended consequences disrupt the status quo, expose new issues for government to regulate and impose new demands for governance or infrastructure. Ridehailing is a recent example of this—disrupting employment equity, increasing congestion, and reducing transit ridership. Such outcomes are often opposite to what is promised by innovators. Ridehailing is not a bad thing. It is easy to describe advantages of ridehailing by enumerating why it creates demand. It can even be argued that there will be even greater advantages of ridehailing if the transportation system reaches full automation.

We need governments to focus more on how the coming innovations could be used to benefit our cities and improve our lives.

How might technology be deployed or guided to address urban transportation issues? How might it be abused, misunderstood, and wasted? How might governments leverage opportunities to increase social equity and make cities more livable? How might society avoid an increase in aggregate kilometres travelled and its attendant congestion and outward urban growth? How will this technology disrupt our transit systems and what steps could be taken to preserve the role of public transit agencies in transportation optimization and social inclusion?

We can be certain that commercial innovators will achieve remarkable levels of automation and automated services. We can be assured that consumers of household vehicles and consumers of commuter trips will adapt to these new vehicles and services. We may not be sure how rapidly this will unfold. And we are clearly uncertain how well this will turn out.

Ironically, we are getting to this uncertain place very quickly while many government programs are designed in the name of regional technology leadership to get us there even more quickly, without really understanding what to do once we get to wherever it is that we will end up.

Bern Grush is a systems engineer, futurist and the author of RCCAO-commissioned reports “Ontario Must Prepare for Vehicle Automation,” Parts I and II.



Etobicoke General Hospital.



Joseph Brant Hospital Redevelopment and Expansion Project.



Hurontario LRT.

All Photos: Infrastructure Ontario



Ottawa LRT – Stage 2.



Mackenzie Vaughan Hospital.

THE NEW PIPELINE

Infrastructure Ontario has released its 2017 project pipeline update, with 32 projects representing an estimated value of \$15.8 billion.

“Our pipeline this year represents the largest set of projects in our history by dollar value,” said Ehren Cory, CEO of Infrastructure Ontario.

The 32 projects represents an almost even split, with 17 civil and 15 social projects represented. That’s a shift from previous investments listed in the pipeline, as an influx of new health care projects were added for 2017.

“If you think of IO in eras, era one was the huge push on hospitals and buildings, era two was the massive influx of the transit projects, and the last few years have been heavily skewed toward our civil projects,” explained Cory. “This year, era three, is a rebalancing. Of the new projects we’re adding into the pipeline they’re almost entirely on the building side. There are a lot of major civil projects that were already on the pipeline last year and they remain there. But it’s really an era of balance.”

These projects include some of those

introduced in the release of the provincial budget in April, including hospital projects in Hamilton, Windsor, Kingston, Niagara, and Moosonee/Moose Factory. There is also the new James Bradley Environmental Sciences Centre, being built in Toronto, which represents a seventh new building project on the pipeline.

The building projects also represent a shift to the expansion and rehabilitation of facilities of growing regions of the province, rather than the influx of new builds we had previously seen to meet the growth needs in the Greater Toronto Area especially, but even in to the Greater Toronto Hamilton Area.

As Cory explained there is still demand for greenfield building projects in Ontario, such as the \$1.3-billion Mackenzie Vaughan hospital which began construction in the fall of 2016. The rapid expansion of communities north of Toronto, including Vaughan, Richmond Hill, Maple and Woodbridge fuelled the need to build the new state-of-the-art facility, the first smart hospital project supported by Infrastructure Ontario.

But for the most part, new projects

in the building sector, including court, justice and detention facilities as well as additional social projects, represent a focus on rehabilitating existing assets to meet current standards and needs. These facilities are vital to the communities they serve, in the location they currently exist, but are in need of modernization to meet today’s industry demands, as well as the demands of expanding catchment areas.

Of the 32 projects listed on the new pipeline, at least 19 are expected to break the \$250 million threshold. Six projects are listed with an undetermined value, so that number could increase depending on the size and scope of the work being done on those projects. ✦



To view the new Infrastructure Ontario project pipeline, visit infrastructureontario.ca/Market-Update-2017

With the board of directors now in place, the Canada Infrastructure Bank should begin reviewing potential projects in early 2018.



Online at
renewcanada.net



NEWS: North Island Hospital opens in Comox Valley.
bit.ly/ComoxHealth



VIDEO: Eastern portion of Regina Bypass opens.
bit.ly/EastRegina



REPORT: Building in the Americas. bit.ly/BuildUSA



VIDEO: Preparing for Vehicle Automation. bit.ly/GrushAuto

BOARD OF DIRECTORS NAMED FOR CANADA INFRASTRUCTURE BANK

Amarjeet Sohi, Minister of Infrastructure and Communities, has announced that 10 professionals have been appointed as the Board of Directors of the Canada Infrastructure Bank. Their appointments were made following an open, transparent, and merit-based selection process. The board members are:

Kimberly Baird: Founder of Kim Baird Strategic Consulting and former elected Chief and strategic initiatives director of the self-governing Tsawwassen First Nation.

Jane Bird: Senior policy advisor at Bennett Jones.

Dave Bronconnier: President and chief executive officer of Interloq Capital Inc. and former mayor of Calgary.

James Cherry: Former president and CEO of Aéroports de Montréal.

Michèle Colpron: Former senior vice-president of financial management with the Caisse de dépôt et placement du Québec.

Bruno Guilmette: President of the Plan A Capital Advisory Committee.

Christopher Hickman: Chairman and chief executive officer of Marco Group of Companies.

Poonam Puri: Practising lawyer and affiliated scholar at Davies Ward Phillips & Vineberg LLP.

Stephen Smith: Co-founder, chair, and chief executive officer of First National Financial LP.

Patricia Youzwa: Chair of the Pooled Funds Advisory Committee for Greystone Managed Investments, former president and CEO of SaskBuilds.

As an arm's length Crown corporation, the Canada Infrastructure Bank is governed by its independent board of directors. The board is responsible for the governance and oversight that will enable the Canada Infrastructure Bank to successfully deliver on its mandate. The Board is led by Janice Fukakusa, who was appointed chairperson in July 2017.

"The appointment of the Board of Directors is another important milestone towards the Canada Infrastructure Bank becoming operational," said Amarjeet Sohi, minister of infrastructure and communities. "The range of expertise and experience that these directors bring is invaluable to the success of the Bank and to the investments that it will make in Canadian communities, which will create good jobs across the country." ❁

Minister of Infrastructure and Communities Amarjeet Sohi is interviewed by Gregory Smith of InstarAGF Asset Management Inc. at the 2017 Toronto Global Forum.

ECONOMIQUE
INTERNATIONAL
DES AMÉRIQUES

EL FORO
ECONÓMICO
INTERNACIONAL
DE LAS

Credit: ReNew Canada

NATIONAL PRIORITIES

ReNew Canada sits down with the Minister of Infrastructure, **Amarjeet Sohi**.

By Andrew Macklin

After sitting as a member of Edmonton City Council for eight years, Amarjeet Sohi was elected as the Member of Parliament for the riding of Edmonton Mill Woods in the October 2015 federal election by a narrow margin of just 92 votes. Two weeks later, Prime Minister Justin Trudeau welcomed Sohi to his cabinet, naming him as the new government's Minister of Infrastructure and Communities.

After taking hold of the portfolio, Sohi has been working with his team to determine the best methods for prioritizing spending in the wake of growing municipal infrastructure deficits. The efforts have led to the introduction of several programs for streamlined funding in areas of need, such as transit and water/wastewater; committed new funds directed at small and northern communities; and work with the Federation of Canadian Municipalities to help create asset management programs nationwide and promote new investment in resilient and sustainable infrastructure.

ReNew Canada sat down with Minister Sohi at The Canadian Council for Public-Private Partnerships Conference in Toronto to discuss accomplishments, priorities, and the future of infrastructure funding.

When you look back at 2017, what stands out for you in terms of the infrastructure portfolio?

I would say that 2017 has been a very successful

year where we have moved forward on the approval of a large amount of infrastructure projects that were launched in 2016. We have approved more than 4,000 infrastructure projects for Canadian communities from coast to coast to coast with a combined investment of more than \$35 billion.

Is there anything in particular that you are proud you and your team have been able to accomplish in the past two years?

What I am proud of is that we are helping communities the way that has never happened in the past. We are giving them proper support; we value them as partners. We have shifted the government thinking where, in the past, there has been a very top-heavy approach. Now we work in partnership. We are equal partners with provinces, municipalities, and Indigenous communities.

With the release of your government's Pan-Canadian Framework on Clean Growth and Climate Change, you signalled the need for infrastructure development with a green lens. What does this vision look like?

Our government firmly believes that Canadians don't have to make the choice between building a stronger economy and protecting our environment. We can do both, we need to do both, and we are doing both. A strong economy where we invest in new technology,

where we invest in green infrastructure allows us to not only make our communities green but also allows us to create jobs.

We all know that the Canada Infrastructure Bank is set to be operational by the end of 2017. But what happens next? What happens following the bank's formation?

The reason that we have created the infrastructure bank is that, despite historic investments in infrastructure, there will still remain a large amount infrastructure deficit in our communities. On the other hand, you have institutional investors, pension funds, who are sitting on billions of dollars that they would like to invest in infrastructure where they can earn a stable rate of return. Our goal is to bring the private sector together with the public sector and to look for opportunities to build infrastructure that otherwise may never get built, or may have to wait 15, 20, 30 years to build because of the size of the project, the complexity of the project, or the lack of resources in the public sector.

How much of a priority is asset management development for communities across Canada?

It is very important that municipalities develop their own asset management plans. That's why we have provided support to the Federation of Canadian Municipalities (FCM) to build the capacity for the local

governments. We believe that, if local governments lack the resources, particularly smaller and mid-size communities that may not have the support or expertise, through FCM we are providing funding for that.

Your government has committed extensive funding for water and wastewater resources in Canada.

Why has this been such a high priority for your ministry?

It is, in my mind, unacceptable that we have communities in Canada that don't have safe water to drink. It's a fundamental that people need to have in order to live healthy lives. And when that is denied, it is something that all Canadians should be concerned about. That is why, in Phase 1, we focused extensively on providing support to fix existing systems and/or to do design work on water and wastewater infrastructure.

My department works closely with (the Ministry of) Indigenous Services because of the lack of water/wastewater infrastructure on the reserves and in Indigenous communities, and the boil water advisories that these communities face. We are working on ending these and providing sustainable solutions.

We have seen the success of municipal collaboration in infrastructure development this past year, particularly with the Joint-Use Schools Project P3 in Saskatchewan. Are you encouraging communities to increase collaboration to improve infrastructure development?

We always encourage collaboration and cooperation among municipalities and sectors with each municipality. We don't prioritize projects. We don't select projects. What we prioritize is what outcomes do we want to achieve by helping local governments build those infrastructure projects.

With so many infrastructure needs at the small, medium, and large scale, how do you prioritize where the funding is most needed and which projects you should support?

I think it's very important for the federal government to recognize that if you don't give long-term sustainable, predictable funding to local communities, they are in a very difficult position to effectively plan for the long-term. They need that

certainty. We want to give that certainty by having this 10-year plan in place. We also need to design our funding model in a way that provides support for a wide range of infrastructure projects. So the creation of the Canada Infrastructure Bank can undertake large-scale or very complex projects. But we also create a Small Communities Fund, Northern Communities Fund, dedicated funding for recreational/cultural infrastructure, dedicated funding for water/wastewater infrastructure, and dedicated funding for public transit infrastructure so that we don't put communities in a position where they don't have to choose (between projects). They don't have to make that tough decision.

With the Canada Infrastructure Bank under development and thousands of infrastructure projects still in the pipeline, it will be another eventful year for the Ministry of Infrastructure.

Thanks again to Minister Sohi for taking the time. 🍁

Andrew Macklin is the editor of ReNew Canada magazine.



XCG's Grant Walsom at a client site in Ontario.

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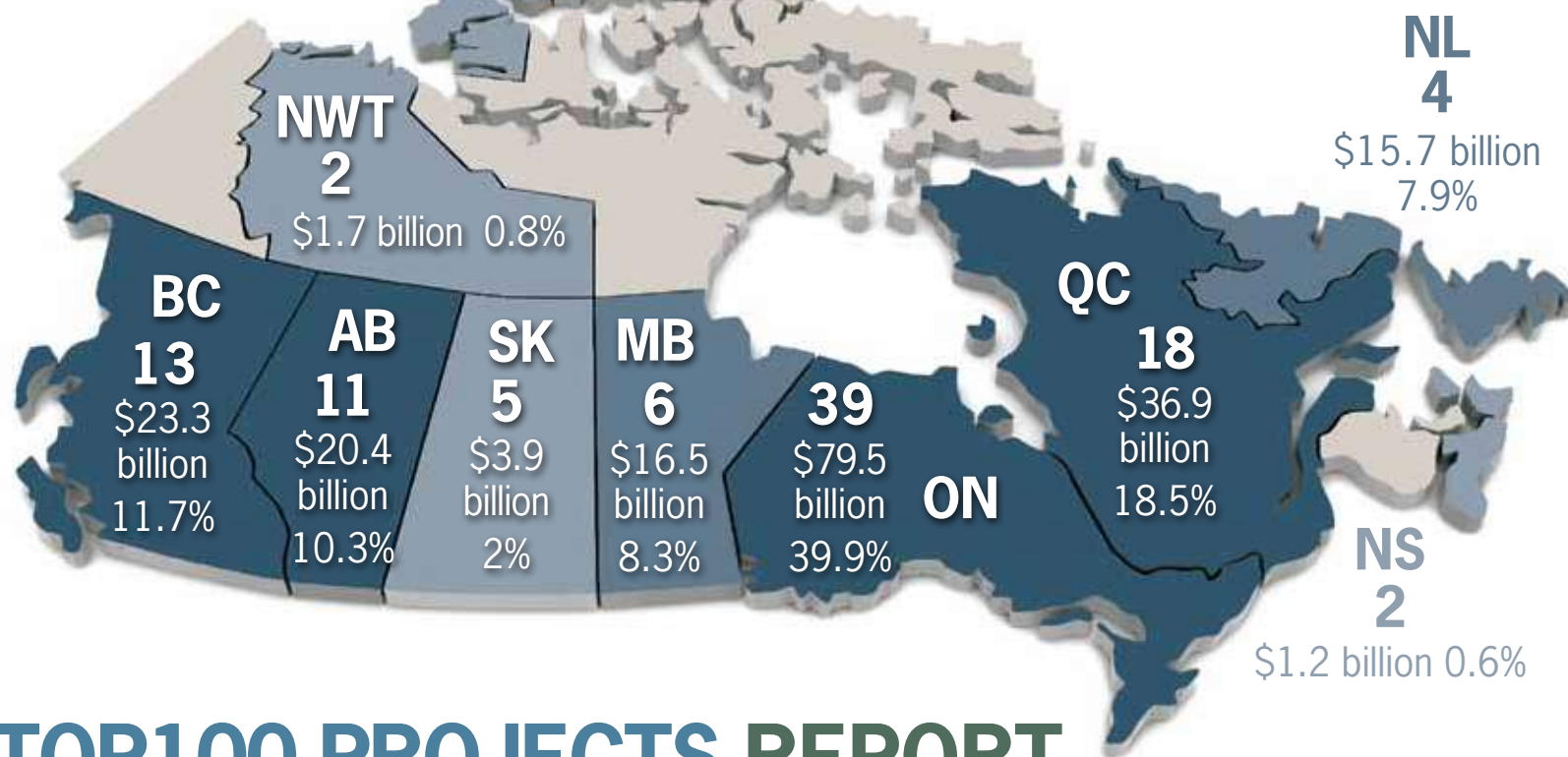
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- no projects over \$330 million
- less than \$1 billion
- \$1-\$5 billion
- \$5.1-\$20 billion
- more than \$20 billion

Number of Projects by Province/Territory and Total Value within Top100



TOP100 PROJECTS REPORT

Breaking down \$199 billion of infrastructure development. *By Andrew Macklin*

What a difference a year makes. Last year, we celebrated the first two public sector infrastructure projects to breakthrough the \$10 billion threshold. This year, the same ten projects grace the top ten list, however, the overall cost of five of those ten projects increased due to scope creep and unforeseen delays.

We also saw an increase of over \$12.5 billion through new investments shared across sectors leading to an \$200 billion jump in investments made overall. Despite 13 new additions to the report, no single sector increased by more than three projects. The sectors that did add three projects were water/wastewater and transportation.

The gap between the sectors has

decreased, reversing the recent trend towards massive energy and transit expansion. There is a three-way tie at the top as the energy, transit, and buildings sectors all have 23 projects on this year's list. Transportation is not far behind, with 18 projects within the Top100, followed by a record nine water/wastewater projects.

Provincially, it comes as no surprise that Ontario continues to dominate the list. With 40 projects on the 2018 list, Ontario has more than twice the number of Top100 projects than the runner up, Quebec, and more than three times as many as Alberta and British Columbia, the only other provinces with 10 or more projects on the list.

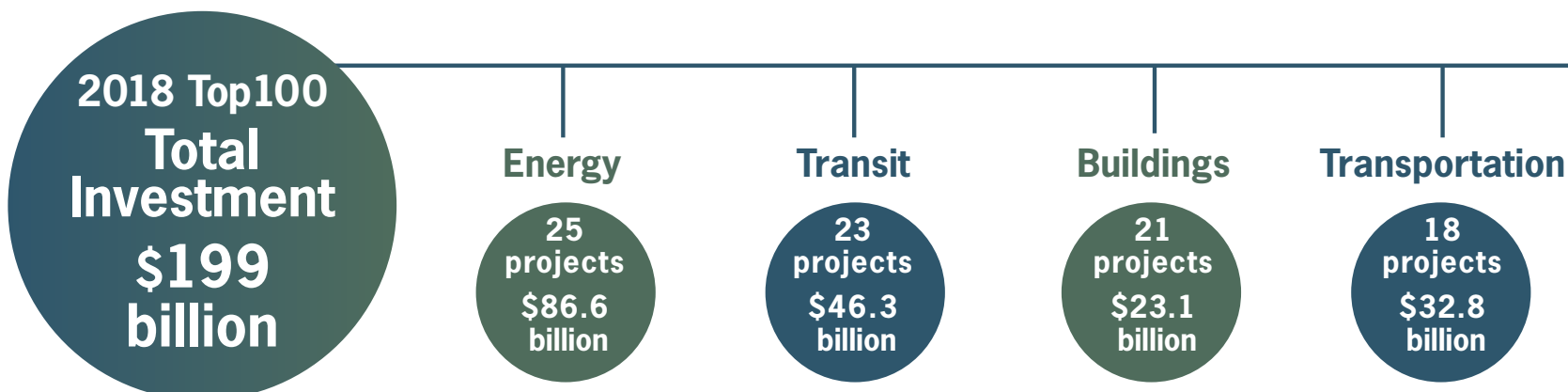
This is not the year where the new mega-

projects dominate the headlines. Instead, it is the year where we get a glimpse of what is to come: the expansion and rehabilitation of health care facilities, growth in northern transportation infrastructure development, a pipeline of future transit projects, and continuous investment in treatment and containment of water resources.

Provincial/regional summary

British Columbia

With the province's two largest projects under development, B.C.'s infrastructure is currently under the government microscope, with the potential for great change across the province. At the time of writing, there



Credit: Hydro-Quebec

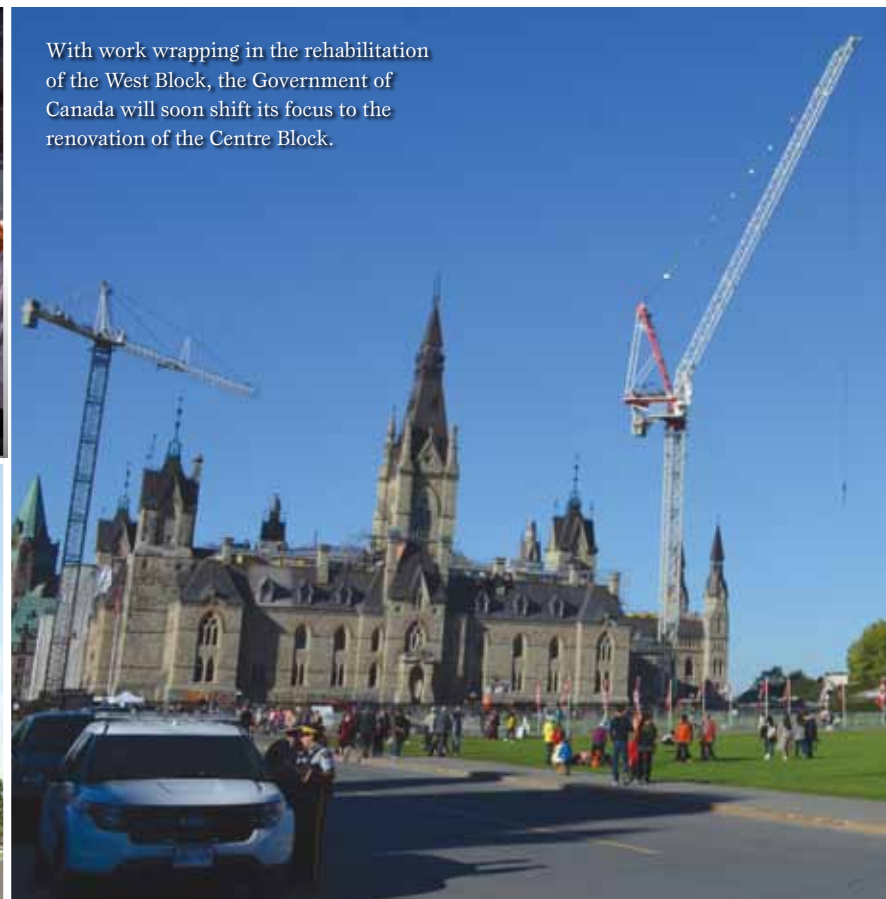


Quebec continues to improve its energy resources, and in 2017, announces the start of a \$732-million rehabilitation of the Robert-Bourassa generating units.

Credit: Infrastructure Ontario



The \$685-million CAMH Phase 1C Redevelopment project is the latest health care infrastructure initiative undertaken in Ontario.



With work wrapping in the rehabilitation of the West Block, the Government of Canada will soon shift its focus to the renovation of the Centre Block.

Credit: ReNew Canada

was no evidence that either the Site C Clean Energy project (#4) or the George Massey Tunnel Replacement project (#16) would not move forward.

BC Hydro president and CEO Chris O'Riley announced that halting the development of the Site C project, while it was being reviewed by the BC Utilities Commission on behalf of the B.C. government, would cause a \$610 million increase in the cost. This represents an increase in the overall price tag to \$9.385 billion.

The Request for Proposals phase of the George Massey Tunnel Replacement project has been cancelled, as that project is also under review by the province. Despite the cancellation, the tunnel will need either significant rehabilitation, to be built; or a bridge will need to be built to replace it. At press time, it was unclear what the solution would be selected, but it's safe to say that the project is still moving forward in one form or another. The overall price tag will certainly change.

The province boasts three of the nine significant water/wastewater treatment projects on this year's list, including the newly added \$765-million Capital Region District Wastewater Treatment Project (#65). Both the Annacis and Lions Gate wastewater treatment projects are also moving forward in B.C. (note: the Lions Gate project has been renamed the North Shore Wastewater Treatment Plant).

Alberta

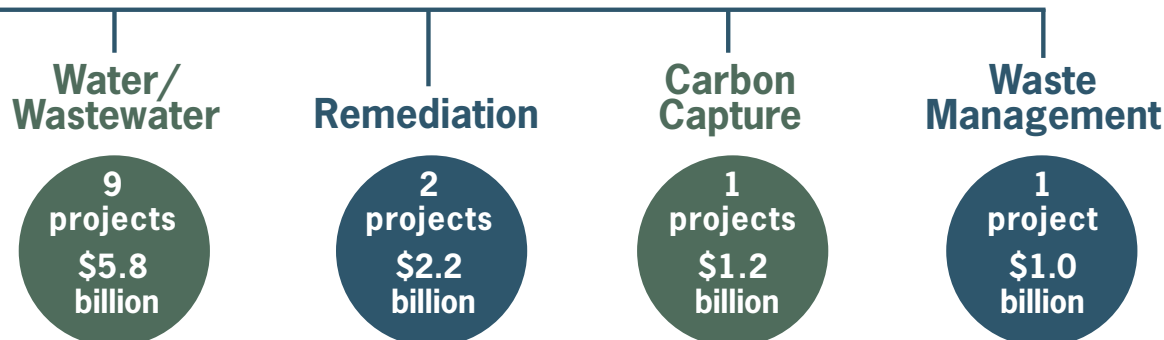
It was a quiet 2017 for the development of large-scale public sector infrastructure assets in Alberta. No new projects were added to the 2018 list, nor were any projects removed from the 2017 list.

In Calgary, work continues on the province's two largest public sector infrastructure projects: the \$5 billion Southwest Ring Road (#10) and the \$4.5-billion Green Line LRT (#11). There

was a great deal of uncertainty surrounding the Green Line project around the time of the municipal election. As Mayor Naheed Nenshi was elected to another term in office, the questions on the future of the project faded away. 2017 marked the start of construction of the \$1.4-billion Calgary Cancer Centre (#37), which broke ground months ahead of the original construction schedule.

In Edmonton, progress has been made on the \$1.8-billion Valley Line LRT (#27), and there is the potential for tenders to be released for the next phase of the project by the end of 2018. The transit system represents the only project on this year's list involving Canada's sixth-largest metropolitan area, but that will change in 2019 when the Yellowhead Trail transportation project moves forward.

Elsewhere in Alberta, work continues on multiple power projects, including the Fort McMurray West Transmission Project (#35) and the Genesee 4 & 5 Generating Stations (#39).



Top100 Canada's Biggest Infrastructure Projects

SEE REPORT IN CENTRE OF THIS ISSUE!

Visit top100projects.ca for additional notes on each of the Top100 projects, regional and sector lists of current projects, historic Top100 lists and more.

Credit: ReNew Canada



The \$3.18-billion Spadina Subway Extension was the largest project, by value, completed in 2017.



Progress continues on the \$6.5-billion Romaine Complex in Quebec, with Romaine-3 commissioned in 2017.

Credit: Hydro-Québec



The \$1.4-billion Calgary Cancer Centre began construction in the fall of 2017, months ahead of the original project schedule.

Credit: PCL

Saskatchewan

Saskatchewan remains a province to watch in the development of large-scale infrastructure, even though there were no new projects added to the 2018 report. After having six on the 2017 edition of the Top100, the province dropped to five in 2018 as a result of the successful completion of the Joint-Use Schools Project. The project has gained international attention, as the P3 project bundled schools in multiple jurisdictions, allowing some to be built years in advance of original timelines and in a cost-effective manner.

The \$1.88-billion Regina Bypass project (#26 on the 2018 report), the largest infrastructure project in the province's history, made substantial progress in 2017. In late October, phase 1 of the project between Balgonie and Highway 33 was completed. That phase included three new overpasses and four new service roads. The remainder of the project is still slated for completion for 2019.

Manitoba

Manitoba continues to develop six project that were included in 2017 list in 2018.

Both the Keyask Hydroelectric Project (#6) and the Bipole III Transmission Line (#9) saw cost increases in 2017 (\$8.7-billion and \$5.04-billion respectively). Despite the increases, both projects continue to move forward to meet rising energy demands both within the province and through export markets.

A \$180-million contract was awarded as

part of the South End Water Pollution Control Centre (#99) development in October of 2017. That project is currently scheduled for completion in September of 2021.

Ontario

Ontario continues to dominate the Top100 Projects report. For 2018, the province contributed 40 of the projects to the list, along with almost 40 per cent of the total list value (\$79.4 billion). The province leads every single sector category as well.

No one sector dominated Ontario's new additions to the 2018 report, which is reflective of the current Infrastructure Ontario pipeline. While there are many transit projects underway, especially in the Greater Toronto Hamilton Area (GTHA), there are also significant transportation, health care, energy, and water/wastewater projects also in the works.

The largest project to come off the Top100 list is also from the province, as the \$3.18-billion Spadina Subway Extension was opened to the public in late 2017. Also completed was the \$859.2-million East Rail Maintenance Facility (see story on page 16), which substantially improves Metrolinx's capacity for repairing units servicing transit corridors east of Toronto.

Among the new additions to the list are two water-related projects: the \$1.25-billion Port Lands Flood Protection and Enabling Infrastructure (#44) aimed at re-inventing a large portion of Toronto's waterfront, and the \$340-million Woodward Wastewater Treatment Plant (#98) in Hamilton, which is helping to improve water quality in the

city's industrial harbour. Work continues on the Regional Express Rail expansion in and around the Greater Toronto Area, with work underway on the \$1.534-billion Kitchener GO Corridor (#31).

Ontario has a long list of megaprojects in the pipeline, and municipal and provincial elections in 2018, so expect continued change in the province's contribution to the Top100 Projects report in 2019 as well.

Quebec

The Government of Quebec continues its strong investment in infrastructure development at a large scale, with funds for major projects in the health care, energy, and transit sectors.

With 19 projects on the Top100 Projects list, Quebec remains a strong second behind Ontario. In 2018, we have seen new additions in the health care space, with the Hospital of the Child Jesus development project (#23) and work on Phase 1 of the Laval University hospital project (#74) getting underway in 2017. As work continues on the \$6.5-billion Romaine Complex (#7), Hydro-Québec is also taking on the \$732-million Rehabilitation of Robert-Bourassa generating units (#65).

On the transit front, the \$6.04-billion Réseau électrique métropolitain is moving forward, with both provincial and federal funding committed to the project in 2017. Work is also underway on the \$440-million Côte-Vertu Station Underground Garage (#91), which will greatly increase capacity for maintenance and storage of Montreal's subway fleet.

The province continues to revise its 10-year infrastructure plan on an annual basis, which shows continued investment in transit, transportation, energy, and health care megaprojects in the years to come.

Atlantic Canada

It's easy to get caught up in energy megaproject development in Atlantic Canada, but there are a few key transportation initiatives that shouldn't be overlooked within the ranks of the 2018 Top100 Projects report.

There is a new transportation addition to the list from Atlantic Canada. After years of discussion, the Government of Nova Scotia has committed to what is likely just the first phase of improvements and expansion of the province's 100-series highway network. There was discussion on ways to fund the expansion of the entire network to four lanes, with roughly a \$2-billion expense. But the options for financing the entire scope of the work were not well received by the public or government. Instead, the province is moving forward with four sections of the project, with a total price tag of \$390 million, enough to

secure #93 on the 2018 Top100.

Work also continues on the hard surfacing of the 12,000 kilometres of the Trans-Labrador Highway, and the Government of Newfoundland and Labrador continue to commit funds to make it a safer drive for those who rely on the northern highway.

The price tag for the Muskrat Falls project (#3) continues to rise, with new estimates placed at \$12.7 billion for the project. Speaking of energy, the Maritime Link project is nearing substantial completion for the end of 2017, but with some secondary work bleeding into 2018, we determined that it should stay on the report for 2018.

Yukon, NWT, Nunavut

For the northern territories of Canada, 2017 will be seen as a very important year for large-scale infrastructure development.

The completion of the \$418.9-million Iqaluit International Airport Improvement Project (#91 on the 2017 Top100 Projects list) is a significant milestone for the region, which needed better infrastructure for the efficient movement of people and goods throughout the region. The Inuvik-Tuktoyaktuk highway, carrying a

\$300-million price tag that fell just short of breaking our Top100 report for several years, also represents a major improvement in the movement of people and products throughout the north.

As a result of the airport project completion, just two projects from northern Canada are listed on the 2018 edition of the Top100 projects report: the \$903.5-million Giant Mine Remediation Project and the \$751-million Stanton Territorial Hospital Renewal Project, which occupy #56 and #64 on the 2018 list respectively.

In total, there are 15 new and revisited projects that have been added to the 2018 report. The result is a record number of projects budgeted at \$1 billion or greater, with 54 this year. Of the projects removed from our list, only the \$3.18-billion Spadina Subway Extension was among the top 25.

The 2018 report reflects one of the most balanced investments we have seen in public sector assets across Canada. ♣

Andrew Macklin is the editor of ReNew Canada and author of the 2018 Top100 Projects report.



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GATEWAY AIRPORT



The terminal's aerodynamic shape discourages snow accumulation and blends with the landscape.

All Photos: Department of Economic Development and Transportation

An almost completely rebuilt airport in Iqaluit is now serving the Baffin region. *By Carroll McCormick*

Travellers using the Iqaluit airport, four flight hours north of Montreal in the territory of Nunavut, now enjoy terminal facilities as modern as any on the continent. The 107,650 square-foot building, plus an extensively rehabilitated airside, opened in August 2017.

Eight times the size of the old terminal, the red structure with lots of glass, has an aerodynamic, wave-like roof profile. This design is intended to let storms blow over it without dropping so much of their snow on the roof. The fit with landscape is elegant.

“People are very happy to see the airport. It is beautiful,” says Madeleine Redfern, mayor of Iqaluit. As for its importance to Iqaluit and the greater region, Mayor Redfern says, “Because there are no roads in and out of the territory, the airport is a hub. It is small, but busy—people coming and going with medical travel, contractors, miners, government employees.”

Iqaluit resident Kris Mullaly says of the completed project, “After having lived in Iqaluit for 11 years, the difference is staggering. The potential for this town and others is vast. It is long overdue. Speaking on my own, it has been a fantastic and positive result. It is good for the community, the entire territory, businesses, youth, and elders.”

Lacking roads to connect them, Northern communities rely on aircraft to get around. The Iqaluit Airport is a critical gateway airport for them, and for connecting the

region with airports in the Canadian south.

Originally the Frobisher Bay Air Base, founded by the United States Air Force in 1942, it became a civilian airport in the 1960s. The terminal serving travellers until this summer was built in the 1980s. It had become hopelessly out of date. The airside was gasping its last too, with a runway that had not been paved in 22 years and a lighting system that one person described as “antiquated.”

The Government of Nunavut decided on a public-private partnership to build and operate the airport. PPP Canada, the public-private investment body of the federal

Inc. handled the project’s construction requirements. Nunavut Airport Services Ltd., which is a subsidiary of the Winnipeg Airports Authority, has the main responsibility for airport operations, maintenance and other deliverables over the next 30 years. Stantec Architecture Ltd. and Stantec Consulting Ltd. designed the terminal.

For any airport infrastructure project with connections to highways, the logistics of bringing in construction material is straightforward. But for the Iqaluit Airport rebuild, the supply chain logistics are an eye-opener for anyone unfamiliar with how

Having an appropriate facility and airside for the transit of goods is critical to the entire region.

government, contributed \$77.3 million to the \$300-million project cost. Arctic Infrastructure Limited Partnership (AILP) will run the airport for the next 30 years. AILP’s shareholders and equity providers are InfraRed Capital Partners Limited, Bouygues Building Canada Inc., Colas Canada Inc., and the Winnipeg Airports Authority.

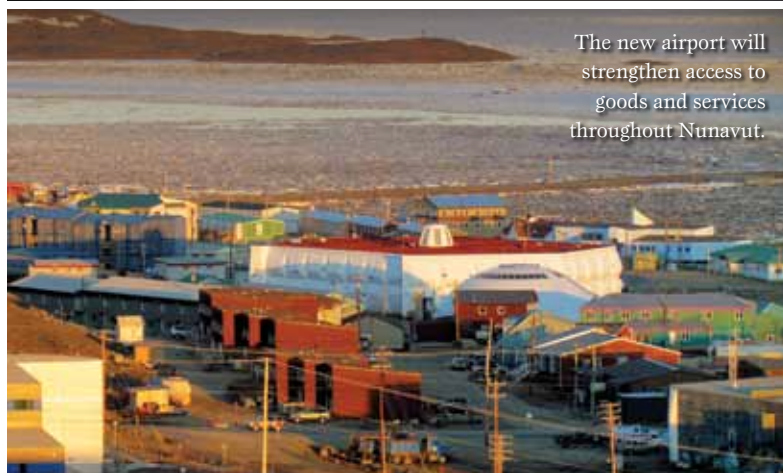
Bouygues Building Canada Inc. and Sintra

things work in northern Canada.

Everything comes into Iqaluit by ship or air. Nunavut Eastern Arctic Shipping (NEAS) and Nunavut Sealink and Supply Inc. delivered most of construction materials, including over 27,000 drums of asphalt. They also delivered some construction equipment, such as an asphalt plant, milling machine, and several asphalt pavers.



Dozens of pieces of Inuit art adorn the new terminal.



The new airport will strengthen access to goods and services throughout Nunavut.



A spacious lobby, check-in kiosks, and common use check-in counters greet travellers.

NEAS, for example, operates five vessels out of Valleyfield, Que. Cargo shipments are planned well in advance of the short shipping season, which may last just four months between July and November, depending on how cooperative the weather and the pack ice are. If cargo misses a boat, shippers can opt for air freight—rapid, but more expensive—or possibly miss out on ship space until next year’s shipping season.

On the delivery end, forget any idyllic images of cargo ships sidled up to wharves, with huge cranes and stevedores ready to serve. Iqaluit has no such infrastructure. Instead, ships carry their own portable port infrastructure kits, which include tugboats, barges and forklifts. In a manner that would be familiar to any northern explorer of the past few centuries, crews race to unload cargo onto the beach before each high tide shuts them down until it goes out again.

Mullaly astutely points out that it’s a good thing that such challenging supply chain logistics worked for this huge project. “It demonstrates that a large project like this can be done.”

The new terminal is superior to the old one by pretty much every conceivable measure. “It is significantly larger, especially as it relates to the check-in area, gates, and the waiting spaces past security. It has a restaurant, convenience store, and more than one baggage carousel. It can handle the current passenger traffic,” Mayor Redfern said.

There are 16 common-use check-in

counters, which, says airport manager John Hawkins, “allows for more flexibility, and allows potential new entrants to provide the same services as the established airlines.”

A new baggage handling system speeds bags to waiting planes (there are five gates) and the baggage pick-up room has two carousels. The passenger screening area, currently running one screening line, has room for a second line.

Post-security, the holding rooms are spacious, there are washrooms (the airside in the old terminal had none on the airside), wifi, drinking fountains, and vending machines. A retail space awaits building out for a future retail tenant.

A dedicated commercial taxiway has opened for an interested tenant with room to build a hangar. The airport also now has a car rental service for the first time.

The linking of a terminal’s architecture, food and beverage, or art, with the surrounding city or landscape, known as sense of place, is a concept that many airports have adopted over the past 15 years. In the Iqaluit terminal, the most striking expression of this is the display of Inuit art.

There are about 50 sculptures, 12 wall hangings, and five murals, according to Victor Tootoo, president of the Baffin Regional Chamber of Commerce. “The Winnipeg Art Gallery has many of the pieces of art, all of the Government of Nunavut’s art is on loan there. They took some of the pieces they had on loan to make sure all of the new terminal

has really good displays of artwork. In fact, when the official opening was held last month, some said, ‘It looks like are in an art gallery, not an airport terminal.’”

Mayor Redfern said, “Without a doubt, people want to see their culture reflected in public spaces. To see the volume and quality of Inuit artwork instills pride, showcasing art and beauty to people who come to the territory.”

Airside improvements included extensive repairs to the 2,623-metre runway and its repaving. There are three new taxiways, all new runway and taxiway lighting, as well as a new airfield lighting control management system, precision approach path indicator, and signage, among other things. Fire trucks and snow removal equipment fit nicely in the roomy new 48,500 square foot combined services building.

Speaking to the project as a whole, Tootoo sums up, “[...] being able to move people and goods more easily, produce like bread and eggs, that cannot be sealifted. That all comes through here to go to the rest of Baffin Island. Having an appropriate facility and airside for the transit of goods is critical to the entire region.” ❁



Carroll McCormick is a freelance writer based in Montreal, Que.



The ERMF infrastructure includes equipment that will support the electrification of the transit system.



The addition of the East Rail Maintenance Facility adds vital capacity for repair and maintenance of the GO transit fleet.

All photos: Renew Canada



THE BIG FIX

Metrolinx's new rail facility readies for repairs. *By Andrew Macklin*

Commuters throughout the Greater Toronto-Hamilton Area (GTHA) will never directly interact with Metrolinx's latest addition to its infrastructure portfolio, but without it, those same commuters likely wouldn't get to their destinations on time.

The sprawling rail network, which has grown significantly in all directions in the past decade, has facilitated the need for a new maintenance facility, one that can take some of the burden off of the GO Transit's Willowbrook Rail Maintenance Facility (located in Etobicoke).

The Request for Qualifications was released by Infrastructure Ontario, in conjunction with Metrolinx, in September of 2012. The shortlisted bidders were announced just a few months later, in February of 2013. The Request for Proposals was released in June of 2014, with Plenary Infrastructure ERMF selected as the preferred proponent in January 2015 (see

the sidebar for the list of key players involved in the project). The project is delivered through Infrastructure Ontario's Alternative Finance and Procurement model. The federal government provided \$94.8 million in funding for the project.

"This is an essential building block for building GO, as well as the seamless transit network that the people of Durham (Region)

CEO Phil Verster in the fall.

The new \$859.2-million East Rail Maintenance Facility (ERMF), which ranked #56 on our 2017 Top100 Projects list, provides a modern facility located in the eastern part of the GO network in the town of Whitby. The site includes 5000,000 square feet of maintenance buildings. There is room for storage of 13 12-passenger car trains,

"This is an essential building block for building GO, as well as the seamless transit network that the people of Durham (Region) and the entire Greater Toronto Area need." — Steven Del Duca

and the entire Greater Toronto Area need," said Ontario minister of transportation Steven Del Duca, who toured the new facility alongside Metrolinx president and

with over 15 kilometres of track for storage and maintenance. The maintenance portions of the track include 12 spots for coach repair and 11 for locomotive repair, as well as two

preventative maintenance bays and additional capacity for train and locomotive washing. The main building is built targeting Leadership in Energy and Environmental Design (LEED) Gold certification. At the peak of construction, the site had upwards of 1,000 workers onsite. At full operation, it is expected that 300-400 workers will be employed at the facility.

“This facility is strategically located exactly on the corridor where we can manage the logistics,” said Verster. “When you look at the facility and the different levels of access equipment that are in there, it really is state-of-the-art.”

The completion of the project couldn't come at a better time for Metrolinx, as the Government of Ontario has already announced plans to expand GO service from Oshawa to Bowmanville by 2024, adding a further 20 kilometres to the eastern portion of the GTHA rail corridor.

With the electrification of the rail line already underway and increases to service being announced annually, the addition of the East Rail Maintenance Facility has become a key asset for the continued expansion of rail service in and around Canada's largest city. ✦

Andrew Macklin is the editor of ReNew Canada magazine.

ERMF's Key Players

Here are the key players involved with the East Rail Maintenance Facility project:

Project Manager

- Infrastructure Ontario

Engineer

- AECOM
- Arup
- Hatch

DBFM Team – Plenary Infrastructure ERMF

- Arup
- Bank of Montreal
- Bird Construction
- Honeywell
- Kiewit
- Plenary Group
- Stantec

- TD Securities
- Toronto Terminals Railway

Other Key Players

- BTY Group
- Ernst & Young
- WSP
- Golder Associates
- Parsons
- Marshall & Murray
- Aon Risk Solutions

Supplier

- DECAST
- Canam Group

Legal

- Fasken Martineau DuMoulin LLP
- Dentons Canada LLP
- Gowling WLG
- Aird & Berlis LLP

Clarington

Ontario, Canada

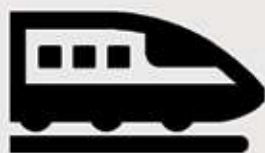
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Refurbishment Project;
Port Granby Project**
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Transit Expansion

Significant progress was made on Canada's largest transit project in 2017, the Eglinton LRT.

— Staff



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Canada is the only G7 country without high-speed rail. Two separate proposals could change that in 2018.



Could the Pearson hub, or Union Station West as some are calling it, be the first project under the new Canada Infrastructure Bank?

Credit: GVA



The future of the \$9.385-billion Site C Clean Energy project is still up in the air. But a formal decision of its future will have to be made early in 2018.

Credit: BCHydro

THE YEAR AHEAD

The stories bound to steal headlines in 2018. *By Andrew Macklin*

If anything can be said for the year that was in infrastructure, it's that we enter 2018 with more questions than answers for so many key projects across the country.

As discussed in our political expectations piece (*see page 22*), some of those unanswered questions are the result of political actions that have already come to pass. And with numerous elections slated for the coming year, we could face another calendar year where the powers that be cast a dark cloud over many of the assets we hope to see built or rehabilitated.

With that in mind, I have identified 13 key storylines that are bound to make headlines throughout 2018. With billions of dollars

and thousands of jobs at stake, how these 13 stories play out in the coming year could very well determine the future priorities of infrastructure development across this country.

Here are the 13 stories to watch for 2018, presented in no particular order.

Canada Infrastructure Bank

It wouldn't be impossible to create a list on 2018 infrastructure-industry headlines without starting with the Canada Infrastructure Bank (CIB). We have already seen the first example of just how the bank could work with the development of the

\$6.04-billion Réseau électrique métropolitain (REM) project in Montreal. With a growing list of projects that could be considered for the bank starting to accumulate, this should be the year when the money starts to flow to at least a few key infrastructure priorities.

The Pearson Hub

Speaking of potential targets for the CIB, the proposed transit hub at Pearson International Airport near Toronto makes good sense so long as the business case is viable. There is no question that the airport needs better links to current and proposed regional transit systems, and the hub can fill the void.

Northern Corridor

The concept of a Northern Corridor that would provide a transportation link from coast-to-coast-to-coast gained traction in 2017 thanks to discussions in the Senate in June. With a projected cost of \$100 billion according to a 2016 estimate, this could be the year where the Government of Canada could decide to spend the money on a business case for the massive project.

High-speed rail

Speaking of business case, we discovered in 2017 that a report commissioned by the Ontario government suggested that \$21 billion for a high speed rail link between Toronto and Windsor did make fiscal sense. Then, just a few months later, we learned of the potential for a second high speed rail link, one that would link Vancouver to Seattle and Portland. If there truly is a financially responsible case to be made for either project, could we finally see the development of high speed rail in Canada?

A new highway for Fort McMurray

In May of 2017, we learned that the Government of Alberta was dedicating \$5 million to the design of a new highway to run through Fort McMurray. Dubbed the East Clearwater Highway, it is designed to link Fort McMurray, Fort McKay, and multiple oilsands sites to Highway 881. A basic concept submitted by the municipality of Wood Buffalo estimated that the route would cost around \$1.5 billion. Will the development of this new highway become Alberta's biggest transportation priority for 2018?

Cross-border connections

The political uncertainty caused by our neighbours to the south has not slowed the development of multiple cross-border power projects, aimed at providing renewable power (initially) to customers in the U.S. In 2017, three key projects came closer to reality thanks to regulatory approvals, with the ITC Lake Erie Connector, Manitoba-Minnesota Transmission Link, and the Champlain-Hudson Power Link all nearing the initial phases of construction. And with power producers in Quebec and Atlantic Canada expressing interest in Massachusetts' call for 9.45 terrawatt hours of new renewable energy by 2022, Canada is poised to capitalize on American energy needs.

Smart Cities Challenge

Prime Minister Justin Trudeau announced at the Federation of Canadian Municipalities' annual conference in June that the government would be committing

tens of millions of dollars to a nationwide Smart Cities Challenge. As municipalities across the country prepare their proposals throughout this year, we should see some innovative solutions for building more resilient communities throughout Canada.

What will they do next?

Every change in government creates the potential for a shift in infrastructure priorities. But few predicted the lengths to which the decisions of the former B.C. Liberal government under Christy Clark would be challenged by Premier John Horgan when he took office. In the first few months, he called for the review of multiple projects, including the now \$9.36-billion Site C Clean Energy Project, and tasked the new minister of transportation and infrastructure with analyzing the transit and transportation priorities of the mayors in the Greater Vancouver Area. With the majority of NDP support settled in the GVA and surrounding region, what impact will that have on infrastructure development in the province as a whole?

Tunnel or bridge?

One of those transportation priorities in the GVA is the replacement of the George Massey tunnel. Under the previous government, it was decided that the tunnel would be replaced with a 10-lane bridge. However, when it was announced in September that an independent review would be held of the George Massey Tunnel Replacement project, and that the companies involved in the cancelled Request for Proposals process would receive up to \$2 million to cover the costs, the uncertainty grew exponentially. In 2018, we'll find out if the uncertainty was all for naught, or if a new direction will be taken for this vital transportation link.

A tale of two bridges

Speaking of bridges, on the same day that the B.C. government announced the review of the Massey project, the federal government announced its approval of the Ambassador Bridge Enhancement Project. With an early cost estimate of US\$1 billion, the replacement of the 87-year-old structure comes despite the continued development of Gordie Howe International Bridge. Can these two projects really co-exist? Is there enough current, and future, cross-border transportation demand to make both of these projects viable for decades to come?

Bombardier

I think it is safe to say that this could be a make-or-break year for Bombardier when it comes to its involvement in the

transportation industry. I think it's also safe to say that no company playing in the Canadian infrastructure industry suffered more negative headlines in 2017 than Bombardier did, considering its ongoing disputes with Metrolinx, issues involving the Waterloo ION LRT, and the TTC's decision to look elsewhere for new light rail vehicles for its current and future projects. If Bombardier is able to fix its supply chain issues, solve its problems surrounding low-floor capabilities and software malfunctions, and meet some of its delivery targets for Toronto's multiple transit projects, then we could be singing the praises of their turnaround at this time next year. If not, then it could open the door wide for companies like Alstom, Siemens, and others to find new market share here in Canada.

Challenges facing Toronto

It's hard to talk about infrastructure and not mention the significant opportunities and challenges facing Canada's largest city. With billions in projects underway, and billions more scheduled but unfunded, Toronto will need to find new revenues to build the infrastructure that it has recognized as priorities. And with both provincial and municipal elections scheduled for 2018, funding the unfunded could have a major impact on who governs the city at the end of this year.

The Pan-Canadian Framework

Released in the fall of 2016, the Pan-Canadian Framework on Clean Energy and Climate Change signalled that the federal government would push infrastructure development towards the demands of a low-carbon economy. The report suggested the use of a green lens for looking at projects, and the need to change the procurement system for infrastructure development. As we enter 2018, we still don't have a clear understanding of what that looks like, and how it will impact the business of infrastructure. 🌱

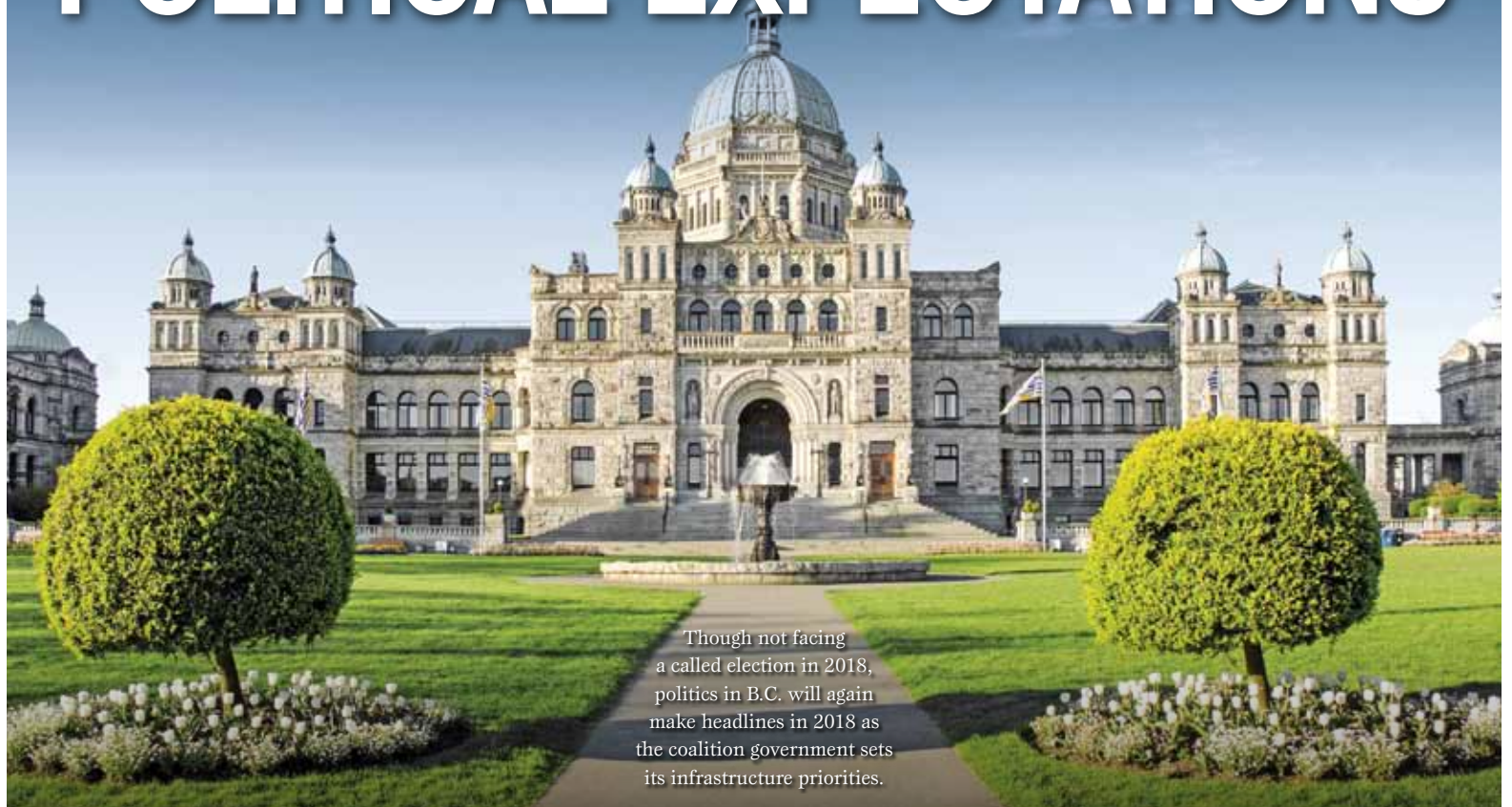
Andrew Macklin is the editor of ReNew Canada magazine.



There is no shortage of important storylines playing out in 2018.

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POLITICAL EXPECTATIONS



Though not facing a called election in 2018, politics in B.C. will again make headlines in 2018 as the coalition government sets its infrastructure priorities.

People, policies, and elections to watch in 2018. *By John Allen and David Caplan*

2018 promises to be an interesting year for Canadian infrastructure. Major projects worth billions of dollars are moving towards construction, and as usual there is the drum beat of elections over the year. In 2018, Ontario, Quebec, and New Brunswick all go to the polls in provincial elections. Municipalities in Ontario, British Columbia, Manitoba, and Prince Edward Island are also voting. It will also see a ramp up in activity as Canada has its federal election in October 2019 with two new opposition leaders wanting to make their mark.

The good news is that right across the political spectrum infrastructure is now a priority. The danger is that under overall spending targets specific projects can fall victim to changes in government. Most provinces and major municipalities have long-term infrastructure plans in place, and the greater the business and quality of life cases made for each project, the more likely it is to survive a change in government.

Taking a step back there are three major emerging issues that will have broader implications for infrastructure: procurement, financing, and the external impact of climate change.

Transformation to procurement

On September 21, 2017 the Comprehensive

Economic and Trade Agreement (CETA) between the European Union and Canada provisionally came into force. While much focus has been on the potential for increased flow of goods, which may mean the need to upgrade port facilities, the biggest change for infrastructure comes in procurement.

Provinces and municipalities are responsible for 90 per cent of the infrastructure spend in Canada. For the first time, provincial and municipal infrastructure markets are open to competition from outside Canada—albeit with some small exceptions. And for construction, there is a threshold of around US\$5 million. The signing of CETA has also pushed Canadian provinces into opening up procurement across internal boundaries—it would be politically awkward for European companies to have better access to the Canadian market than Canadian companies.

Many municipalities made symbolic votes to be excluded from the agreement but will have to live up to much more stringent standards from now on. The biggest change will see the removal of any conditions that requires a bidder to have prior experience with the procuring entity or in the territory in question. Greater transparency around decision-making is required, and both the EU and Canada are required to introduce a

challenge process that may see procurements temporarily suspended. Some have pointed to this shift in procurement as a spur for industry consolidation in Canada.

Role of the infrastructure bank

To many in the infrastructure sector the Canada Infrastructure Bank currently provokes more questions than answers. 2018 will see the role of the bank begin to take shape. With a new CEO in place and a team recruited, work will soon get underway.

The mandate of the bank as set down in legislation is broad. It covers becoming a centre of expertise on best practices for infrastructure; promoting evidence-based decision-making; data-sharing; attracting private investment; and investing in revenue generating projects.

The last two roles are where the most question marks have been raised. The availability of revenue-generating projects is limited and private investors are hungry for that type of project. Where infrastructure banks have proven successful is around absorbing the risk that makes projects unfeasible, for example First Nations' water systems, transit projects, or Via Rail's Toronto-Montreal high-frequency rail plans. The future of federal assets like airports and ports will also be clearer in 2018 after

the initial attention they received when the infrastructure bank was first announced.

Climate change money

The federal government has committed \$26.9 billion to green infrastructure over the next 12 years which could be spent on water systems, transit, hydro connections, retrofits, and much more. Green infrastructure has become a fairly broad term.

Most provinces have also signed up to the Pan Canadian Framework on Clean Growth and Climate Change, with Saskatchewan and Manitoba the two holdouts. With the revenue this generates from either cap and trade schemes or carbon taxes, how this money is spent and the impact it has in cutting emissions will come under increasing scrutiny as leaders of opposition parties in both Alberta and Ontario have pledged to scrap current systems (although the latter does back carbon pricing).

Another challenge will be to see how climate change is factored into project procurement. Innovation that could deliver real emissions reductions is a growing opportunity, but environmental performance often finishes second to cost considerations. Initiatives like the Municipalities for Climate Innovation Program, which is administered by the Federation of Canadian Municipalities, should help to provide greater coherence across Canada.

2018 is takeoff

Behind these broader initiatives and issues is a project pipeline that is quickly becoming the envy of countries around the world. Major rail, energy, and transport projects will be awarded in 2018, adding to a healthy roster of social infrastructure. Infrastructure Minister Amarjeet Sohi estimates that pipeline of up to \$800 billion is committed over the next decade. It is a good time to be involved in infrastructure in Canada.

Six people to watch in infrastructure in 2018

Patrick Brown: The leader of Ontario Progressive Conservatives is building up towards an election in June 2018. The provincial Liberals have ratcheted up spending promises for infrastructure year-on-year with a commitment of \$156 billion over the next 10 years. With polling currently pointing to a possible change in government, Patrick Brown has made no indication that he would cut spending, and has instead focused his criticism on the management of that spend. As with most changes in government, some projects could find themselves falling down the priority list,



but he appears less likely to cancel projects that are well advanced in procurement.

Bonnie Crombie: Exciting things are happening in Mississauga and mayor Crombie has been a driving force behind them. Mississauga is quickly becoming the pin-up for how intelligent infrastructure investment can be a catalyst for city transformation, with exciting developments on the lakeshore and in the core. The contract for the Hurontario light rail transit project will be awarded in 2018, there is a growing case for a major transit hub to be developed at Pearson airport, and the city expects \$40-45 billion in new construction to be invested over the next 15 years.

Valérie Plante: The new mayor of Montreal came from relative obscurity to win the November 2017 election on a promise of investment in transit and investments in social housing. In the short term, she is pushing for more buses, but the possible extension of Montreal's blue line is a priority, and she put forward a new 29-stop subway line dubbed the 'pink line'. It will be interesting to see how her plans work with the massive investment underway to build a \$6 billion light rail network in the city being led by the province's pension fund, and any future projects they may take on.

Catherine McKenna: The federal environment and climate change minister has been regarded as a top performer in the Trudeau government. With the federal government brokering a national framework on tackling climate, much of the money generated will go into investments in areas like transit and electricity. The impact she will have globally is also worth watching, as the alliance she has struck up with the UK

government to phase out coal globally could see opportunities for Canada's nuclear and renewable companies, and a stimulus for LNG infrastructure.

Rachel Notley: The Premier of Alberta won election in 2015 and soon after committed to transform the province's electricity system to move off coal by 2030, brought in former Bank of Canada governor David Dodge to advise on the province's capital plan, and pulled back from using public-private partnerships. With an election due in 2019 and a united conservative opposition led by political heavyweight Jason Kenney threatening to roll back many of her initiatives, she faces a fight to win another mandate and cement her infrastructure legacy.

John Horgan: After forming government in June 2017, the new NDP government promptly cancelled the planned George Massey tunnel replacement, sent the Site C Dam project to review, and cancelled bridge tolls. With the threat of election always looming over minority governments, he will want to show that his government is delivering for voters and is a safe pair of hands. He has focused his attention on urban transit and replacing the 80-year-old Pattullo Bridge, and has struck up a good working relationship with Metro Vancouver. ♣



John Allen is the vice-president of Global Public Affairs. David Caplan is the outgoing vice chair of Global Public Affairs.



All Photos: Rick Hazel



The Northeast Anthony Henday Drive project in Edmonton represents a legacy in infrastructure that Aecon will continue under its new ownership.

A NEW ERA FOR AECON

The rationale behind selling the company to CCCI. *By John Beck*

As the president, chief executive officer, and founder of Aecon, I have worked in the construction industry for more than 50 years. Over that time, our company has been involved in the building of a number of iconic Canadian landmarks and has shared our expertise on projects around the world. I am proud of our rich history and the contributions we have made to the industry and the country, but I also see the need to change if we want to continue to make a meaningful contribution to the next wave of infrastructure development in Canada and abroad. This is why I welcome the opportunity to join with CCCC International Holding Ltd. (CCCI), part of China Communications Construction Co., Ltd. (CCCC).

The changing environment for infrastructure projects has been well-documented by ReNew Canada. Hundreds of billions of dollars have been committed across all levels of government to invest in rebuilding and strengthening Canada's

infrastructure. Not only are the number of projects much greater, so too is the size and complexity of each. Of the largest infrastructure projects in Canada in 2017, the top 50 are each valued at \$1 billion or more, with nine topping \$5 billion. This new reality has also seen significant change in procurement and delivery models, with many projects now using Public Private Partnership structures such as Design-Build-Finance, Design-Build-Finance-Maintain, and Design-Build-Finance-Operate-Maintain. In order to respond to the demands of a growing infrastructure market proponents need significant scale in human and financial resources to compete.

The construction industry is highly fragmented in North America with an estimated 710,000 engineering and construction firms, only two per cent of which have more than 100 workers, while 90 per cent have 10 workers or fewer. In response to this, governments and others looking to build complex, very large projects

have been actively recruiting the biggest international firms to stake a presence in Canada, to ensure a competitive marketplace of qualified bidders, with the required scale and financial capacity.

Yet, recruiting international players has not always worked. Domestic industry leaders have long been able to point to examples of larger projects where global firms, unfamiliar with local conditions, labour markets and construction practices and regulations, failed to deliver as promised. We strongly believe we have found the right solution for this challenge in our partnership with CCCI—one that combines international technology and resources with domestic know how and capabilities. This is a partnership that will benefit the people that work for Aecon and the clients we work with.

Joining with one of the world's largest construction companies gives us immediate scale, which would have been nearly impossible to achieve organically. We will have increased access to capital and an ability

to bid for larger and more complex projects in Canada, thereby enhancing domestic competition for construction services while also enabling our company to compete for more international projects. Our unparalleled experience working across Canada, on a wide spectrum of infrastructure projects including highways, bridges, airports, tunnels, public transit systems, hydroelectric generating stations, and wastewater treatment facilities, ensures our local understanding translates to local successes.

I am especially excited about CCCI's impressive track record of acquisitions that has helped the acquired entity achieve their strategic vision and reach new levels of growth. This is supported by their 2015 acquisition of John Holland Group, one of Australia's leading construction companies. When CCCI acquired John Holland the Australian market was very similar to Canada's, a fragmented local industry competing with some of the biggest players in the world. The growth in size, costs, and complexity of local projects put domestic businesses at a competitive disadvantage, but the need for local knowledge and experience was as much an issue in Australia then as it is in Canada today.

Since being acquired, John Holland has seen a remarkable surge in its business. Over the course of 2017, it secured a record \$23 billion (Australian) in tenders for large public infrastructure projects, and is on a 15-month hiring drive that will see the business grow by more than 45 per cent. A rich pipeline of work and potential for growth led the company to open its first office in Singapore not long after it had been acquired. In short, John Holland was competing for projects that had previously been out of reach in both Australia and beyond, all while being led by an Australian management team, continuing to operate under the John Holland brand and staying true to the company's core values. The acquisition worked because it created unique value in the Australian market. We see a similar outcome in Canada with our arrangement—one that will continue Aecon's legacy of being the partner of choice for Canadian infrastructure development.

As much as I see this transaction enabling Aecon to be a more competitive player in Canada in the immediate future, joining a global leader also provides us an appropriate platform for long-term success in an industry that is poised to go through transformative changes. The North American construction

industry has generally been slow to innovate and adapt, but the tides of change are coming. In my opinion, a more globalized economy with a faster paced work environment and increased urbanization will demand innovation. Aecon embraces this challenge by adopting an innovative lens in all we do. With the support of CCCI we will continue to prioritize technology and innovation to reduce project delays, improve safety, working conditions, and environmental compatibility.

As I reflect on the past 50 years at Aecon I am proud of our people, our projects and the company we have become. Looking to the future I want Aecon to be at the forefront of applying new technologies and new methodologies to building better outcomes at home and abroad. Joining a global leader opens the door for us to be part of this transformation, making profound change to improve lives around the world. Now that's something to be proud about. ♣



John Beck is the president and CEO of Aecon.

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CORPORATE SOCIAL RESPONSIBILITY

Why CSR is needed in the development of Canadian infrastructure. *By Chris McNally*



The concept of corporate social responsibility (CSR) has become firmly entrenched in mainstream business culture both as an imperative to success and as a business development and leadership strategy. It intersects with wide-ranging ethical, social, labour, environmental, and other issues that affect the operating environment of a company. In the construction industry, CSR has been shown to pervade all stages of the business cycle from project approval to tender requirements, building, and successful project completion. It evokes a myriad of challenges and opportunities, and the evaluation of CSR initiatives by a return on investment measure has consistently yielded positive outcomes.

Unique to construction industry

The Canadian Construction Association (CCA) recently published *Corporate Social Responsibility in the Constructor Sector: A Practical Guide to CSR*. The guide is the first of its kind and unique to the construction industry. It is the culmination of an initiative undertaken by the CCA CSR taskforce to showcase the industry's leadership and unique perspectives.

Through consultation with the membership, the taskforce found that CSR is complementary to CCA's strategic plan. CCA's current strategic plan identified promotion of ethical business practices within the industry as an objective. In October 2015, CCA adopted a policy statement related to CSR encouraging companies to voluntarily undertake initiatives that enable them to operate in an economically, socially, and environmentally-sustainable manner.

The taskforce engaged in wide-ranging discussions on issues such as the distinction between CSR as a public relations strategy versus conscious capitalism, CSR as a relevant condition that governs whether projects go

forward and how contractors are impacted, the link between social capital and political capital, the critical significance of acquiring social license especially for large resource projects, and increased profitability resulting from the implementation of CSR practices.

The contents of the guide are based on interviews conducted with three categories of stakeholders: industry influencers (including members of the CCA Executive Committee), CSR practitioners (including member companies of CCA), and external stakeholders.

Essential tool to support relationships

Population growth and urbanization in Canada and elsewhere are driving demand for construction and infrastructure to new

completed project.

Another force driving CSR is that the municipal asset owners and members of their communities increasingly want to see Canadian construction companies articulate the environmental and social impacts of what they do and how these impacts are addressed. The convergence of issues ranging from triple-bottom line procurement (e.g., balancing commercial and sustainability considerations a.k.a. people, planet, profit) to carbon neutral regulations, as well as zero waste 2030 initiatives, is unprecedented.

CSR is an essential tool to support the industry's key relationships. In terms of government, it is perceived that a lack of trust is impeding the creation of effective



levels. In the future, this demand is expected to create pressure on strategic resources essential for the construction process, such as energy, raw materials, water, and even human resources. Construction, as a very visible activity, is under the spotlight locally. The quality of a company's relationship with the communities, where it operates and its efforts and investments in strengthening those local communities, can reduce delays during permitting and construction, reduce the risks of local protests during site works, and provide greater acceptance of the

industry partnerships. Moreover, the loss of construction opportunities in Canada may be attributed to trends such as social license, lack of investment in infrastructure, and policies that deter investment. Similarly, in terms of infrastructure, it is anticipated that asset owners will be more dependent on the acquisition of social license to proceed with new construction. Large infrastructure projects are subject to a rigorous examination of environmental and social impacts. Regarding labour, there is a perception that careers in construction are viewed as second choice.

Articulate environmental and social impact

CSR is defined as a company's voluntary initiatives and actions to improve its social and environmental performance and relations with its stakeholders. It is voluntary because a company can voluntarily choose which practices are most important to it to pursue, and because if it is mandatory (i.e., required by government regulation), it is not considered CSR. CSR is a reflection of a company's commitment to go beyond the codes and standards that construction companies are required to adhere to by law. Research shows that companies do well by doing good, and, over the long term, companies that have integrated CSR into their business perform better than those that have not.

Today, CSR has a broad scope: it includes how companies are run and managed, their ethics, culture, and operations, their relationships with employees, customers, suppliers, construction and other businesses, communities, industry associations, and governments, along with their construction practices and projects. "We see CSR as a business strategy," said Stephen Coote, chair of the CCA Business and Market Development Committee. "Although many construction companies may be practicing some aspect of CSR, we hope that with this easy-to-use guide, small, medium and large construction firms will be more encouraged to continue to develop, enhance, or implement a CSR strategy."

The guide identifies how value can be created for stakeholders while also creating value for the firm in the form of brand recognition, employee retention, cost savings, enhanced risk management, among other benefits. It offers a roadmap to the tactical implementation of voluntary measures that can increase your company's success. CSR and business success are not mutually exclusive but rather complementary. ♣



Chris McNally is the chair of the Canadian Construction Association.



For more information about the report, visit cca-acc.com

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APPOINTED



Andre Juneau

Andre Juneau has taken over as chief operating officer of the Windsor-Detroit Bridge Authority (WDBA), providing leadership to the organization while

Michael Cautillo is on leave.

“Mr. Juneau has accepted a position as Chief Operating Officer (COO) with WDBA to lead the senior leadership team with the important work that we have to do,” said Mark Butler, director of communications for the WDBA. “WDBA’s Board of Directors has assigned the CEO’s authorities to the COO while our CEO remains on a leave of absence.”

Juneau had originally served on the board of directors of the WDBA, and has resigned his post to take on the COO duties. Juneau helped create the federal department of infrastructure in 2002, and was named the department’s first deputy minister. In 2004, he played a key role in negotiations for the distribution of federal gas tax monies to municipalities.

Michael Cautillo stepped away from his position in late August to deal with a personal matter. At this time, there is no indication as to when Cautillo will return to his duties as CEO.



Mary Van Buren

Mary Van Buren has taken over as president of the Canadian Construction Association.

Van Buren has worked in the private, public, and not-for-profit sectors and has held executive roles at leading associations and not-for-profits, including the Canadian Medical Association’s subsidiary, MD Financial Management, and Export Development Canada. In her most recent role as vice-president of marketing and IT at the Canadian Real Estate Association, Mary led a team of 60 to grow its premier services, REALTOR.ca, and WEBForms in the double digits.

CCA is celebrating its centennial in 2018 and currently going through a strategic planning exercise. “Mary’s background in strategy and marketing will be an asset shaping the plan for the next five years and communicating our new priorities and

initiatives to our partner associations and members,” said **Chris McNally**, CCA chair.

Van Buren takes the reigns from **Michael Atkinson**, who first joined CCA in 1981, and has held CCA president’s position since 1993. “Michael has been absolutely instrumental to CCA’s success for several decades,” said McNally. “We all wish him happy retirement.”



Rupen Pandya

Rupen Pandya has been promoted by the Government of Saskatchewan following a successful tenure as president and CEO of SaskBuilds. The news came as part of an announcement from interim deputy minister to the Premier and cabinet secretary, Kent Campbell regarding changes to the government’s senior public service leadership team.

Pandya has been appointed as the new deputy minister of Finance. Pandya brings more than 20 years of progressive leadership experience in the Government of Saskatchewan including senior roles in the Ministry of the Economy and the Ministry of Advanced Education, Employment, and Immigration.

Ron Dedman has taken over as acting president and CEO of SaskBuilds until a formal replacement for Pandya is in place.



Mike Wieninger

Dave Filipchuk, president and CEO of the PCL family of companies, has announced leadership appointments within the office of the CEO.



Roger Keglowitsch

Mike Wieninger has been promoted to chief operating officer, Canadian Operations, responsible for PCL’s Buildings and Civil operations across all provinces. He is a member of the office of the CEO and brings over 20 years of experience with the company to his new position. He was most recently PCL’s executive vice president, Canadian Buildings, and before that was Toronto’s senior vice president and district manager.



Chris Gower



Todd Craigen

Roger Keglowitsch has been promoted to chief operating officer, Heavy Industrial, and is a member of the office

of the CEO. As chief operating officer Keglowitsch is responsible for PCL’s heavy industrial operations across North America. He joined the PCL family in 1992 and since that time has served in various capacities of increasing responsibility.

Chris Gower moved into the role of chief operating officer, Buildings, last November and oversees the performance of PCL’s buildings operations across all borders. He will continue in this role, and Mike Wieninger, in his new position, will report to him. Gower has been with PCL for 22 years.

The PCL family of companies would like to congratulate and express its sincerest gratitude to **Rob Holmberg** and **Ian Johnston**, who are retiring from their respective positions of president and COO, Canadian and Australian Operations, and COO, Heavy Industrial.

PCL also announced the appointment of **Todd Craigen** to senior vice president and district manager of PCL Constructors Canada Inc. (Toronto).

Reporting to the president of Eastern Canada, Jim Dougan, Todd has overall responsibility for PCL’s operations in the Greater Toronto Area and southwestern Ontario, and succeeds **Mike Wieninger**, who has transitioned to PCL’s North American headquarters as chief operating officer of Canadian Operations, as announced on November 1, 2017. Vice president and district manager **Bruce Sonnenberg** and district manager **Kelly Wallace** support Todd in overseeing PCL Toronto, the largest district within the PCL family of companies.



David Caplan

The Ontario Road Builders’ Association has announced the hiring of **David Caplan** as its new chief operating officer.

Caplan is best known as Ontario’s first minister of infrastructure, serving in the role from 2003-2007. He was first elected as a Member of Provincial Parliament in the riding of Oriole in 1997, before being elected to the new riding of Don Valley East in 1999, which he represented until 2011. He most recently served as the vice-chair of Global Public Affairs in Toronto, and has been a regular contributor to ReNew Canada.



Helen Platis

Quality Urban Energy Systems of Tomorrow (QUEST) has hired **Helen Platis** as its new director of client services.

“Bringing over 20 years of dynamic leadership and experience cultivating relationships with key personnel to QUEST, Helen’s role is to lead our business development activities and ensure QUEST subscribers are receiving maximum value for their participation,” said **Brent Gilmour**, executive director of QUEST.

Having previously held senior roles with Stantec, SKY Solar Canada, Direct Energy, and Union Gas, Platis is well positioned to assess the needs of the Smart Energy Communities marketplace, and play an important role in helping QUEST achieve its vision of every community in Canada being a Smart Energy Community by 2030.

RESIGNED



Andy Byford

The Toronto Transit Commission (TTC) announced that chief executive officer **Andy Byford** has left his position to take over as the new president and

CEO of the New York City transit.

Byford spent more than five years at the helm of the TTC, having started as the chief operating officer. He was then promoted to the top job just a few months later, following the removal of **Gary Webster**.

Byford is best known for his five-year plan to modernize the TTC, as well as introducing a more positive, customer-driven approach to the agency. He leaves just as one of the largest projects of his tenure, the \$3.18-billion Spadina Subway Extension, opens to the public.

Byford’s resignation was effective in mid-December, with his new post in New York City starting in January.



Submit your corporate or association people news to andrew@actualmedia.ca

All photos: ReNew Canada



OECD Angel Gurría with Colombian President Juan Manuel Santos.



Michael Sabia, CEO, Caisse de dépôt et placement du Québec (CDPQ) with Jean-Louis Chaussade, CEO, SUEZ.



Douglas Turnbull, vice chairman and country head, Canada, for DBRS.



Christoph Frei, secretary general of the World Energy Council.



AECON president and CEO John Beck.

TORONTO GLOBAL FORUM TORONTO, ONT.

More than 3,500 global industry leaders in the energy, infrastructure, manufacturing, finance, and environment sectors converged on the annual Toronto Global Forum, hosted by the International Economic Forum of the Americas.

With this year’s theme of Redefining Globalization, presentations focused on the companies, technologies, and innovations that are changing the way business is conducted.

Among the discussions at this year’s forum was strategies for reaching our global emissions targets. According to one global leader who spoke at the event, it is our cities that must be the driving force meeting our reduction targets.

“If the solution doesn’t come from cities, where does it come from?” said **Christoph Frei**, secretary general of the World Energy Council (WEC).

Frei joined a panel discussion that included Toronto Hydro CEO **Anthony Haines**, IESO president and CEO **Peter Gregg**, and Energy Council of Canada president **Graham Campbell** for a discussion on forecasting our energy future.

Frei discussed three plausible scenarios for energy use globally as identified by WEC: jazz, symphony, and hard rock. Jazz represents a rhythmic energy provision, one where the cheap, renewable solution is the one able to be adopted globally. Symphony involves a ‘director’, one that is charged with discovering and implementing the best energy solution for a given state, province, or country. Hard rock reflects an inward solution, a fragmented approach that will be

more expensive since its lack collaboration with national and global experts, and is also dirtier and less stable because of its isolation.

Moving towards the most ideal scenario, where cheap, renewable energy and strong conservation and efficiency measures will, in part, only be plausible if cities help create solutions. In his presentation, Haines spoke to some of the measures already taken by the City of Toronto. He mentioned that around 200 new condominiums has been added to the city in recent years without adding a single megawatt of energy use to the grid. That has been the result of smart energy solutions within the city, along with conservation measures and changes to the community’s building requirements at the municipal level.

But as much as those solutions, ones that are needed in all cities around the globe, are incredibly beneficial for emissions reductions, there are other challenges urban centers will need to solve in order to help meet global climate targets: congestion, pollution and land availability for the transport sector for starters. The electrification of vehicles, and having urban centers that build the necessary infrastructure for this sector, will be key according to Frei. He also suggested that energy storage solutions, ones that can capitalize on capturing energy offsets from current production use in residential and commercial buildings, will be an important factor as well.

The 2018 Toronto Global Forum is being held December 10-12. For more information, visit forum-americas.org/toronto.



Minister of Indigenous Services Jane Philpott.



CCPPP board chair Mark Bain provides opening remarks for the 25th annual conference.



Canada Infrastructure Bank board chair Janice Fukakusa.



Mayor of Toronto John Tory.



Minister of Infrastructure and Communities Amarjeet Sohi.



David Collette, special advisor to the Ontario ministry of transportation on high speed rail.

P3 2017 TORONTO, ONT.

The 25th annual Canadian Council for Public-Private Partnership conference, P3 2017, drew more than 1,200 delegates including representatives from almost every continent.

Toronto, the current epicentre of infrastructure development in Canada, played a prominent role in the two days of discussion. Mayor **John Tory** suggested that the city is more than ready to welcome opportunities for infrastructure funding support from private entities through the Canada Infrastructure Bank (CIB). Facing an estimated \$30 billion unfunded infrastructure backlog, the city is eager to have discussions with pension funds and private investors on how to work together to reduce Toronto's priorities.

As expected, the CIB was a key topic

of conversation throughout both days, including a presentation from board chair **Janice Fukakusa** and a panel discussion on Canada's New Infrastructure Frontier and how the bank can drive the development agenda forward. With the rest of the board members named in the days following the conference, it is expected that project development will get underway in early 2018.

A presentation from **Dan Doctoroff**, CEO of Sidewalk Labs, discussed how the company plans to transform part of Toronto's waterfront through urban innovation. The company will develop Quayside, a 12-acre portion of the waterfront south of the downtown core, into a smart city that uses data and technology to drive its operation.

Outside of the multiple talks on the

development of infrastructure in Canada's largest city were several talks surrounding opportunities in remote regions of Canada, including in First Nations communities. According to Minister of Indigenous Services **Jane Philpott**, there is immediate need for health care, water/wastewater, and energy solutions for First Nations communities throughout Canada. And for the latter, implementation of renewable energy resources to bring communities off of diesel presents a real opportunity for P3s.

"We certainly have a goal to be able to phase out diesel in so many communities in the far north that are highly dependent upon it. And there are, in fact, excellent models out there of public-private partnerships that are working to address those gaps."

TRANSPORTATION SUMMIT 2017 TORONTO, ONT.

The newest player in the Canadian infrastructure landscape is an eager collaborator.

Speaking to a packed room at the Transportation Summit 2017, hosted by the Toronto Region Board of Trade, Canada Infrastructure Bank (CIB) board chair **Janice Fukakusa** discussed how the CIB will work together with entities like Infrastructure Ontario and Metrolinx to facilitate the construction of new assets across the country. She suggested that the bank will work as a "facilitation mechanism" for getting projects developed with financial support from the private sector.

The private sector can provide its ingenuity to infrastructure development, which will be a welcome new perspective as projects are brought forward according to Infrastructure Ontario (IO) CEO **Ehren Cory**. Cory cited design innovation as one of the areas where

private sectors can lend a new voice that will help improve the overall quality of the public sector infrastructure projects developed in cooperation with the bank.

The discussion evolved to look at the need for project managers and financiers like the bank, IO, and Metrolinx collaborate with the teams that are working to build new infrastructure. **Phil Verster**, president and CEO of Metrolinx, talked about the need to look beyond the initial build to the 30-year 'marriage' commitment created through the Alternative Finance and Procurement (AFP) development model. He suggested that engagement with the private sector must be very clear, with each party understanding exactly what the expectations are over the course of the multi-year relationship.



Fukakusa, Verster, and Cory discuss the need for collaboration.

Communication is at the heart of that relationship, and understanding what trade-offs you are or are not willing to accept needs to be established early. Cory stated that "there is no scenario in which quality can be compromised", which is why the schedule for the project's construction often becomes the "part of the balloon that can expand" as he eloquently stated.

As the Canadian Infrastructure Bank moves forward in 2018, expect a collaborative environment in dealings with IO and Metrolinx.

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Former Ontario premier Bob Rae delivers his keynote address.



Now-past-president Andrea Bourrie.



Ryerson university students Greggory Hanson and Keira Webster discuss the need for wet infrastructure in urban centres.

AI Photos: ReNew Canada

OPPI CONFERENCE COLLINGWOOD, ONT.

The Blue Mountain Resort near Collingwood played host to the annual Ontario Professional Planners Institute conference in early October.

With hundreds of professional planners from municipalities across Ontario, and industry stakeholders from across Canada, the conference provided a forum for a wide range of issues impacting the industry. From agriculture and urban forestry to leadership and ethics, the important issues facing the day-to-day responsibilities of professional planners were engaged during the three-day event.

On day two of the event, former Ontario premier **Bob Rae** was on hand to provide a keynote presentation entitled Building Institutions based on Respect for Indigenous Peoples. Rae, who led the province as premier under the New Democratic Party banner from 1991-1995, stressed the importance of listening in the context of working with Indigenous communities across Canada.

“it’s just about showing respect and an ability to go in and listen,” Rae said. “Rather than saying ‘here’s the project, here’s what we’re going to do.’”

Doing so means incorporating concepts such as the seven generation principle, which forces planners to plan beyond the need of now. By doing so, sustainable infrastructure is created, which in turn becomes infrastructure that has the greater public benefit over time. And sustainability, as Rae suggests, is an issue of great significance to Indigenous communities across Canada.

“I think the Indigenous value system [...] has a lot of teachings about sustainability. The absence of sustainability in much of our policy thinking over the last 300 years is causing us a lot of damage, a lot of pain, and a lot of harm. And I think we would do very, very well to listen to Indigenous voices and their experience in what impacts things can have and how cumulative impacts can take place.”

Listening to those voices on sustainability can lead to great accomplishments, especially in the realm of future infrastructure. The opportunity to work with First Nations communities on infrastructure development has significant potential, but only if those looking to develop listen to the needs of the community.

“The cliché is that First Nations are opposed to development. In my view, in my experience, that is not the case,” Rae said. “What is the case is they’re opposed to development that doesn’t appear to have any benefit for them, and it’s just designed to benefit other people.”

By listening to the needs of these communities, needs like financial benefit, sustained employment, and improvement to the environment, planners can work with First Nations communities, municipalities, and contractors to create resilient infrastructure for the next seven generations.



L-R: Jim Fonger, Client Solutions Developer, Ameresco (Award sponsor); Neil Jacobsen, Deputy City Manager, City of Saint John; Paul Kariya, QUEST Board of Directors.



QUEST senior lead for national affairs & services Tonja Leach presents to a capacity crowd.



The conference offered tours of smart energy systems in the capital region.

AI Photos: QUEST

QUEST2017 OTTAWA, ONT.

Quality Urban Energy Systems of Tomorrow (QUEST) held its 11th annual Smart Energy Conference in Ottawa. The three-day program included insightful keynote panels discussing Canada’s new reality, and the value that Smart Energy Communities have to offer in addressing our energy and climate change goals. Participants heard from some of Canada and the world’s leading minds, and sat down

with experts in a variety of different fields to tap their knowledge, leaving QUEST2017 with ideas on how to advance Smart Energy Communities in their own communities and businesses.

Natural Resources Canada indicated more than \$800 million from the 2017 Budget is being allocated to Smart Energy and it is working closely with QUEST to support Smart Energy Communities. **Kim Rudd**,

parliamentary secretary to the minister of natural resources, said at QUEST2017, “The world of tomorrow will require new approaches today, new ways of thinking, with a premium on innovation and imagination.”

Looking forward, QUEST will be hosting regional events in 2018 rather than a national conference. Details on those events will soon be available at questcanada.org.



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REACH OUT AWARD

The 2017 Brownie Award winners were recognized at a gala event in Toronto on November 22. Originally begun by the Canadian Urban Institute (CUI) in 2000, the awards are now presented by the Canadian Brownfields Network (CBN) in partnership with ReNew Canada's parent company, Actual Media. 20 nominations were received and 10 projects and individuals were recognized for their achievements:

REPROGRAM:

Legislation, Policy & Program Initiatives

WINNER: Contaminated Sites Approved Professionals Society, B.C.

REMEDiate:

Sustainable Remediation and Technological Innovation

WINNER: BC Hydro Rock Bay Project, Victoria, B.C.

REINVEST: Financing, Risk Management and Partnerships

WINNER: Port Credit West, Mississauga, Ont.

REBUILD:

Redevelopment at the Local, Site Scale

WINNER: New Eva's Phoenix, Toronto, Ont.

RENEW: Redevelopment at the Community Scale

WINNER: East Bayfront/Bayside Development, Toronto, Ont.

REACH OUT:

Communication, Marketing and Public Engagement

WINNER: Inspiration Port Credit, Mississauga, Ont.

BROWNFIELDER OF THE YEAR

WINNER: Lisa Fairweather, Alberta Environment and Parks, Edmonton, Alta.

BEST SMALL PROJECT

WINNER: The askiy Project, Saskatoon, Sask.

BEST LARGE PROJECT

WINNER: SunMine, Kimberley, B.C.

BEST OVERALL PROJECT

WINNER: Toronto Port Lands Due Diligence

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For further information on the 2017 Brownie Award dinner, winners and finalists, visit brownieawards.ca



By Todd Latham

If somebody asked you “what DON’T you know about Canadian infrastructure?” what would come to mind?

We don’t know when hyperloop (or even high-speed rail) will come to Canada (see the Editor’s Note on pg. 4) and we don’t really know if autonomous vehicles will rule the road by 2030 (as Bern Grush suggests on page 5). And, as good as our research is, the nearly \$200 billion represented in the 2018 Top100 Projects list (see insert in this issue) might actually be \$300 billion if you factor in life-cycle costs and carbon—we just don’t know, yet.

We don’t know if the next fleet of newly-elected municipal councillors will understand the value of public infrastructure asset management and be a champion for long-term planning with the municipal bureaucrats and operations staff, or if they will do only what is needed to get re-elected next term. Given my experience publishing ReNew Canada over the last thirteen years, I could take a guess, based on the amount of political interference and posturing on infrastructure files that we’ve seen. Don’t

get me started on how new regulations are often staged and politicized ahead of election cycles! Old habits lead to inefficient processes which lead to the same old, same old results. There is zero opportunity for innovation or acquired knowledge in “I don’t know how the new things work, let’s just do it the same way we have in the past.”

We don’t know if our federal government can follow through with its recent commitment to “end long-term drinking water advisories that last more than one year by March 2021,” but we do know there is a serious problem with the fact that water advisories exist in a country such as Canada. We don’t know what will happen with North Korea, or if bitcoin will continue to boom, or how many fish are in the oceans, but we do know that trigger-happy dictators should be stopped, that blockchain and cryptocurrencies will be revolutionary, and that many fish populations have dramatically declined since we were born. So on we go. We don’t know X, but we do know Y—and we offer that as a way to deflect our inability to answer X.

If anticipating all the unknowns in your job and opening your mind to such new answers wasn’t hard enough, we also need to double check what we do know just in case it’s “fake news.”

But it’s not hopeless. Most of us know enough to try and move in directions that advance Canadian communities and improve our way of life. So, every day we wake up thinking we’ll find an answer here or there, learn a new trick, or implement a positive solution. Those who have not already died professionally at their desks (you know who they are) should always endeavour to fix, build, collaborate, and innovate, even if we don’t actually know if our efforts will win the day.

Like my Grandma used to say, “you don’t know until you try!” ✿



Todd is the founder of this magazine and does not know enough to help his Grade 11 daughter with her physics, but her Mom does.



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2017: From Soils to Storms, and IO to AVs

It was a busy year for the Residential and Civil Construction Alliance of Ontario (RCCAO), with report topics ranging from managing excess soils and excessive stormwater, to proposing improvements to Infrastructure Ontario and preparing the province for vehicle automation.

1 SOILS: This report by environmental lawyer Frank Zechner concluded that Ontario's robust construction activity generated enough excess soil in one year to fill 16 Rogers Centres in Toronto. Zechner estimated that 25.8 million cubic metres of excess construction soil was produced in 2015 from municipal infrastructure, residential and ICI projects. Zechner pointed out that the province does not track or collect data on excess soil volumes: "This research helps to fill that void."

2 STORMS: Stormwater infrastructure in Ontario is in poor condition and under tremendous strain – that's why RCCAO teamed up with the Ontario Society of Professional Engineers and the Ontario Sewer and Watermain Construction Association for this report. It found that resources and funding are scarce for asset-management planning in municipalities across Ontario, and that an estimated \$1.2 billion would be needed to replace stormwater infrastructure in six focus municipalities alone (populations from 50,000 to 500,000).

3 INFRASTRUCTURE ONTARIO: Former Ontario deputy minister Michael Fenn's research demonstrated the value of public-private partnerships in the delivery of infrastructure. But to achieve a repeat of the post-war Golden Age of infrastructure,

with over \$200 billion now pledged by governments, Fenn argued for better infrastructure planning and project selection – with more innovation and more opportunity for Ontario firms and municipalities to participate.

4 AUTOMATED VEHICLES: If you thought Uber was a disruptor, wait until automated vehicles (AVs) and smartphone apps for "mobility on demand" begin to eat into taxi and public bus services in the early 2020s, then begin to shake up car ownership in the late 2020s, says a report by systems engineer and futurist Bern Grush. Improvements in vehicle automation, combined with a sharing economy, will vastly expand the robo-taxi and micro-transit juggernaut being readied by providers such as Uber, Lyft and Google for Ontario's cities and towns.

In addition to these reports, the quote below is from the Ontario Ministry of Infrastructure's long-term strategic plan released in November.

"Projects that may have the potential for bundling include bridges, roads and other facilities. For example, a recent study conducted in the County of Wellington by the Residential and Civil Construction Alliance of Ontario and Ontario Good Roads Association ... found that there was potential for municipalities to bundle bridge projects through an AFP model."

**Building Better Lives:
Ontario's Long-Term Infrastructure Plan 2017**

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Happy New Year and all the best in
2018 to ReNew Canada's readers!



Question today *Imagine tomorrow* Create for the future

We must all hold ourselves accountable for tomorrow. For us, that means engineering innovative solutions to the challenges the future will bring. Can we design a place where our communities can thrive?

We think we can.

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