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March/April 2021

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The Infrastructure Magazine

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The Infrastructure Magazine

MARCH/APRIL 2021

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Top100
Canada's Biggest
Infrastructure Projects

View this year's Top100 Projects
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annual celebration visit
renewcanada.net/top100-projects



GREEN INFRASTRUCTURE GETS THE GREEN LIGHT

By Connie Vitello

Canada's public infrastructure is currently "at risk," according to the most recent Canadian Infrastructure Report from the Federation of Canadian Municipalities.

At the same time, governments at all levels are pushing for decarbonization by 2050. We need more clean energy and sustainable transportation systems, stat.

While the coronavirus crisis is not something anyone in their right mind would wish for, it provided a pandemic pause that crystallized our priorities and prompted commitments for green infrastructure investments in Canada.

The feds finally came out with concrete climate action legislation and a plan to support *A Healthy Environment and a Health Economy* backed by \$15 billion. Project investments under the first intake of the Green Infrastructure stream will address emerging priorities in water infrastructure, disaster mitigation, and climate change. To better support communities during the pandemic, a new stream was added to the over \$33 billion Investing in Canada Infrastructure Program to help fund pandemic-resilient infrastructure.

The Canada Infrastructure Bank has earmarked \$10 billion from its overall \$35 billion current working budget for loan-based investments towards infrastructure deemed sustainable. This includes clean energy, zero-emission buses, energy efficient building retrofits, and large-scale broadband.

The Green Infrastructure – Electric Vehicle Infrastructure Demonstration program, which aims to accelerate the deployment and market entry of next-generation clean energy infrastructure, will help tackle transportation emissions.

The new \$14.9 billion public transit fund, the largest public transit investment in Canadian history, will also help build back better.

New investments such as these are a historic opportunity to address infrastructure gaps and reshape the nation's infrastructure in a more resilient and sustainable manner.

And there's now a President to the south with the awareness and appreciation of the severity of climate change—with a \$2 trillion plan to support sustainable infrastructure. At our InfraIntelligence webinar on the U.S. election impacts, there was a consensus that our energy asset owners will have greater opportunities to supply clean energy resources to bordering states and beyond.

Meanwhile, Prime Minister Justin Trudeau recently shuffled his cabinet, making appointments in key portfolios and signaling preparation for a possible spring election. He says he would rather not go to the polls during an ongoing pandemic, but the federal Liberals are operating as a minority government, so the next election could happen whenever opposition parties trigger a confidence vote.

Now is not the time for superspreader election events. The sporadic supplies of vaccines are slowly rolling out, but our health system is already strained. Now is the time to stay safe and make good on the promises we made during our pandemic pause. 🍁

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The Turcot Interchange is a critical transit artery in the Greater Montreal Area, carrying more than 300,000 vehicles per day. For more on Turcot's complex remediation and rebuilding project, turn to page 16

NEW CIB CLEAN POWER PROJECT



Credit: CIB

The Canada Infrastructure Bank (CIB) and Oneida Energy Storage LP have signed a Memorandum of Understanding (MOU) in support of the Oneida Energy Storage project in Ontario. Oneida Energy Storage LP is a joint venture between NRStor Incorporated and Six Nations of the Grand River Development Corporation.

Representing the largest project of its kind in Canada, the proposed energy project includes the development of a 1,000 megawatt-hour energy storage facility. The facility would provide clean, reliable power capacity, drawing and storing existing surplus baseload and renewable energy during off peak periods. Power would be released to the grid when energy demand is at its peak. In addition, the energy storage facility would help stabilize Ontario's electricity sector by providing important grid balancing services.

"The CIB is excited to be part of this project as it has the potential to deliver sustainable, reliable and affordable energy for customers in Ontario," said Ehren Cory, CEO of CIB. "The project is founded on a strong partnership between an innovative Canadian energy company and a First Nation community."

This partnership is another step forward for the CIB to deliver new clean power infrastructure as part of its \$10 billion Growth Plan.

"We are thrilled to partner with NRStor to develop energy storage as the means through which energy savings can be realized while providing reliable clean energy to our communities and businesses," said Matt Jamieson, president and CEO of the Six Nations of the Grand River Development Corporation.

The CIB investment in the project will be confirmed by further due diligence and a final investment decision in spring 2021. ♣

NEXT ISSUE: MAY/JUNE

RESILIENT INFRASTRUCTURE RENEWAL

Post-Pandemic Perspectives

What's the status of key infrastructure initiatives?

Infrastructure Gaps

Canada's deferred maintenance crisis.

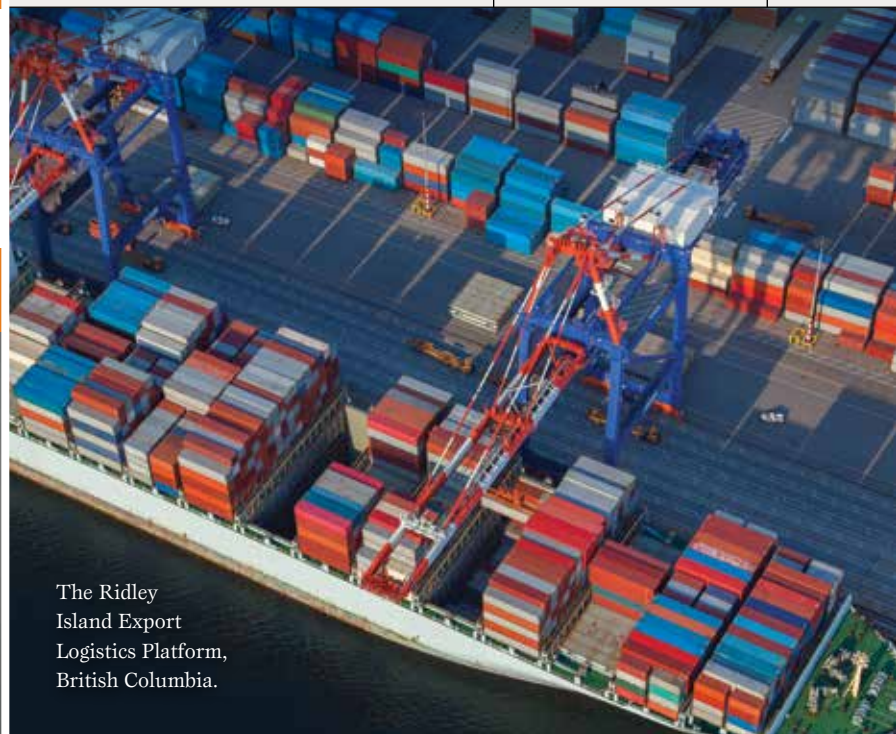
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The Ridley Island Export Logistics Platform, British Columbia.

PORT EXPANSION PROJECT FOR B.C.

The Prince Rupert Port Authority is leading a new project to improve and expand infrastructure at the Ridley Island Export Logistics Platform in British Columbia. The work will be funded through a mix of public and private investment, including a \$49.8-million federal contribution through the National Trade Corridors Fund and a \$25-million provincial contribution through B.C.'s Economic Recovery Plan.

"Our investment in the Port of Prince Rupert will help create new good-paying jobs in our region, while improving western trade corridors and helping Canadian importers and exporters get goods to market," said Jennifer Rice, MLA for North Coast, on behalf of Rob Fleming, B.C.'s Minister of Transportation and Infrastructure. "It will support regional businesses and provide the necessary infrastructure to boost our provincial economy to help build back stronger from the hit of the COVID-19 pandemic."

Once built, this new platform will increase the port's export transloading capacity from 75,000 twenty-foot equivalent units (TEUs) to over 400,000 TEUs annually. The completed project will come with new and updated rail tracks and dedicated roadways to and from the Fairview Container Terminal. It will also feature new offloading and storage facilities plus related large-scale equipment.

"Metlakatla First Nation participates in many aspects of the growth of the container business at the Port of Prince Rupert through our agreements, port infrastructure construction projects and entrepreneurial ventures," said Harold Leighton, Chief Councillor, Metlakatla First Nation. "The development of the export logistics platform is another opportunity to continue our shared success."

According to Shaun Stevenson, president and CEO of the Prince Rupert Port Authority, this "pivotal project presents an unprecedented opportunity for sustainable economic recovery." ♣

Credit: Metrolinx



ONTARIO TRANSIT HUB OPENS TO COMMUTERS

With work wrapping up on the Kipling Transit Hub, the major transit centre in Etobicoke, Ontario has opened the pedestrian bridge and a portion of the underground tunnel connecting to the TTC Passenger Pick-Up and Drop-Off (PPUDO) building that has achieved substantial completion.

Kipling Transit Hub provides essential transit connections by integrating GO Transit (rail and future bus service), MiWay bus service, and access to the TTC in one location.

“We started this project to connect communities and improve the customer experience,” said James Schick, project delivery team manager at Metrolinx, explaining that work was done in close partnership with EllisDon and surrounding communities.

New amenities and upgrades include:

- New Kipling Bus Terminal (GO & MiWay) building complete with access to MiWay bus service.
- New pedestrian bridge over the train tracks—complete with stairs and elevators to connect the new bus terminal to the GO train platform.
- A refresh of the GO station building with more space for customers to use, as well as a new ceiling, tiles, floor, skylight, and glass walls overlooking the train platform.
- Upgrades to the GO train platform, including new accessible boarding area, ramps, and safety markings.

- Access to the underground pedestrian tunnel linking the bus terminal to the TTC PPUDO building. In the near future, the tunnel will also provide underground access to the TTC station.

- Covered bike parking, open bike parking and bike lockers.

The upgraded transit hub provides a launching pad from Toronto’s west end to a regional transit network, with connections to the Milton Line, more than 10 bus routes, three transit providers, and express access to the airport.

Landscaping work will take place in the spring, when better weather permits. 🍁

Credit: Government of Alberta



CONSTRUCTION COMPLETE ON CONTINUING CARE CENTRE IN ALBERTA

The construction of the Willow Square Continuing Care Centre in Fort McMurray is complete. The project was completed under budget, despite challenges that included a major forest fire, flooding, and the pandemic.

When opened later this year, this new \$102-million state-of-the-art continuing care centre will have 108 beds with additional shelled space for 36 more beds to meet future needs.

“We have completed construction of the most advanced continuing care centre in Alberta, addressing a long-time need in Fort McMurray and area,” said Prasad Panda, Alberta’s Minister of Infrastructure. “This project kept over 570 Albertans working in well-paid jobs and was an integral part in

re-energizing our economy and Alberta’s Recovery Plan.”

Alberta Health Services has started operational commissioning, including:

- Installation and testing of medical equipment and furniture,
- Stocking the entire facility with necessary supplies, and
- Preparing for the arrival of new residents and the delivery of programs and services.

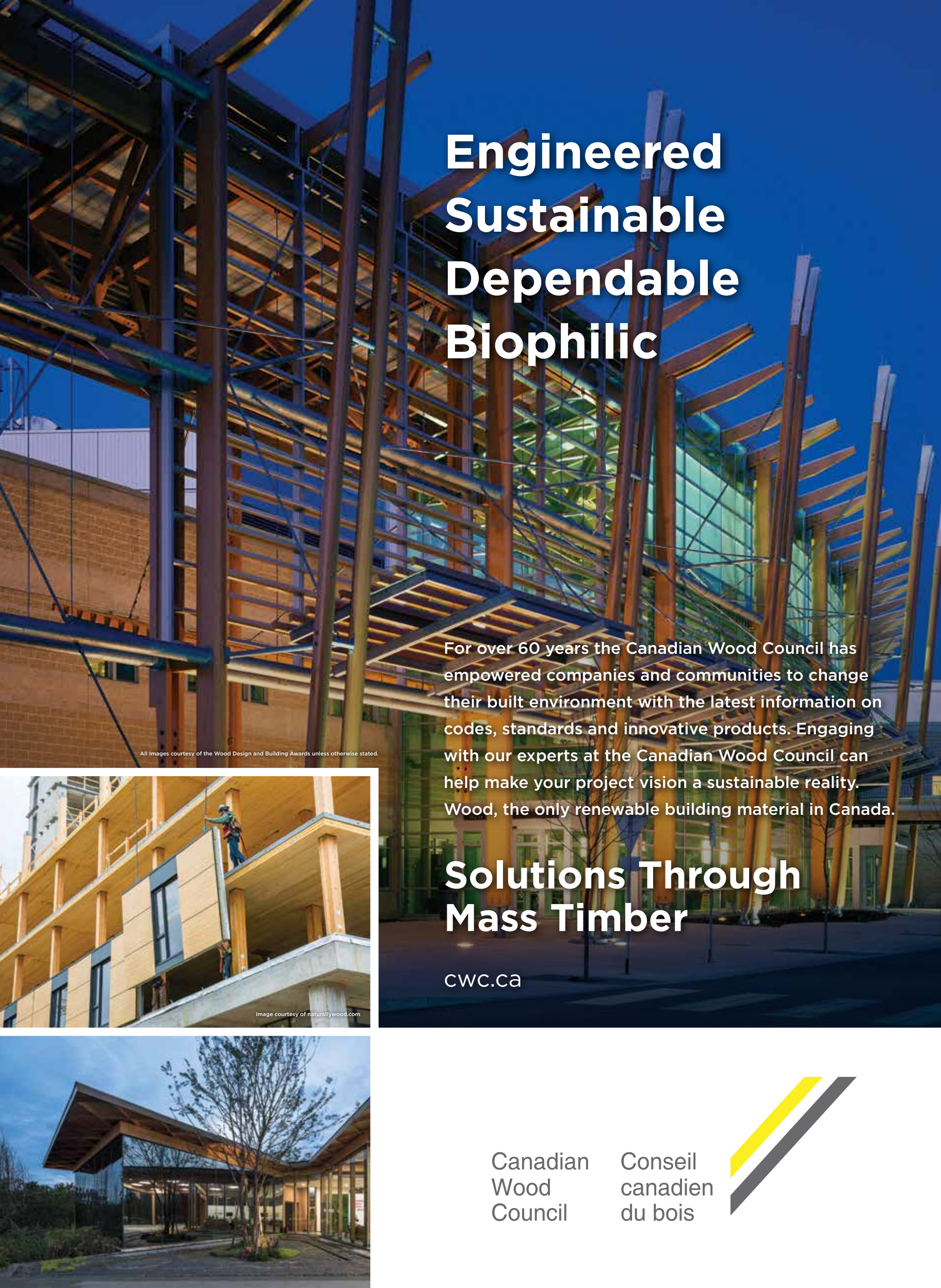
“As Alberta’s population continues to increase and age, so does the demand for continuing care. This new facility will allow Wood Buffalo residents who require supportive living care to remain within their

community and close to their family and friends,” said Dr. Verna Yiu, president and CEO, Alberta Health Services. “This modern continuing care centre will help meet the current and future community needs.”

The official opening date of the Willow Square Continuing Care Centre is pending on a decision from Alberta Health Services.

Through targeted capital investments, Alberta Health Services is in the midst of a significant expansion of continuing care services, options and infrastructure.

This year, Alberta will see its largest-ever investment in infrastructure. The government is spending more than \$10 billion on projects across the province through the Alberta’s Recovery Plan. 🍁



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The COVID-19 pandemic has shone a harsh light on many municipal vulnerabilities, but it has also led to several transformational initiatives.

Inset: Carole Saab, chief executive officer of the Federation of Canadian Municipalities



REMARKABLE MUNICIPAL LEADERSHIP

Facing the frontline challenges with FCM CEO Carole Saab. *By Connie Vitello*

Carole Saab, the chief executive officer of the Federation of Canadian Municipalities (FCM) brings a clear and ambitious vision for Canadian municipalities on the national and international stage. Recognized as one of the country's leading lobbyists, Saab has forged new paths for local government through innovative programming.

ReNew Canada recently engaged Saab to share her experience on her relatively new role, during this especially challenging time, to provide readers with her perspectives and insight into the organization's goals for addressing challenges of the ongoing coronavirus pandemic and for supporting public infrastructure in 2021 and beyond.

Last year you became FCM's CEO. How do you think your decade-long experience with FCM, and other experiences, have prepared you to be the best person to take on this challenge?

In my time with FCM I have learned more about our cities and communities—what makes them tick, their frontline challenges, and the opportunity and innovation they can drive—than I would have in a lifetime otherwise. I've also been immersed in the complexities of our country, the unique and disparate realities that come together to form our fabric, and that need to be duly considered in all issues we face. Fundamentally, it's that knowledge of our

members and our national landscape that I most call on and continue to develop, that positions me to take on the challenge of being CEO—and it's why I insist we are foremost member-focused in our work. Having led at an executive level our policy, government relations and communications teams has also given me the opportunity to build relationships and a deep understanding of the federal landscape, but it's learning from our members that continues to give me, and us as an organization, our edge.

You have played a critical role in negotiating and securing historic investments in national infrastructure, municipal programming, and capacity building. How have you helped FCM to pivot in the face of the ongoing pandemic?

When the pandemic started, we were determined to do what we are best at: helping and empowering our members as they lead the way to serve Canadians in their communities. And given the scale and urgency of the crisis, that meant revisiting our plans and completely retooling to focus our resourcing very deliberately on pandemic response. Since day one, local leaders have been working flat-out to keep Canadians safe. In the face of rising costs and plummeting revenues, they have kept vital municipal services going strong—from frontline workers to public transit to shelters for vulnerable residents. Our job is

to ensure they are connected, informed, and resourced. That means both bringing them together strategically to enable shared best thinking, developing tools they can leverage locally, and being a critical link to the federal government to ensure a coordinated response that reflects local realities. Key to that, is the work FCM led to secure critical emergency support for operating costs in a historic agreement that recognized the absolute urgency of continuing our frontline work: the *Safe Restart Agreement*. As this pandemic continues, millions of Canadians are depending on municipalities to keep essential services running. And many municipalities are still taking extraordinary measures for residents. But to keep vital services going strong this year, we need to continue the conversation with other orders of government for ongoing support. That is why FCM continues to advocate daily for solutions and engage with most senior federal decision makers.

The FCM is known to be the national voice for communities across the country, whether large or small, rural or urban and northern. How are you helping to address municipal challenges in more remote communities?

The pandemic resulted in unique and serious challenges for rural Canada, ones that we sought to understand and engage immediately. Everything from the lack of access to broadband for health services, online

businesses, and education to the potential impacts on the agriculture chain and tourism industry. As with most national challenges, the rural dimension needed to be uniquely considered, and we took quite seriously our role in ensuring that was the case.

Rural and remote communities drive a third of Canada's economy, and the whole country needs them to thrive. In the fall, FCM released recovery recommendations including steps like strengthening rural and regional passenger bus service, expanding the rural and remote stream of the Reaching Home homelessness initiative, and streamlining federal funding to work for rural communities. For example, reducing high minimum project thresholds in federal climate resilience funding. And of course, swiftly following through on investments to achieve universal Internet access. FCM is their voice at the federal level and we will continue to advance these critical priorities, not just for the benefit of rural and remote communities, but for the benefit of the entire country.

What are some key public infrastructure projects the FCM is supporting to follow up on its "Build back better together" recommendations?

Building a green and inclusive recovery will be essential to our country's future. Across the country, local governments are on the frontlines as floods, wildfires and new climate extremes threaten families and businesses, costing our economies billions each year—and we also are on the forefront of delivering solutions to keep people safe and to reduce greenhouse gas (GHG) emissions. And local governments see firsthand the negative and pervasive impacts of social and economic exclusion.

Canada's recovery is an opportunity

transit fleets to Zero and Low Emission Vehicles. For additional deep GHG reductions, FCM's proven Green Municipal Fund can deploy recovery funds directly to the municipal frontlines—to continue to drive ambitious building retrofits, vehicle-fleet upgrades, and natural climate solutions.

Building more inclusive communities starts with ensuring that every Canadian has an affordable roof over their head. And that's why we've put forward a series of recommendations to ensure that ending homelessness and investing in affordable housing is a cornerstone of the economic recovery.

Community, cultural, and recreational infrastructure also promotes social and economic inclusion. By increasing access to services, these facilities help to reduce social and geographic disparities. From seniors' and recreation centres to parks and libraries, these are venues for face-to-face interaction and support. Right across the country, this is the glue that holds communities together.

What are your goals for the future of the FCM and do you have any specific plans to increase the organization's level of engagement and influence?

In the near-term, FCM's focus will continue to be on tooling municipalities across the country to keep our citizens safe, protect frontline municipal services and prepare for the post-pandemic future. And, to work to ensure Canada's recovery is rooted in our cities and communities. Building a stronger Canada together starts now, with local leaders in communities of all sizes. Municipalities are focused on tackling urgent pandemic challenges, and we can and should do this in ways that deliberately build toward a green and an inclusive national

that municipalities do not have fiscal tools that match their modern role in supporting Canadians and our economy. When pandemic impacts forced many cities and communities to the brink of cutting services—or insolvency—it is undeniable that as a country, there is a problem we need to fix. Yes, we need an urgent and immediate intervention, and in the longer-term, we need a more tenable and lasting solution. As an organization we will be focused on advancing this conversation.

We also are going to continue to deepen our engagement and support of our membership, including over time, expanding on our capacity building tools and programs. Most national challenges and opportunities we face require activating and optimizing levers held by all orders of government. And while we won't take our foot off the pedal on our advocacy and representation to our federal partners, my goal is to move FCM deeper into the space of supporting our members in mobilizing, optimizing, and developing their capacity at a local level. Coordinated action between all three orders of government is how we'll break the dam on many critical issues, and we're going to drive boldly in that direction.

Any concluding thoughts for ReNew Canada readers?

Canadians across the country want to emerge from this pandemic with a country that's more resilient to the next threat—be it a virus or extreme weather—and with leaders who tackle milestone challenges proactively. This includes a generational opportunity for bold action on climate change, and municipalities are ready to work with federal and provincial governments to answer that call.

This is inextricably linked to the opportunity to build a more inclusive and equitable country. FCM is the national voice of the governments working closest to people's everyday hopes and challenges, united by a commitment—as we often express it—to build better lives for Canadians. And fundamentally, we hold that every one of those lives should be lived free from racism and systemic oppression. As an organization, and through our Board, we have made important commitments to advance this work, and it will be a critical part of our path going forward. 🌱

Connie Vitello is the interim editor of ReNew Canada.

As this pandemic continues, millions of Canadians are depending on municipalities to keep essential services running.

to scale up local solutions for nation-building progress. A green and inclusive recovery starts with expanding the public transit systems that are so integral to the transportation modal shift we will need to reach net zero. We welcome the federal government's announcement of an accelerated Permanent Transit Fund and we hope to see further money committed to enable municipalities to transition their

recovery. To that end, FCM has also shared proposals to the federal government to create jobs, promote equality and tackle climate change—in the places where Canadians live, work, and raise families.

The COVID-19 pandemic has also shone a harsh light on many of our vulnerabilities as a country, and if we choose to learn from this moment, it stands to be transformational. This includes the reality



There are a multitude of bi-national infrastructure projects currently in the planning phase. Will they receive support from the Biden administration?

BUILDING BACK BETTER

How President Biden's plans for infrastructure development will impact Canada.

By Andrew Macklin

The election of Joe Biden as President of the United States has brought a renewed hope for a significant investment in infrastructure development and rehabilitation. His election platform called for a \$2 trillion investment in his first term in office, with a particular focus on green initiatives.

If the President succeeds in pushing his infrastructure agenda forward, what does this mean for Canada? Will our labour force head south? Will there be a brain drain of Canadian expertise? Or could this swing the doors wide open for Canadian companies to cement their company permanently into the U.S. market?

ReNew Canada set out to appreciate just what a Biden presidency means for Canada, in terms of all things infrastructure, by gathering a group of experts for an InfraIntelligence discussion on the matter. Joining us for the discussion were Global Public Affairs senior counsel and former member of provincial parliament Monique Smith, Josh Van Deurzen, a partner in the infrastructure practice at Torsys LLP, and

Canadian Electricity Association director of government relations Leah Michalopoulos.

The political landscape

From 2016 to 2020, then-President Donald Trump had stated his intentions for a large-scale infrastructure plan. Throughout his term in office, he made repeated statement regarding the \$1 trillion investment, but the plan never came to fruition.

"It's interesting because with (President) Trump, we actually assumed infrastructure would be a huge priority because he was a developer, and he actually understood real estate and big projects," said Smith. "Over four years, we never saw his big infrastructure plan get off the ground."

In the 2020 presidential election campaign, President Trump continued with rhetoric that pointed to the significant infrastructure investment, while Democratic nominee Joe Biden stated his intentions for the aforementioned \$2 trillion plan.

"The good news is that infrastructure development enjoys bi-partisan support," explained Van Deurzen. "It's evident in the

infrastructure plans for both parties. But the two sides have different philosophies about what to prioritize and how to meet the objective of building more infrastructure. In terms of priorities, from the democrats you see a plan promoting climate policy programs, mass transit, clean fuels, electric vehicles, and upgrades to commercial and residential buildings to make them more weather-resistant."

Those climate policy programs include some key targets, including the decarbonization of the energy sector by 2035, and a net zero economy by 2050. Green energy, carbon capture, and small modular reactors were among the solutions for reaching these targets promoted by Biden during the campaign.

The opportunity

It is those same programs that could provide a real opportunity for Canadian asset owners, and companies, to find business opportunities in the United States in the years ahead.

Energy asset owners, ones with excess

Mayors on both sides of the border have made calls for water infrastructure to be included as part of Canada and the United States' plans for post-pandemic economy recovery.



energy that can be exported, could be the big winners in Canada in regards to the new U.S. plans.

“There are many different states and regions that are looking to meet ambitious clean energy or decarbonization goals in reliable and affordable ways, and consider Canadian electricity as a way to help achieve it,” said Michalopoulos.

There are many states looking to meet ambitious
clean energy goals in reliable and affordable ways, and
consider Canadian electricity as a way to help achieve it.

We have already seen one instance of this happening, with the \$400-million Manitoba to Minnesota Transmission project completed in the fall of 2020. But there are a plethora of additional opportunities, with B.C., Ontario, and Quebec having the potential to supply additional clean energy resources to bordering states and beyond. And a strengthened option for Canadian energy transmission to the U.S. could bolster U.S. variable renewables as they are

brought onto the grid.

There is also a new focus on resiliency, a word used quite often by President Biden during the election campaign. Resiliency has become entrenched in the rhetoric around infrastructure in the United States, as the pandemic has heightened awareness of the wide-scale impact of natural disasters.

“The administration’s focus on building

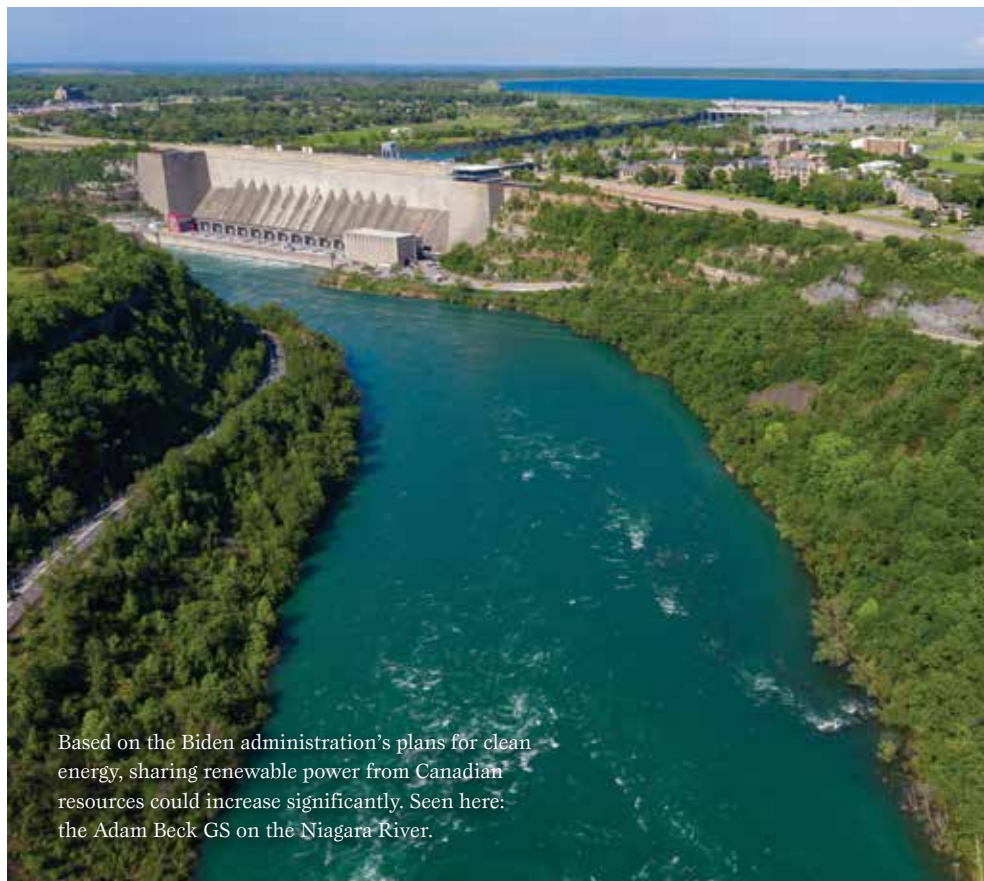
stronger infrastructure resiliency is an important one, and I think that Canadian expertise in that area might come into play,” said Smith.

Bi-partisan initiatives

Beyond the energy sector, there are numerous projects and initiatives that have been discussed, but have not yet progressed into procurement on either side of the border.

Included in that list are three rail projects across six provinces and territories: the Alaska to Alberta Rail project, the Quebec City-Windsor-Detroit-Chicago rail corridor, and the Vancouver-Seattle-Portland high-speed rail project. The first received Presidential approval from former President Trump in 2020, and the other two have yet to move beyond the premier/governor discussion and study phases. The Alaska to Alberta project may have a leg up in terms which of three could actually proceed quicker thanks to the strong commercial elements of the project, rather than a reliance on the movement of people through the respective corridors.

There are also broader projects of shared interest that need a boost from the new government. Prior to the election, the Great Lakes St. Lawrence Cities Initiative led by its chair, Mayor Mike Vandersteen of Sheboygan, Wis., and St. Catharines, Ont. Mayor Walter Sendzik, have called for investments in water infrastructure projects as part of both countries’ post-pandemic economic recovery efforts. The region, which includes eight states and two provinces, has been hit hard by rising water levels, pollution, and extreme weather events.



Based on the Biden administration's plans for clean energy, sharing renewable power from Canadian resources could increase significantly. Seen here: the Adam Beck GS on the Niagara River.

infiltrate the supply chain or the workforce. With several million Americans losing their job as a direct result of the COVID-19 pandemic, President Biden will be looking for ways for quick skills re-training that will allow people to again make a suitable income. Infrastructure has that potential, especially with the lag time between the start of procurement and the start of construction.

Smith stressed that the counter-argument needed to any push for “Buy American” policies is to broaden the term to “Buy North American.” She already has the experience of working to change this narrative, something she did in her political career during the presidency of Barack Obama. Smith also noted that, at the state level, “Buy America” isn’t intended on keeping Canada out of the mix, but rather focused on the involvement of other countries in the supply chain or workforce.

Smith went on to point out that it is also very important to know the individuals who are politically-appointed to key roles that will impact the infrastructure portfolio. They are the ones who need to be targeted with information on the economic benefits involved in including Canada in its works to rebuild America’s infrastructure, if of course those individuals do not already possess that understanding. That includes Vice-President Kamala Harris, whose approach to infrastructure will be important to appreciate as she may be at the top of ticket come 2024.

Ultimately, the opportunities that lie ahead for the Canadian infrastructure industry are in the sharing of its expertise, helping the U.S. build assets with resiliency and climate adaptation at their core. Should the Biden administration be successful in passing an infrastructure funding Bill through the House and Senate, it will take time for the funding to trickle down to municipalities (the President has discussed skipping the state level and directing funding straight to municipalities) and put people to work. During that time, it can be expected that a portion of the currently-unemployed American workforce will be encouraged to enter re-training programs for careers in infrastructure, helping the country meet its “rank and file” needs for the execution of a large-scale infrastructure, and negating the need for workers from the sector in Canada. 🍁



Andrew Macklin is the former managing editor of ReNew Canada.

Plenty of challenges

Despite President Biden’s \$2 trillion infrastructure plan, and the benefits it could provide for Canada, there are many obstacles to overcome.

The result of the January senate run-offs in Georgia have made it more difficult to push the President’s plan. With the Republicans holding the slim majority, it will be up to the Democrats to figure how best to gain support to pass any infrastructure Bill. If there is significant resistance from the Senate Majority, be it based on the economics of the

need to be established at the federal level, expertise that is not present in a large enough capacity at this time.

Then there is the impact of the COVID-19 pandemic which, despite the rollout of vaccines, is still taking a toll on the United States. Further to that are the lasting impacts of the pandemic, and the changes that will need to be made to the industry as a result.

“As a result of the pandemic, contractors have become more risk averse,” said Van Duerzen. “Particularly in the P3 market, which recently has been characterized by

The opportunities for Canadian infrastructure are in the sharing of expertise, helping the U.S. build assets with resiliency, and climate adaptation.

plan or for political purposes, it could kill any plans for significant infrastructure funding at a time when the country desperately needs it.

It should also be expected that any plans for green infrastructure initiatives will take a little bit of time to get going, based on the changes to the Environmental Protection Authority made by the previous administration. In order to place a focus on flood protection, stormwater management, renewable energy, and other forms of green building, expertise (and leadership) will

aggressive risk transfer from the public sector to the private sector.”

Van Duerzen went on to mention that pandemics and epidemics had been covered in force majeure clauses in contracts, but did not include monetary relief from the authority. That, as well as the re-allocation of risk, will need to be addressed based on the lessons learned during COVID-19.

There is also expected to be a strong “Buy American” push from the Biden administration, which could limit just how much Canadian companies will be able to



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A recent report indicates 117,000 direct construction, supply chain, and broader industry jobs are under threat in Ontario due to COVID-related cancellations.



KEEP THE FUNDS FLOWING

A call for immediate action to help municipalities support SOGR projects.

By Peter Smith and Nadia Todorova

C OVID-19 has battered the Canadian economy, shaken the pillars of industry, and caused untold human suffering. The pandemic has also taken its toll on capital budgets of municipalities which, in turn, has had a domino effect on infrastructure projects.

The construction industry has suffered. In Ontario, there's been a dramatic drop in tenders issued for municipal state-of-good-repair (SOGR) projects and contractors report that hundreds of workers were laid off in early fall. SOGR projects, the regular infrastructure maintenance work seen across cities year-round, are a critical source of employment.

Ontario municipalities are not allowed to run deficits so, as a result of higher-than-anticipated costs due to the pandemic, many have had to raid their capital budgets to pay their operating expenses, leaving very little funds to carry out these essential and much-needed SOGR projects.

Through co-operation and partnership between the provincial and federal government, there has been significant work done so far to ensure that 2020 did not deal a fatal blow to industry and municipalities. That work and co-operation must continue in 2021 to solidify and make sure that industry is able to remain working on the infrastructure that keeps our cities safe and moving.

Survey says

Contractors have felt the effects and saw the gathering storm clouds early on in 2020. A survey done by the Ontario Construction Secretariat for the Residential and Civil Construction Alliance of Ontario (RCCAO), for example, found that 61 per cent of civil and engineering contractors expected to see revenue declines in 2020 compared to the previous year, while 25 per cent reported they would need government support just to stay afloat.

RCCAO commissioned the survey to quantify how firms that do work in the civil and engineering sectors in the province were impacted by the pandemic, including the volume of work expected to be coming down the pipe. The results of the survey confirmed the anecdotal observation contractors were experiencing on the ground, including having to lay off construction workers much earlier than usually expected in the season.

The survey findings supported RCCAO's assertion that senior levels of government had to step up to provide the necessary funds so municipalities could keep moving on important SOGR projects.

Without such funding, there is only one recourse available to municipalities, and that is pull back on projects, which essentially will lead to staggering job losses and hamper

the economic recovery of the province.

As illustrated by RCCAO's previously commissioned research from the Canadian Centre for Economic Analysis (CANCEA), employment and tax revenues will take a staggering hit over the next decade unless governments work together to support municipal infrastructure investments.

There is no time to waste, as municipalities such as Toronto are reducing their SOGR budgets, which means that hundreds of millions of dollars in infrastructure repairs slated for 2020 will not go ahead.

The scene looks even worse for 2021 as the spillover effect will continue to grow. Postponing critical infrastructure work would lead not only to more serious damage to roads, bridges, and watermains that will come with an even bigger price tag for taxpayers but also lead to tens of thousands of construction workers being laid off.

Report on infrastructure investments

This scenario was reflected in RCCAO's November report by Prism Economics and Analysis, which showed how many construction industry and related jobs were under threat in 2021 if government and institutional building permits continued to decline at an unprecedented 35 per cent.

The report, entitled "Averting a Crisis:

The Need to Protect Ontario's Infrastructure Investments," paints a very dark picture. It found that Ontario is headed for heavy job losses in construction and related industries and a worsening economic crisis if infrastructure investments dry up.

The report indicates 41,000 construction-related jobs are threatened, and an overall total of 117,000 direct construction, supply chain, and broader industry jobs are under threat due to cancellations.

budget shortfalls caused by COVID-19. As a result of that funding, municipalities have been able to begin putting their financial houses in order.

However, we are not out of the woods yet. Municipalities are still facing significant deficits in 2021 and we are urging the federal and provincial governments to step up to the plate with a second round of funding, or Safe Restart Agreement 2.0.

It is crucial that adequate funding continues

The funding provided in 2020 was a step in the right direction and showed what can be accomplished when the federal and provincial governments work together. They must now follow through on another phase of funding so that municipalities can give the green light to much-needed SOGR projects for 2021.

We must keep the momentum going and collaborate on a Safe Restart Agreement 2.0 for the 2021 construction season. Municipalities need a measure of financial certainty and a commitment, so they know they'll have the funds to balance their budgets and proceed with SOGR projects that contribute to a health economy and employment for so many. 🍁

Postponing critical infrastructure work would lead to more serious damage to roads, bridges, and watermains and also lead to tens of thousands of construction workers being laid off.

Financial relief measures

In December, thankfully, the Government of Ontario, in partnership with the Government of Canada, provided some financial relief to municipalities across the province, including the City of Toronto, to help them deal with

to flow in 2021, or municipalities will again face the prospect of having to delay or cancel SOGR projects to balance their budgets. Such a scenario would have disastrous effects on the Ontario construction industry and the provincial economy.



Peter Smith is chair of the RCCAO board of directors and executive director of the Heavy Construction Association of Toronto.

Nadia Todorova is interim executive director of the RCCAO.

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AM Capacity Needs Survey 2020

Interim Findings



Responses from across Canada



165 Responses as of October 2020

BUT... only 66%
of respondents fully completed the survey

We need your complete responses to improve the data for everyone!



Aligning staff development initiatives with organizational competency gaps was the most selected activity that would be effective in strengthening AM capacity in organizations.

BUT... over



of respondents told us their organizations weren't using or were only just initiating competency-based management.

CNAM's AM Competency Framework For Canadian Communities can help!

Average Reported Proficiency in the 12 AM Competencies

Individual Proficiency



Organizational Proficiency



AM Training



Workshops and webinars are respondent's preferred training delivery methods

Many respondents want more intermediate level training



Level of Service

was the topic most respondents felt their organizations would most benefit from additional learning in

BUT... we need more data on AM Training...



Only 2/3 of respondents answered this section

We recommend you give yourself 20-25 minutes to fully answer all of the questions.

What would you like to see in future AM training? Let us know...



The average time to complete the survey was only 17 minutes!

CAPACITY AND CAPABILITY

A sneak peek at CNAM's interim survey results.

As part of the Municipal Asset Management Program (MAMP) delivered by the Federation of Canadian Municipalities and funded by the Government of Canada, the Canadian Network of Asset Managers (CNAM) is conducting a national survey on the current needs and demand for workforce capacity and capability development of asset management in Canada.

This survey is expected to help improve understanding of:

- The gaps in individual and organizational competency;
- Areas where organizations need help to implement and sustain their asset management programs; and,

- What resources individuals and organizations require to better develop their asset management capacity and capabilities.

The survey is available at:
cnam.ca/resources/am-capacity-needs-survey

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For more information on this project: http://www.cpci.ca/en/about_us/project_month/january_2020/

For your free copy of **Guidelines For Precast Concrete Accelerated Bridge Construction Using Precast/Prestressed Concrete Elements**, visit www.cpci.ca/publications



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Credit: Government of British Columbia

Send us your best infrastructure image, and you may see it featured here. Email Interim Editor Connie Vitello at connie@actualmedia.ca for details.



Panorama

Bridging the Infrastructure Gaps in B.C.

A new project for Highway 1 involves replacing the two-lane bridge crossing at Quartz Creek, 40 km west of Golden, with a new four-lane bridge. — Staff



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Digging out a major intersection for both the subway tunnel and the subway station takes significant consideration for utilities, including water, that service the surrounding neighbourhood.

Inset: A look at the digital representation of the water infrastructure that appears at one of the intersections along Eglinton Ave. impacted by the LRT construction.

TRACKING WATER ASSETS

Toronto Water protects its water infrastructure during massive construction project. *By Brian Bell*

To meet their mandates, water utilities must not only know where their assets are and how they relate to each other, but also how they relate to the infrastructure and operations of other departments and agencies, such as transportation and transit.

Nowhere is this more important than in a large public construction initiative like the building of the Eglinton light rail transit (LRT) in Toronto. This is where the biggest water system in the country meets the largest transit infrastructure build in the country. That's a lot of moving parts.

Toronto Water, a division of the City of Toronto, is one of the largest water, wastewater, and stormwater utilities in North America, with approximately 6,000 kilometres (km) of watermains servicing more than three million residents and businesses. It maintains and services assets worth approximately \$28 billion, including: four water and four wastewater treatment plants, 4,100 km of sanitary sewers, 5,000 km of storm sewers,

and 1,400 km of combined sewers.

Working around water infrastructure

Metrolinx is a Crown agency that manages and integrates road and public transport in the cities of Toronto and Hamilton and their suburbs and is currently building the Eglinton Crosstown, an LRT corridor across Toronto. With a \$5.3-billion construction cost, it will have 25 stops, run 19 km, and has a completion deadline of 2022.

Not wanting to jeopardize its strategic emphasis on customer service and commitment to excellent water delivery and reliability, Toronto Water had to figure out how to manage its assets with this extensive construction project that intersects with existing water infrastructure across the city. To accomplish this, Toronto Water had to develop a streamlined way to collaborate internally but also with outside partners like Metrolinx, as its construction requires Toronto Water to move a large number of assets temporarily or permanently.

When any infrastructure is being moved, the new locations must be recorded and communicated internally and externally to provide service continuity and prevent damages to in-service assets. It is essential that these asset changes are systematically catalogued and tracked, and the traditional mark-up process or documentation in paper logbooks wasn't nearly sufficient for a project of this scale.

Geometric adjustments

Significant projects and operations require accurate, detailed knowledge of asset locations and relationships. In short, organizations need location intelligence. They need geographic information system (GIS) technology. Moreover, to realize a more complete and accurate view of its infrastructure and improve operational awareness, Toronto Water saw the advantages of collaborating internally, so that all stakeholders, from planning to operations to the field crews on the ground, could both access and contribute to the organization's GIS.

This was a cultural shift.

Toronto Water has been using Esri Canada services for 10 years. Historically, the infrastructure management group was responsible for its GIS. However, the lens through which they view GIS gave a planning perspective rather than a more holistic one that included operations and construction. As such, operations had to depend on infrastructure planning for their location intelligence. Conversely, the planning group did not have access to the most up-to-date construction information, resulting in less than optimal operational awareness as well as lag times required to digitize Records of Alterations (ROAs) and as-built drawings.

To improve operational awareness, efficiency and collaboration, Toronto Water expanded its GIS practice beyond planning to the operations group, which has been instrumental in coordinating with Metrolinx. Operations is now using a connected network and mobile apps so field crews can contribute in near real-time data and as a result, give both planning more up-to-date information and operations more complete awareness of their assets and infrastructure as the

Eglinton Crosstown LRT develops.

The distribution and collection group worked with both Metrolinx and Toronto Water field staff to digitize and track changes as to where assets are and how they will be affected by construction, on dedicated map layers, which are then easily shared with all stakeholders.

This means staff can redline assets that will be affected by construction and plan their operations in such a way as to minimize customer impact. Further, they routinely conduct test shuts in advance of construction to validate which customers will be impacted and notify such customers appropriately.

"The Geometric Network has given the operations department the ability to define relationships between assets and how different assets interact with each other as well as perform critical functions like upstream tracing, valve isolation and customer notification," noted Arash Farajian, policy, planning and project consultant at Toronto Water.

Field crews are now able to contribute to Toronto Water's GIS and are directly involved in this feedback process. In contrast to when operations had to rely on Planning for its GIS capabilities, crews now help

improve the completeness of Toronto Water's location data with daily updates to assets. If a main break occurs after hours along the construction route, emergency crews do not need to rely on old, possibly inaccurate data. They can access Toronto Water's GIS and its Metrolinx layer to accurately assess the situation and resolve the problem efficiently, even if those assets have been temporarily adjusted due to the construction.

Toronto Water has seen that effective management of its location information has improved its ability to collaborate internally and coordinate with outside partners and, in doing so, meet its strategic goal of providing excellent water delivery and reliability to customers, despite an ongoing huge construction site nearby. 🍁

This article originally appeared in the November/December 2020 issue of Water Canada.



Brian Bell is the director for utilities at Esri Canada.

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Ontario Power Generation (OPG) recently announced the resumption of planning activities for future nuclear power generation at its Darlington site, with a goal of hosting a grid-size small modular reactor as soon as 2028.

Credit: Darlington Nuclear Aerial ©Ontario Power Gen

WHY NUCLEAR AND WHY NOW?

Nuclear's role in the changing clean energy infrastructure in Canada.

By John Gorman

The climate change crisis impacts Canadians every day, but we are not strangers to this alarming news. In fact, a recent study by the Canadian Nuclear Association (CNA) conducted by Abacus Data uncovered that over 90 per cent of Canadians cite climate change as a serious issue. More worrisome is that Canadians lack confidence Canada will meet 2030 emission reduction goals—only 17 per cent of Canadians believe we can meet these goals.

It's clear that there's a disconnect between what we know to be catastrophic—climate change—and what we can be doing to lessen the future impact on our country. The time to complete Canada's transition to net-zero emission electricity is now, and new energy technologies like hydrogen and small modular reactors (SMRs) are part of the path to doing so.

Working together

Energy sources working together is the foundation for emission reduction. Canada's clean electricity system is an interdependent network of electricity. Eight of 10 Canadians already have access to over 95 per cent emissions-free electricity, in six provinces so far and hopefully soon all ten.

We are operating as one of the world's largest and cleanest electricity systems. It is a product of hydroelectric, nuclear, wind, biofuel, natural gas plus carbon capture and storage (CCS), solar, geothermal, and electricity providers collaborating and complementing one another to make emissions-free clean electricity a Canadian reality. Most of Canada's power utilities use several of these clean energy technologies in concert with one another.

This dynamic energy mix of existing and developing technologies is already 82 per cent emissions-free, and we must continue leveraging these complementary solutions to achieve net-zero greenhouse gas emissions.

But why nuclear, and why now?

Small modular reactors

In December 2020, the federal government released its Small Modular Reactor (SMR) Action Plan, which was an important step in furthering Canada's leadership role in clean electricity generation and is a catalyst for the transition to low- or non-emitting industrial production among some of Canada's highest-emitting sectors. (The full plan can be reviewed at smractionplan.ca.)

Seizing the SMR opportunity for Canada will offer:

Reliability

Nuclear-generated electricity provides reliable energy 24 hours a day and seven days a week.

Low emissions

Nuclear has less lifecycle greenhouse emissions than solar power. The full lifecycle emissions from a nuclear plant, from uranium mining to decommissioning, is one of the lowest lifecycle emissions of any electricity production.

Low cost

Nuclear remains one of the most affordable electricity sources worldwide. In Ontario, only hydro has a lower cost per kilowatt-hour than nuclear.

Strong safety record

With an unprecedented level of due diligence, scientific and regulatory rigor built on over 65 years of industry experience, nuclear is one of the safest energy sources in relation to both human health and climate change.

Compatibility

SMRs are uniquely equipped to work alongside renewables to help decarbonize key regions and industries that are challenged to meet emission reduction goals. To achieve

net-zero emissions in 2050, decisions must be made now for clean electricity projects to lay the foundations, sooner rather than later.

Who benefits from SMRs?

In short, we all do. But there are notable industries—oil and gas, cement, and mining—that will reap the benefits of a dynamic energy mix, and who have traditionally been challenged as high emission sectors. When we look at Canada's mining sector as an example, SMRs offer very promising advantages and will facilitate up to 50 per cent in energy cost savings by reducing our reliance on diesel.

SMRs are mobile and can therefore be brought to remote sites given their size. When a mining operation requires clean electricity and high temperature heat, some SMRs can operate for years without being refuelled.

SMRs are flexible, an industry term meaning they are highly responsive to heat and electricity changes. In contrast to wind and solar, which rely on wind and sun for power, this flexibility enables SMRs to provide electricity given changing load requirements that are common in extraction.

SMRs produce high temperature, clean heat which is different than other methods of electricity generation. This heat can be used in multiple ways within extractions industries, such as for physical heat or hydrogen production.

And keep in mind that this is all in addition to decarbonizing the economy.

Looking ahead

Climate change is an existential threat, and we need to come to terms with not meeting net-zero 2050 if we do not invest in new nuclear now.

Nuclear has already displaced over 80 million tons of greenhouse gas emissions every year in Canada. That's the same as removing 15 million cars from the road each year, but we need to continue this momentum. With 27 concrete actions from the Government of Canada's latest SMR Action Plan and Ontario's decision to refurbish the province's nuclear plants, Canadians can be hopeful.

Continued investments in all forms of clean energy—wind, solar, nuclear, CCS, hydrogen—are the only path forward. 🍁



John Gorman is president and CEO of the Canadian Nuclear Association, and former president and CEO of the Canadian Solar Industries Association.

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BREAKING NEW GROUND

An innovative approach to manage contaminated soil remediation.

By Nicolas Sbarrato

The Turcot Interchange, a major traffic hub in the Montreal area of Quebec, has been the site of large-scale project work since 2015. As project partners work to rebuild the interchange, WSP Canada's environmental experts developed an innovative new tool to manage a highly complex aspect that is, quite literally, the foundation of the entire undertaking: contaminated soil remediation.

Today, the Turcot Interchange is a critical transit artery in the Greater Montreal Area, carrying more than 300,000 vehicles per day. It connects several key highways in the region, as well as providing the crucial link between the Pierre-Elliott Trudeau international airport and downtown Montreal.

However, the land it occupies wasn't always the site of an automotive expressway; decades ago, the Turcot site was a different kind of high-traffic hub. Previously nicknamed the "Smoking Valley," the Turcot site was for some time a maintenance and repair site for over 80 steam locomotives each

day, along with other industrial activities that left a significant environmental footprint.

As the aging highway infrastructure approached 50 years of service, Transport Quebec initiated the large-scale, complex project of rebuilding the interchange, while keeping it open for public use. But one major challenge that quickly emerged was the presence of some significant soil contamination. There were still several organic contaminants of petroleum origin, in addition to residual materials such as combustion residues and other contaminants that do not meet environmental regulations.

WSP's soil remediation experts joined the project team, tasked with creating collaborative and innovative solutions for soil management in order to improve the environmental baseline and meet regulatory requirements and client needs for the project.

A complex challenge

Soil remediation was no easy feat during a project that was already highly complex

and challenging. The length and high-profile nature of this unprecedented project, combined with the need to engineer the rebuild while maintaining traffic and mobility for the interchange's 300,000 daily users, meant the project rehabilitation work would be a team effort of incredible magnitude.

With the project spanning such an extensive geographic footprint, there was a large amount of soil to dig out, remove, and even reuse. The team of experts and client partners relied on more than 3,000 soundings, from characterization studies of the last 20 years, to create a three-dimensional model of the area. They documented more than 35,000 data blocks representing the different layers of soil at the site, and used a Geographic Information System (GIS) to give the construction teams accurate locations of where to excavate soil. The team needed to update this data on an ongoing basis to continue to optimize the construction work and deliver on a fast-paced schedule.



Credit: WSP

greatly expedited the rate of the excavation processes, and it has enhanced collaboration and seamlessness between in-office work and planning, and site work. It has also enabled the team to train operators to do the work more efficiently than ever before. This training and smooth collaboration became crucially important on a busy site, when during peak years, there were more than 1,000 staff on-site, working in more than 10 or 15 disciplines simultaneously.

Reimagining the landscape

The Turcot project was one of the first in Canada where a soil remediation team made innovative use of these digital technologies to create new efficiencies in the field. Traditionally, soil tracking and surveillance involves a high degree of manual measurement and documentation, that can be both time-consuming and challenging in a project site full of dense activity. With these technological innovations, site workers can use network-connected smart tablets to access necessary data anywhere on the work site. The tablets also allow the site team to share real-time updates and information with office staff who are not on-site.

Streamlining the soil tracking system not only cut down on manual work and time investment, but it also cut down on transportation costs and construction materials. Per environmental regulations, some of the lightly contaminated soil was eligible to be reused on-site as construction backfill material. By tracking this soil by GPS, the project team made it much simpler to reuse the soil that was considered safe, and reduced the congestion, costs and GHG emissions associated with shipping in commercial materials from sources like quarries and sand pits.

The Turcot project was a pivotal one in the field of soil remediation, because the project environment enabled the team to apply these innovative methods seamlessly and to great advantage. The entire team demonstrated adaptability, innovation, and efficiency that supported complex project delivery on an ambitious timeline, and with an enhanced landscape of ecological protection and digital transformation. 🌱



Nicolas Sbarrato is a project director and EQA expert with WSP Canada.

While balancing these efforts, the team was also tasked with complying with environmental regulations to limit the ecological footprint of the project. In Quebec, there are critical legal requirements in force for rehabilitating contaminated sites, which constrain the degree of intervention to protect the surrounding environment.

A digital approach

In response to these challenges and the sheer scope of project complexity, the WSP team, in partnership with the client teams, developed

characterisation historical work, and then leveraged digital technologies like mobile devices and GPS to make data accessible in the field.

All contamination work in the field is now completely paperless, and the consortium is also using GPS in the machinery. Every excavator is now equipped with high-precision GPS so that when digging into the soil, the operator has a visual aid and can access the data in real time, enabling them to know exactly which layer of soil they are working on. These GPS systems also

**Streamlining the soil tracking system
cut down on manual work, time investment,
transportation costs, and construction materials.**

a new system for tracking soil on the Turcot project. They needed a digital system that could meet the project timeline and budget, while also expediting the remediation work and providing timely updates and data access while on-site.

The team started with the existing database from the Quebec Ministry of Transport (MTQ) based on their environmental

tracked the soil by validating its origins and destinations during transport on site. The project team also used drones equipped with GPS to take regular surveys of the site to provide three-dimensional data monitoring and progress updates.

This use of digital tools and leveraging technology in new ways represents a significant innovation in the field. It has

Despite significant loss in ridership, Metrolinx has continued to offer service throughout the Greater Toronto-Hamilton Area over the course of the COVID-19 pandemic.



STILL ON THE RAILS

Metrolinx keeps rail projects progressing during the pandemic.

By Andrew Macklin

When building a transit megaproject, the slightest unforeseen obstacle can cause delays, cost millions, put contractors and owners at odds, and upset entire communities waiting for the network to reach operation. The stakes are even higher when you have multiple projects, valued in the tens of billions, all at different stages of procurement and construction and suddenly a pandemic hits, throwing every timeline and deadline into question indefinitely.

That was the situation faced by Metrolinx, responsible for the massive expansion of the transit network in the Greater Toronto-Hamilton Area, when the COVID-19 pandemic hit a year ago in March 2020. At that time, work was underway on several sections of the over \$25 billion expansion of the GO train network. And, at the same time, progress was being made on the early stages of procurement of the region's second ambitious program, the massive expansion of the transit system, which includes the Eglinton Crosstown West Extension, Yonge North Subway Extension, Scarborough Subway Extension, and the new Ontario Line.

Quick to react

When the pandemic hit Canadian soil, it left project owners and contractors reeling, trying to figure out whether or not jobsites could or would stay active, and how active jobsites could remain safe and healthy for everyone. As information about COVID-19 changed hour-to-hour and even minute-to-minute at times during the first few weeks, contractors and owners worked with the Ministry of Labour and industry associations to determine if the sites could remain open and, if so, what new protocols needed to be put in place.

Phil Verster, CEO at Metrolinx, stated that he was “exceptionally pleased with contractors’ response to the pandemic,” noting that they were quick to implement guidance from the Ministry of Labour on the implementation of safe distancing, new personal hygiene measures, and best practices for the use of masks. Because of this, Metrolinx was able to keep construction going throughout the pandemic.

“(We experienced a) huge rate of production, and that wouldn’t have been possible if our contractors hadn’t responded as they’ve done,” said Verster.

That quick adjustment by the contractors has meant that projects throughout the GO Corridor have seen minimal cost or timeline impact, thus far, based on the outbreak of COVID-19 in Ontario. Verster noted several major projects reached substantial completion in late 2020 and early 2021, including significant upgrades at the Cooksville, Kipling and Bloomington GO stations, as well as the opening of the Union Station Bus Terminal and Bay Concourse.

Keeping procurement progressing

The pandemic also didn’t cause any significant slowdown on the procurement front, which is a positive sign for contractors looking to fill their future project pipeline.

“An even bigger story for me is the fact that we have, despite COVID, maintained an extremely ambitious procurement program for the new subways,” said Verster.

Three of the four components of the subway expansion program have seen progress during 2020. In August, the Request for Proposals (RFP) for advanced tunnelling work was issued for the Eglinton Crosstown West Extension. That same month, the

Despite the pandemic, Metrolinx has continued with its robust procurement schedule, including the selection of the preferred proponent for the Union Station Enhancement Project.



RFP for the same work was issued for the Scarborough Subway Extension. In November, ONTrack Alliance was selected as the preferred proponent for the Union Station Enhancement Project, which is being delivered using the Alliance model. In December, an RFP was issued for two of three packages for the new Ontario Line:

several major infrastructure projects across Canada. However, some of the details of the procurement may have to be tweaked in order to meet the new health and safety demands necessitated by the COVID-19 pandemic.

Verster noted that safety is an essential part of what Metrolinx does, a central tenet of the organization's value offering to customers,

in the face of steep declines in ridership.

That could present some important changes to contract demands moving forward, not just at Metrolinx but across the industry. Even with the rollout of the vaccine throughout 2021, it is expected that certain health and safety protocols will stay in place, especially as transit operators work to improve consumer confidence in multi-passenger vehicles. If transit operators are to restore confidence and get their operations to pre-pandemic levels, ensuring every measure is taken to protect a rider's health and safety will be paramount. That could translate to fare increases (although Verster did not mention this possibility), but even more so, significant additional costs for asset construction and operations.

The bottom line is "travelling by transit is always going to be better than travelling by fossil-fueled automobiles," and continuing to build a robust transit network in Canada's largest urban centres will be necessary to facilitate that. COVID-19 has forever changed how the transit sector and its approach to safety. For Metrolinx, that means continuing to ensure the health and safety of everyone involved in transit construction, operations, maintenance, and ridership is the top priority. 🍁

Some procurement details may have to be tweaked in order to meet the new health and safety demands necessitated by the COVID-19 pandemic.

❶ The first package includes designing, building, financing, operating, and maintaining the subway trains, communications and train control systems, a maintenance and storage facility, and the fare equipment that will be integrated with the PRESTO system.

❷ The second package includes designing, building, and financing the tunnels and transit stations for the southern segment of the line from Exhibition Place to just west of the Don River. It also includes utility and conduit work and building structures to prepare for track installation.

The active procurement schedule has been a welcome sign in a year when procurement has slowed or halted on

adding that "ensuring the health and safety of our customers is non-negotiable." If the pandemic has done anything, it has emphasized the importance of health in every aspect of what the transit operator does.

"When you look at how we've responded to COVID: putting hand sanitizer in every doorway of every train and every bus, we've got dividers between seats, we've got flows through the buses, flows through the trains earmarked. All of that is central to everything we do."

The issue, of course, with the implementation of advanced safety protocols is the cost that it adds to the operation, unforeseen in the budgets of active contracts or 2020-21 budgets for asset operation. This

Andrew Macklin is the former managing editor of ReNew Canada.



Top100
Canada's Biggest
Infrastructure Projects

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

2021 Top100 Projects Rank: 8
Value: \$10.513 billion

GO Project Completes Tunnel Excavation in Kitchener

The Ontario government has completed excavation of the second of two tunnels under Highways 401 and 409, bringing the Kitchener GO corridor one step closer to becoming a two-way, all-day rail service. This milestone represents a significant achievement in Ontario's GO Expansion program supporting the creation of a modern, sustainable rail transit network.

"This tunnel project will help increase capacity on the Kitchener corridor and, where possible, support all-day trips, in

both directions to reduce congestion," said Caroline Mulroney, Ontario's Minister of Transportation. "Our goal is to establish a more reliable rail transit system in the Greater Golden Horseshoe, which will drive significant economic growth and job creation that will benefit the entire province."

The Highway 401 and 409 Rail Tunnel Project includes a twin tunnel structure, and when complete, will provide space for two additional tracks in the future. Track, signaling, and communications infrastructure

will be installed under a separate contract. Substantial completion for the 401 and 409 Rail Tunnel Project is expected to be reached in the second half of 2021.

Toronto Tunnel Partners is the project consortium constructing the twin tunnel structure and consists of WSP Canada, EllisDon, STRABAG Inc. and Dr. Sauer & Partners.

This project is one of more than 20 major projects currently under construction to support the Ontario's GO Expansion program. 🍁



Sites Cleared for Broadway Subway Expansion Project

2021 Top100 Projects Rank: 24
Value: \$2.83 billion

Sites are being cleared to make way for the \$2.83 billion Broadway Subway Project, which will transform how people travel around British Columbia's urban core.

"The Broadway Subway Project will introduce a new transportation option along one of Vancouver's busiest corridors, helping reduce traffic congestion and air pollution, while keeping pace with the city's growing ridership," said Catherine McKenna, federal Minister of Infrastructure and Communities.

Building demolition is necessary to support the construction of six new station entrances. Major work will start this spring, with construction activities for the tunnel portal and elevated guideway near Great Northern Way.

"When completed, the Broadway Subway will transform how people get around in Vancouver. It will mean faster travel to work and school, better access to local business and fewer cars on the road," said Rob

Fleming, B.C.'s Minister of Transportation and Infrastructure.

The design-build team consists of Acciona Infrastructure Canada Inc. and Ghella Canada Ltd. Other key players include Hatch, Wood, Golder, and Aon.

Estimated for completion in 2025, the Broadway Subway will provide fast and frequent SkyTrain service to B.C.'s second-largest jobs centre, and an emerging innovation and research hub. 🍁

Credit: Alberta Health Services



Calgary Cancer Centre Surpasses Five Million Construction Hours

2021 Top100 Projects Rank: 44
Value: \$1.4 billion

Despite the challenges of the ongoing pandemic, construction work on the Calgary Cancer Centre is proceeding as per the project planning schedule. The February update on this major healthcare infrastructure project indicated that more than five million hours have been worked on the construction site so far.

The Alberta Health Services project is providing a new comprehensive cancer centre at the Foothills Medical facility site in Calgary, Alberta. The 95,000-plus-square-

metre complex will include 160 inpatient beds, outpatient facilities with over 100 exam rooms, systemic treatment and radiation treatment technologies, clinical trial units and research laboratories, a knowledge exchange centre, and 1,650 stalls of underground parking.

Inside the facility, departmental workspaces are being installed. Outside the facility, the installation of the copper panels for the Sacred Space area has begun. The first set of operational planning working

groups are wrapping up their initial set of planning discussions. The second set of planning groups representing clinical and non-clinical program areas are meeting soon.

Operational planning will be a key focus area for the project team in 2021, in addition to technical and equipment readiness activities. Completion is on schedule for 2023.

The design-build team consists of PCL, Stantec, and DIALOG. Other key players on the project include Arup, KPMG, Morrison Hershfield, and Aon. 🍁

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Plus: Pivotal project planning and funding to build back better



On February 16, senior executives from across Canada came together virtually to celebrate a historic \$250 billion in public infrastructure development featured in the Top100 Projects report for 2021. Federal Minister of Infrastructure and Communities **Catherine McKenna** delivered the keynote address, providing attendees with insight about her ambitious plans—and funding commitments—to build cleaner, greener, and more inclusive Canadian infrastructure for a resilient recovery from the ongoing pandemic. A highlight of the speech was the newly announced \$15 billion public transit fund.

Following the keynote, a panel on investing in Canadian infrastructure projects provided awareness about where the prevailing winds are blowing into 2021 and beyond. **Ehren Cory** from the Canada Infrastructure Bank, **Niilo Edwards** from The First Nations Major Projects Coalition, **Enid Slack** from the Munk School of Global Affairs, and **Vickie Turnbull** from the Royal Bank of Canada each brought their expertise to the table. Pandemic

impact was a central talking point. For instance, broadband infrastructure is more of an immediate priority. Stimulus funds are addressing these issues, while also providing long-term benefits. There was also uncertainty expressed about how the urban landscape is shifting with more and more people working remotely, and how this will impact infrastructure spending.

A second panel on building Canada's infrastructure plans featured **Mark Liedemann** from Infrastructure BC, **Michael Lindsay** from Infrastructure Ontario, **Mary Van Buren** from the Canadian Construction Association, and **Phil Verster** from Metrolinx. There were some interesting experiences shared about provincial and territorial pipelines and how teams are working together to address evolving capacity issues. There was a clear consensus about the need for more a more detailed timeline and assurance for the flow of infrastructure funds. Concerns about risk-transfer and about the lack of confidence in supply chains were also communicated.

Finally, a third panel gazed into the crystal ball to discuss new trends and innovations, including everything from more public-private partnership projects to sustainable materials such as concrete that captures carbon. **Reece Bailey** from EXP, **Eric Peissel** from WSP Canada, and **Kelly Wallace** from PCL Construction discussed the technological and societal demands they are actively addressing as Canadians work to build back better.

In between informative panel sessions participants gathered in online network groups through the Whova platform, which also provided a variety of resource materials contributed by the various speakers, sponsors, and attendees.

ReNew Canada will be reporting on all the issues discussed in the dynamic panel conversations in more detail in upcoming editions.

Work is underway to develop the 2022 edition of the Top100 Projects report. Next year we plan to be back to an in-person format for this annual event, at The Carlu in Toronto. 🍁

For further information about the annual report and event, visit renewcanada.net/top100-projects

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RCCAO calls for a Safe Restart Agreement 2.0

RCCAO welcomed the financial relief that was provided by the provincial and federal governments in 2020 to help Ontario municipalities deal with budget shortfalls caused by COVID-19.

The money was critical because it provided municipalities with a measure of financial certainty that allowed them to proceed with state-of-good-repair (SOGR) projects that were shelved due to the unprecedented health and economic crisis.

However, we are not out of the woods yet. Municipalities are still facing significant deficits in 2021 and need the provincial and federal governments to step up with a Safe Restart Agreement 2.0.

Municipalities must have these funds or, at the very least, assurances of additional support early on in 2021 or they will again face the prospect of having to delay or cancel SOGR projects this year.

Why does it matter?

Our economy is at stake. Cancellation of such projects would have disastrous effects on the construction industry. A report done for RCCAO by Prism Economics and Analysis indicates there will be heavy job losses in construction and related industries if investments in these projects dry up.

Project tenders have already declined, resulting in hundreds of construction workers being laid off. Research shows that upwards of 117,000 jobs are at risk in the province with Ontario potentially losing around 41,000 jobs if project cancellations and deferrals continue to track at the present 35-per-cent rate.

Essential and critical infrastructure would fall into a state of disrepair that will result in higher repair costs in the future and present danger to public safety. The present economic downturn will worsen as will Ontario's economic competitiveness.

What is RCCAO's solution?

RCCAO is asking the provincial and federal governments to continue their collaboration and be there again for municipalities.

Municipalities will need additional assistance to reduce expected deficits in 2021 or they will be forced to cut back on SOGR projects. As such, it is crucial that adequate funding continue, or municipalities will again face the prospect of having to delay or cancel projects to balance their budgets.

We urge the Province of Ontario and Government of Canada to keep the momentum going and collaborate on a Safe Restart Agreement 2.0.

Visit rccao.com to find out more.



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APPOINTED



Corinne
Lynds

Actual Media Inc., the parent company of ReNew Canada, is pleased to announce that **Corinne Lynds** has joined the company as content director. Lynds will be responsible for managing all editorial and content operations. She will oversee industry-leading content creation, curation, and delivery for readers, visitors, and followers of our print, digital, and experiential platforms across the infrastructure, water, and environment sectors.

“Corinne brings a rare combination of B2B journalism and publishing expertise, as well as creative agency smarts and strategies,” said **Nick Krukowski**, vice president and publisher of Actual Media.

Andrew Macklin, the former editorial director, departed the company in January to pursue an executive communications role with WSP Canada. Over the last five years, Macklin led many important editorial and event projects and product launches and will continue to work closely with Actual Media and ReNew Canada in his new position.



Omar
Alghabra

Member of Parliament for Mississauga Centre **Omar Alghabra** has been appointed Minister of Transport, succeeding **Marc Garneau**, who moves to the foreign affairs portfolio. Alghabra was previously the parliamentary secretary to the Minister of International Trade Diversification. He brings to his new role an engineering background, parliamentary experience in public service renewal, and a history of advocating for public transit in the Greater Toronto Area.

The transport portfolio, which includes railways, marine safety, aviation and more, is currently challenged with travel restrictions and new pandemic regulations. In his mandate letter, Prime Minister **Justin Trudeau** asks for Alghabra to recognize the unique impact of COVID-19 on the Canadian air travel network, work to make zero-emissions vehicles more affordable and charging stations more accessible, and develop a more comprehensive blue economy strategy.



Steve
Loutitt

Northwest Territories (NWT) Premier **Caroline Cochrane** recently announced the appointment of **Steve Loutitt** as the Deputy Minister of Infrastructure.

“Steve Loutitt brings extensive

experience that will be a valuable asset to the Government of the Northwest Territories,” said Cochrane. “He has a long and successful career with the GNWT, and I have confidence he will be able to inspire his department and continue to deliver on the commitments made to advance the priorities of the 19th Legislative Assembly.”

Loutitt has over 30 years of experience working in the public service in progressively senior roles within the former Department of Transportation and Department of Infrastructure, most recently as Acting Deputy Minister.



Ryan Zizzo

Mantle314 has announced that its climate-smart construction division will now operate as a stand-alone company known as Mantle Developments.

Ryan Zizzo, who was the co-founder and chief operating officer of Mantle314, will lead the new firm as chief executive officer.

A civil engineer trained in structural design and environmental engineering, Zizzo is a leading expert on low-carbon construction. He has been focusing on sustainable construction for the past 12 years across North America and Europe.

“There is a significant opportunity to not only reduce GHG emissions through reducing embodied carbon in construction material extraction, manufacturing, delivery, and construction methods but to shift the market towards materials which actually store carbon,” says Zizzo. “This can move the construction industry from being a massive source of carbon emissions to becoming one of society’s primary ways to remove carbon from the atmosphere.”



Tamara
Vrooman

Minister of Infrastructure and Communities **Catherine McKenna** announced the appointment of **Tamara Vrooman** as chairperson of the Canada Infrastructure Bank. “Tamara is an excellent choice for chair of the Canada Infrastructure Bank,” said McKenna. “She brings a strong financial and infrastructure background, and important leadership skills to the role.”

Vrooman is the CEO of the Vancouver International Airport. She previously led Canada’s largest community credit union through the 2008 financial crisis and served as B.C.’s Deputy Minister of

Finance where she steered the ministry’s \$36 billion fiscal plan, resulting in three AAA credit rating upgrades. “She has the right background and experience, and she knows how to get things done,” stated McKenna.



Matthew
Hickey

Waterfront Toronto appointed architect **Matthew Hickey**, a member of the Mississaugas of the Credit First Nation, as the first Indigenous design expert on the agency’s Design Review Panel. Hickey is a partner at Two Row Architect with 14 years of Indigenous design experience, a sessional instructor at the Ontario College of Art and Design, and a member of the board of Artscape Toronto.

In welcoming Hickey, Waterfront Toronto CEO George Zegarac said, “Out of respect for Indigenous peoples’ role as the stewards of our shores, Waterfront Toronto wants to ensure our development work acknowledges and celebrates Indigenous history, culture and ongoing presence in the area. I hope to continue working together with the many First Nations and other Indigenous peoples represented in Toronto as we build bridges to the future.”



Andrew
Bowerbank

The Canadian Wood Council (CWC) welcomes **Andrew Bowerbank** as its new vice president of market development & Wood WORKS! national director. Previously, Bowerbank has held a number of notable executive roles in Canada’s building, energy, and infrastructure sectors through WSP and EllisDon. He is also the former CEO of the World Green Building Council, a published author, and recipient of the prestigious “Ontario Premier’s Award” for his career accomplishments.

The announcement from CWC states: “Andrew brings a wealth of knowledge and experience in marketing and communications to the Canadian Wood Council. We are delighted to have him join the team.” ♻️

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Tuesday, May 11
Conference Full Day 1

Wednesday, May 12
Conference Full Day 2

Thursday, May 13
Conference
Half-Day Closing



The past year has been challenging in many regards with the onset of COVID-19 and a world pandemic. Many municipalities across the country, and the world over, are struggling to do more with less in terms of asset management.

Connect with us online as we reflect on the past year and set our sights on refocusing and determining the way forward in lieu of the challenges that face us.

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By Andrew Macklin

From an infrastructure perspective, Canada is a fractured country. We have more major transmission lines running north and south than we do east and west. We have roadways that change dramatically in quality just a few kilometres on either side of the provincial/territorial border. And, while not public sector infrastructure, we don't have a pipeline that provides Canadian resources to all provinces.

Prime Minister John A. Macdonald won an election on the development of a sea-to-sea railway, unifying the country with a single, fundamental infrastructure project. Since then, government after government has cobbled together networks with fractured provinces and territories, such as the Trans-Canada Highway, but with no real national lens in place.

One bold, massive infrastructure project seeks to change this: the national corridor. The national corridor, depending on the variation of the idea that you prefer, could provide a single stretch of land with multiple infrastructure functions, including energy transmission, broadband, oil/gas pipeline, rail, and/or highway. It has the potential to unlock new economic opportunities throughout the country, and

provide a sound way to reach communities with a host of resources.

The idea has been around for decades. But this most recent iteration has come to fruition thanks to a 2016 research paper from the University of Calgary. Since then the idea has been bandied about in political circles across Canada, gaining mixed reviews from elected officials of all stripes. And recently, the Government of Alberta has committed resources to try and push the idea forward, seeing its potential for economic benefits across the country.

Unfortunately, the province and political stripe that has picked up the project is also the reason for a new round of resistance to the issue. At face value, it's all too easy to make the connection: say Alberta and pipeline in the same sentence and you know the reaction you will receive in some circles.

The problem with that easy connection is that it loses the importance of what could be a game-changing national infrastructure project for Canada. A single corridor that provides resources everyone needs. It opens up communities to expand, to reduce cost of living, and to become part of the greater national network. Clean electricity to communities relying on diesel, 5G to remote

locations fighting with 20-year-old internet speeds, access to new tourism opportunities. And the list goes on.

And Alberta is taking the right approach on this issue in these early stages. Don't want the route to go through your land? No problem, it'll go through south or north of you and those communities can reap the benefits of the connection. Real engagement, community by community, nation by nation, province by province.

It's easy to get caught up in the politics of something of this scale. It's hard to fathom the scope of a project this massive. But the benefits, for all Canadians, could be huge.

Shouldn't we be putting them first? 🍁

Note: This is my final column for ReNew Canada as I have moved on to a new opportunity in the infrastructure sector. Thank you for reading my insights for the past five years. I am sure we will cross paths again soon enough.



Andrew Macklin is an executive communications specialist at WSP Canada and former managing editor of ReNew Canada.

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