The Ten Infrastructure Projects for a More Competitive Ontario

June 2021

ONTARIO REAL ESTATE ASSOCIATION

This is a paper about future-shaping infrastructure

Ontario REALTORS® believe in the unlimited potential of this Province. That's why we at the Ontario Real Estate Association want to shine a spotlight on big projects that will generate sustained prosperity for the most people. As we begin to emerge from the devastating effects of the global pandemic, we must focus on recovery and kickstarting resilient, long-term growth.

A robust economy leads to more take-home pay, which can put the Canadian dream of home ownership within more people's reach. Home ownership fosters vibrant communities. These act as magnets for talent and investment, increasing economic output. Economic growth then allows us to pay for the types of infrastructure and public services that spur productivity, which in turn triggers entrepreneurship, business investment, job creation and higher incomes. And so on in a mutually reinforcing cycle.

We asked KPMG Global Infrastructure Advisory to help us identify projects that fit this description. We worked with them to gather the facts and consult leading minds in commerce, industry and academia. We thought hard about the pandemic and what it means for new ways of working, regional supply chains and the extraordinary growth of e-commerce. Based on that research, we put together our Top 10 list.

These game-changing projects will boost the productivity of our human capital and increase Ontario's ability to produce and ship value-added goods. They will open new routes and remove barriers to and from our largest trading partners. In short, they'll help us compete.

We invite Ontarians to take our list as a starting point — and to engage us in an important dialogue about how we can use infrastructure to enhance Ontario's competitiveness.

Contents

Introduction

Eclipsed only by the maple leaf and the Mountie, the CN Tower is the most recognizable symbol of our nation.

Completed in 1976, this megaproject was the tallest free-standing structure in the world for three decades. Less well-known is that its original purpose was to ensure reliable radio and television broadcasts throughout the heart of Canada's burgeoning economy.

But the CN Tower is only one of Ontario's many ambitious infrastructure achievements. Our forbearers transformed Niagara Falls into a source of affordable electricity, bridged vast geographic distances with railroad and highway links, and harnessed the potential of nuclear power as a reliable source of energy. Our wood products and minerals and skilled workers supported construction activities far beyond our provincial borders.

Canadians build things. Great things. With steel and concrete, sharp minds and human muscle.

It is no surprise that infrastructure captures our imagination. Building these engineering marvels took courage, but so did the decisions to approve and fund them. The women and men who came before us placed big bets — on our economic potential, our public finances and our ability to deliver.

What is the next wave of projects that will inspire future generations and generate sustained prosperity? That's the question OREA sought to address with this paper.

1829
First Welland Canal

A 45-kilometre long route, originally comprised of 40 locks — this initial canal replaced land-based portage routes between Lake Ontario and Lake Erie.

1832
Rideau Canal

Originally built for Canada's national defence, this 200-kilometre long waterway connected Ottawa, Lake Ontario and the St. Lawrence River. It's the oldest, continuously operated canal system on earth and a UNESCO World Heritage Site.

1885
National Transcontinental Railway

A direct link between ports in Atlantic Canada and markets further inland, this railway's construction led to mineral discoveries in the Canadian Shield that resulted in Ontario's robust mining industry.

1922
Adam Beck Hydroelectric Generating Station

This Niagara Falls power plant was the first large-scale, publicly-owned utility in Ontario. At the time of its construction, it was the world's largest power plant.

1937
Queen Elizabeth Way

The oldest divided highway in North America. The QEW was constructed to stimulate the economies of Hamilton and Toronto.

1945
Chalk River Heavy Water Nuclear Reactor

The first made-in-Canada nuclear reactor. It went on to support a myriad of medical applications, in addition to supporting ongoing research generally.

1954
Yonge Subway

The first subway line in Canada, this mass transit project accelerated Toronto's economic, real estate and population boom.

1959
St. Lawrence Seaway

A 300-kilometres long seaway that connects ports along the St. Lawrence River to Ontario's Great Lakes. This economic infrastructure enhanced trans-Atlantic trade and bound the economies of Ontario and Quebec.

1962-70
TransCanada Highway

At 8,000 kilometres, this highway between Victoria and St. John's is one of the world's longest roads. The Ontario portion's midpoint (known as "the Gap") was originally considered an insurmountable engineering challenge given the terrain.

1967
GO Train

Ontario launched its first interregional rail transit system to address post-War population increases, economic growth and snarling road congestion.

1971
Pickering Nuclear Generating Station

Canada's first nuclear power plant and still one of the largest in the world. It remains in operation and accounts for roughly 14% of Ontario's electricity needs.

1976
CN Tower

The world's tallest free-standing structure from 1976 to 2007, it was internationally renowned as an architectural and engineering triumph. It resolved numerous telecommunications challenges resulting from Toronto's construction boom.

Selecting our Top 10

This paper focuses on economic infrastructure that is best addressed by leadership from Queen's Park.

Our focus on these ten projects doesn't mean that government and government alone should foot the bill — but it does mean that government is best placed to spur the investment. That could take many different forms.

On any given project the provincial government might lead development and funding, or it could facilitate planning and approvals. In other cases, Queen's Park might play an advocacy and leadership role in bringing parties together, especially when infrastructure crosses municipal boundaries or involves areas of federal responsibility, such as for projects involving the border or railways. In all cases, we take as a given that responsible investment will rigorously evaluate value for money and relevant environmental, social and governance considerations, such as environmental assessments and Indigenous consultations. The Province and Government of Canada recently announced a $12-billion collaboration on transit for Toronto and Hamilton, including funding for made-in-Ontario, zero-emission streetcars. That's the type of teamwork required to turn big ideas into jobs and competitiveness.

With KPMG's support, we looked at a list of projects under a variety of economic infrastructure asset classes that are typically considered to have direct impacts on the economy. We then assessed the candidate projects against a set of criteria and determined our Top 10 list. As a result, some types of infrastructure like health care and education, while critically important, do not appear in this paper.

Asset Classes

- Airports
- Roads
- Rail
- Transit
- Transportation
- Border
- Broadband
- Water & Wastewater
- Nuclear Energy
- Renewable Energy

Criteria

- Projects that are conceptual or still in early planning, design or procurement
- Projects that address multiple strategic challenges
- Projects with a direct link to Ontario's economic competitiveness
- Projects where there is a clear imperative for the Province to lead, influence or enable
- Projects that address Ontario's regional strengths as well as those of Toronto and the GTA
- Projects of ambitious scale

OREA's Top 10 list

We've shortlisted ten projects to focus Ontarians on big thinking.

Regional diversity is a pillar of Ontario's economic strength, and that's why our Top 10 list includes projects in every part of the Province.

Provincewide Opportunities

9. Broadband to address the Urban-Rural Digital Divide
10. Ontario's Clean Energy Potential

Greater Toronto Area

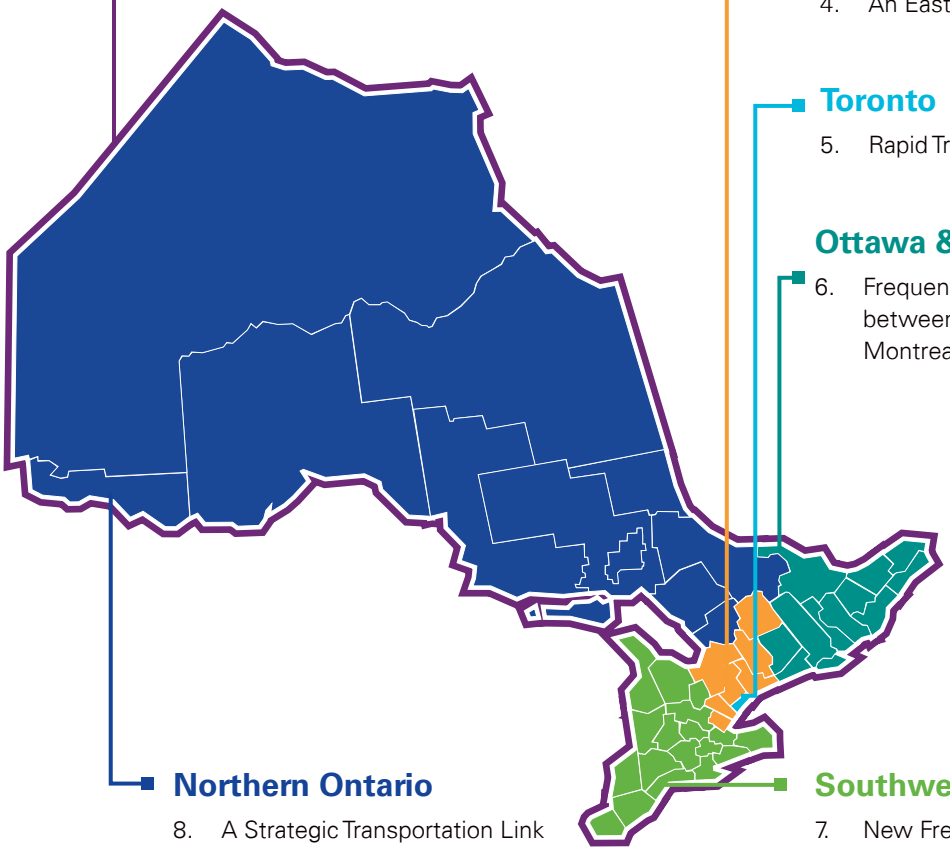
1. A Pearson Area Transit Hub
2. A New Bypass for GTA Freight Rail
3. Extending the Yonge Subway into York Region
4. An Eastern GTA Transit Hub

Toronto

5. Rapid Transit in Toronto

Ottawa & Eastern Ontario

6. Frequent and Reliable Rail Service between Toronto, Ottawa and Montreal



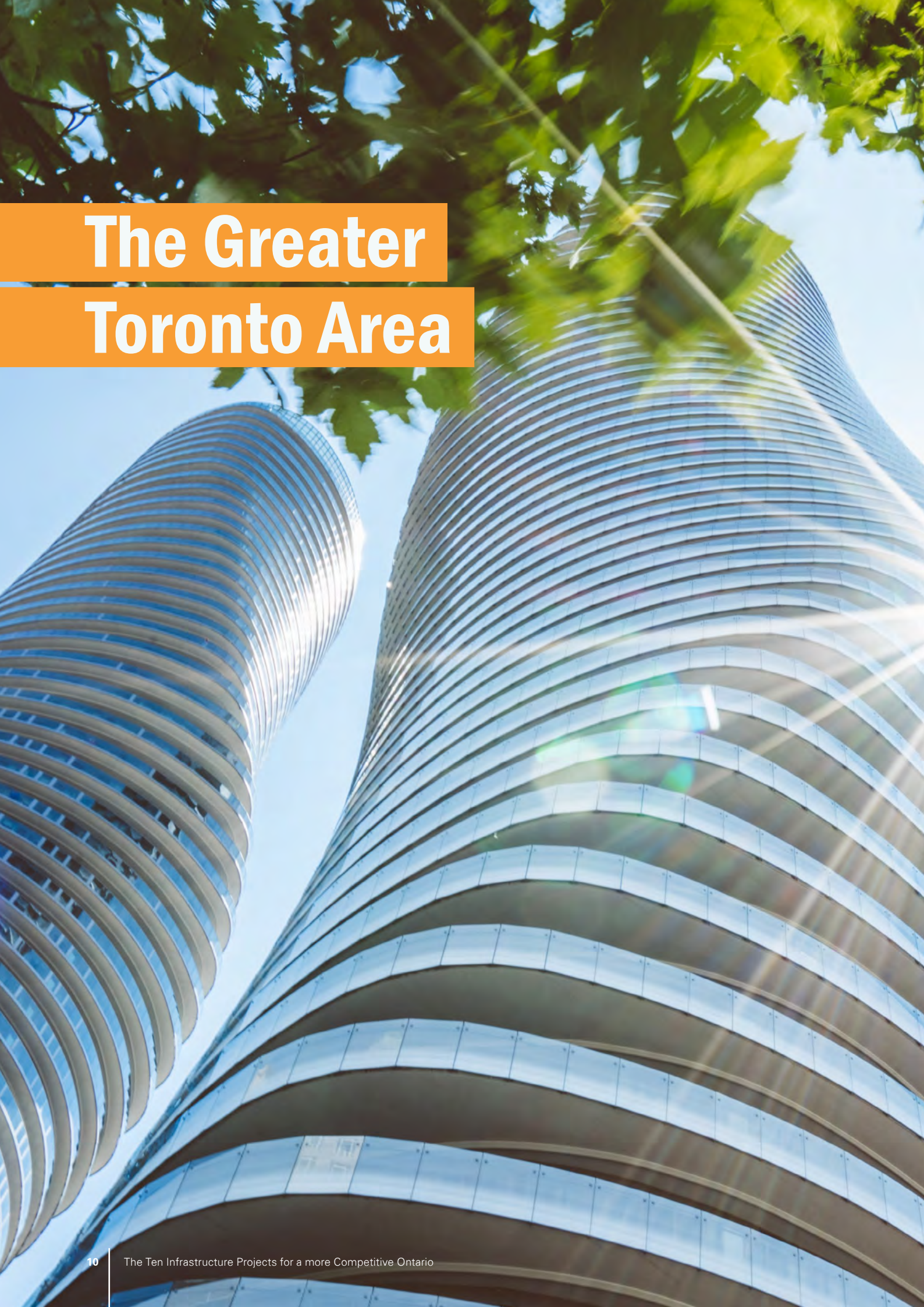
Northern Ontario

8. A Strategic Transportation Link to Ontario's Ring of Fire

Southwestern Ontario

7. New Freeway and 21st Century Border Infrastructure for the Niagara Peninsula

The Greater Toronto Area



The GTA's central economic challenge is grappling with its own success: how to keep people and products moving in the face of sustained, explosive growth.

The Greater Toronto Area is Ontario's economic engine. It accounted for more than 90% of the Province's net new jobs between 2003 and 2018 and consistently tops the charts of North America's fastest growing regions.[1] Over the next two decades, the GTA's population is expected to surge from 7 million to nearly 10 million people.

A cornerstone of economic competitiveness is the efficient and reliable movement of talent and goods. We spoke to Canada's leading economic minds — including big bank economists, renowned academic voices and the leaders of industry associations, whose members live and breathe competition — and they consistently ranked traffic congestion and lack of transit connectivity across the GTA as Ontario's most challenging economic problem, if not the nation's. Some estimates put the cost to the economy of all this traffic at $6 billion each year, not counting the enormous contribution to greenhouse gas emissions.[2,3] That is simply not sustainable. Traffic volumes in the GTA can be expected to return to and eventually exceed pre-pandemic levels. Multiple large projects are required to address this barrier to economic competitiveness.

Major investments in new roadway and transit infrastructure have already been made in recent years, and more are planned to begin construction soon. Projects like the Highway 407 East Extension are already operational.

In addition, several 400-series highway projects in the region and Metrolinx's landmark Regional Express Rail, one of the largest infrastructure projects in the country, are well-advanced or in construction. These projects are important and Ontario REALTORS® support them wholeheartedly. They didn't make our Top 10 list because they're already underway. Our list is designed to get decision-makers to think about the next tranche of projects that need support and sponsorship. Our focus on the next wave reflects the fact that it will take sustained effort and attention to buttress the GTA's recent and future growth coming out of the pandemic.

01

A Pearson Area Transit Hub

Cost estimates

- Cost estimates are in the initial development phases

Current status

- Very early concept stages
- Most advanced transit planning is the Eglinton Crosstown West Extension. While the Toronto Segment is in a mix of planning and early procurement, the Airport Segment is in initial planning phases currently estimated at a cost of $1.6 billion

Rough timelines

- Hub: Early to mid-2030s
- Transit expansion: Long-term – likely beyond 2030 for all connections to be completed

Project details

- All transit modes expected to converge at the hub
- Approximately 25 kilometers of new LRT track from Eglinton West LRT and Finch West LRT
- Numerous local and regional bus routes

Economic benefits

- Potential to add 50,000 to 70,000 additional workers from new businesses and employment space in the Airport Economic Zone
- 43,000 existing vehicles taken off nearby roads daily
- Increases productivity by reducing more than 3 million hours annually of lost time stuck in traffic[4]

The western GTA is an economic powerhouse. The area surrounding Toronto Pearson Airport, referred to by economists and urban planners as the Airport Economic Zone (AEZ), is the second largest employment area in Canada. It is already home to more than 330,000 jobs, second only to downtown Toronto's employment cluster (in terms of the number of jobs). An airport area transit hub has the potential to increase that to 700,000 jobs by late 2035, further increasing the area's GDP contribution by 2.2%. It is dynamic and full of growth potential.

The problem, of course, is traffic congestion. Underserved by transit, more than nine out of ten workers in the airport area travel to and from their jobs in the AEZ by car. Pre-pandemic, the Airport Economic Zone accounted for over 1 million daily work trips, making it the top generator of car trips in the entire Greater Golden Horseshoe. Pre-pandemic, the Greater Toronto Airports Authority (GTAA) estimates that by 2037 Pearson Airport will handle upwards of 85 million passengers annually, servicing an increase of 38 million travelers and commuters. Despite the disruption to air travel caused by the pandemic, and even anticipating a lengthy recovery for air travel, regional roadway congestion is still anticipated to worsen without transit connectivity. Compounding these traffic loads are trips by other commercial vehicles that must travel through the Greater Toronto Area. As a result, the GTA's major highways are the most congested in Canada, all located in the Airport Economic Zone area.

A transit hub in the Pearson area would cut through the congestion by integrating several existing and planned transit lines into a new multimodal transportation anchor. This new hub would provide a passenger interchange for regional rail lines such as the Kitchener GO (Regional Express Rail) and UP Express, and for transit connections to the Eglinton Crosstown LRT, 407 Transit Way, Finch West LRT, Mississauga Bus Rapid Transit (BRT) and local bus routes to serve the last-mile solutions within the AEZ. The fact that an airport area transit hub would also serve air travellers and employees of Canada's busiest airport makes it a clear priority for senior government investment.

The Government of Canada and the Province of Ontario need to continue to work together to advance the associated transit projects and to ensure that they seamlessly connect to serve the Pearson area. Given that the concept of improved transit connections in this area involves three municipal jurisdictions and four transit agencies — not to mention a federally regulated airport — the Province's cross-boundary perspective is critical to getting it done. This was evident in the recent announcement where the Federal government is supporting the Province's five priority projects, including the Eglinton Crosstown West Extension that will facilitate better transit connectivity to the Airport Economic Zone.

The Greater Toronto Area

02 A New Bypass for GTA Freight Rail

Cost estimates

- The rough order of magnitude for a project like this could range from $2 billion to $6 billion depending on the scale of planned investment to the rail corridor

Current status

- Conceptual

Rough timelines

- Long-term – likely beyond 2040

Project details

- Approximately 15 to 20 kilometres of new freight track
- The project involves numerous corridor improvement activities along GTA portions of the Province's GO Transit network and the Canadian National Railway and Canadian Pacific Railway networks

Economic benefits

- Expects to decrease freight mileage by 11 kilometres and, in turn, travel times
- Freight contributes to the federal and provincial Continental Gateway strategy to facilitate faster delivery of goods to market
- Unlocks economic potential connecting urban areas and providing more opportunities and places for people to live and work
- Opens up opportunity for Regional Express Rail on Kitchener Line reducing travel time by over 30 minutes
- Provides an opportunity to establish a new GO Transit service connection between the east and west of the GTA[5]

The railway tracks that crisscross the Greater Toronto Area were built in the late 1800s with the primary purpose to move goods to market. Since the 1960s, we've been using these same railway tracks to move people to and from work, and we're moving more and more people each and every year. Just-in-time supply chains and the rise in online retail accentuated by the pandemic will only reinforce existing bottlenecks.

Those are big logistical challenges. Freight rail, which carries heavy cargo, limits the passenger volumes that can share the same tracks. The end result is longer, less-predictable commute times and inefficient use of our existing infrastructure. People now expect goods to be delivered faster than ever before, placing immense pressures on our freight rail infrastructure. We need to move goods **and** people, but it can't be done well on the same tracks.

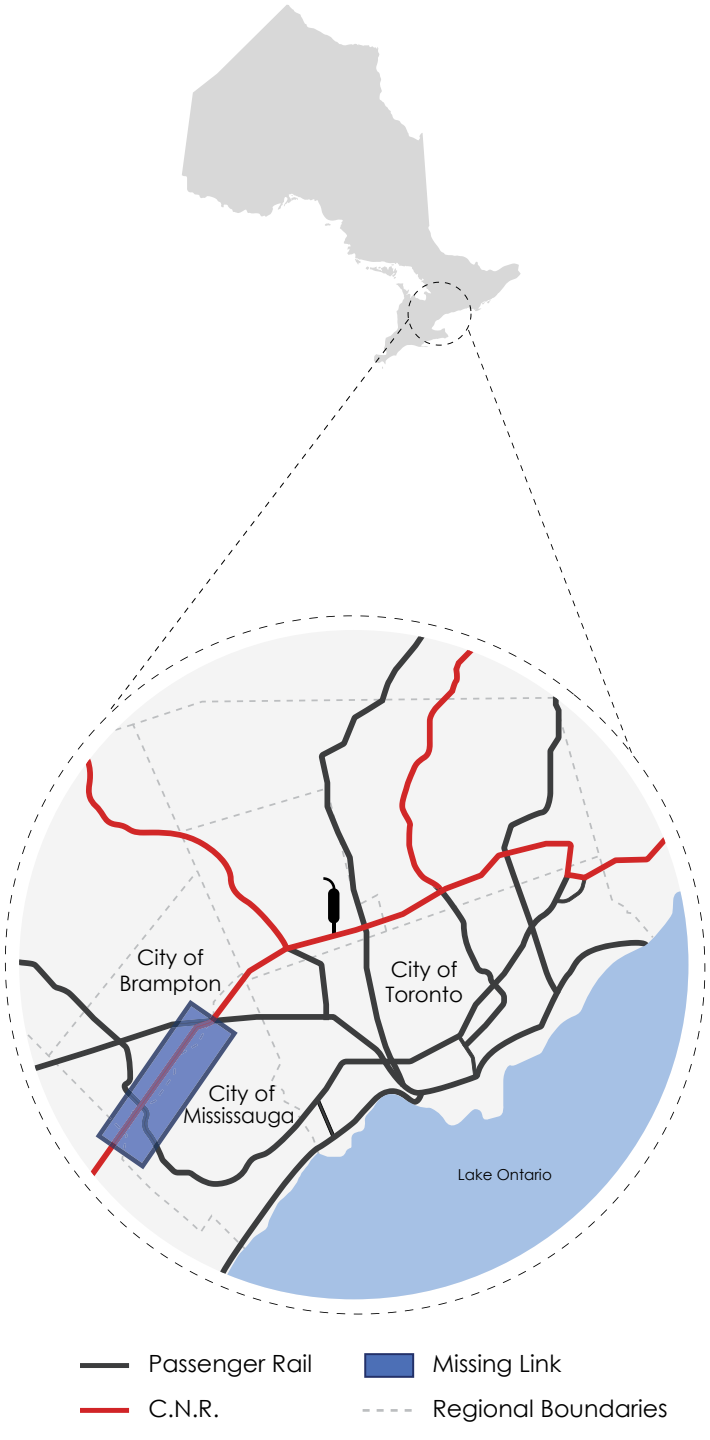
A project long-known as "the Missing Link" would enable significant growth in passenger volumes by separating freight and passenger trains onto distinct railway tracks. The project would require construction of new freight track in the west-end — between two existing freight lines — from Brampton to Mississauga along the Highway 407 right of way to complete a "missing link" of freight railway track. This new piece of track would optimize freight traffic, since these trains would now be able to use alternative freight railway tracks to avoid tracks that currently are also used by passenger rail. In essence, it would allow cargo trains to bypass the most densely populated areas of the Greater Toronto Area.

Not only would the Missing Link benefit freight operators by facilitating the opportunity for increased international trade and domestic commerce, but the project would also support the quality of life in many communities. Less freight rail through densely populated areas means less noise, and more hazardous or potentially dangerous substances diverted from urban locations.

The Missing Link is a critical step to the electrification of the Milton and Kitchener GO Lines, key elements of Metrolinx's Regional Express Rail. Although the Province has recommended pursuing service increases on the Kitchener GO Line through increased sharing of the track with CN railway, this won't address future challenges including the need for additional capacity on the Milton corridor. A new route for GTA freight will limit negative impacts on passenger service, increase speed and dependability, and remove additional cars from the road. All of these outcomes will enhance our economic competitiveness.

The Greater Toronto Area

Of all of the projects on our list, this one is perhaps the least obvious and has the lowest profile since it is a complex, out-of-sight, out-of-mind project. It will require collaboration, planning and funding that involves the federal government, three municipal jurisdictions, Peel Region, two private rail operators and Metrolinx. Only the Province has the end-to-end perspective to bring these various parties together and this important project to fruition.



03 Extending the Yonge Subway into York Region

Cost estimates

- Roughly $5 billion to $6 billion

Current status

- Preliminary planning, design and engineering

Rough timelines

- 2029 to 2030

Project details

- Approximately 8 kilometres of new subway track with four stops

Economic benefits

- Estimates an increase of 22,000 person-years of employment
- Adds 31,000 new jobs in south-east York Region
- Reduces 2,800 bus trips per day along Yonge Street north of Finch
- Provides almost 49,000 people within a 10-minute walk of a station[6]

Subways are hard to build, especially when they cross municipal borders. For a variety of reasons those borders have traditionally constrained major transit projects in the Greater Toronto Area. Not anymore. The Toronto Transit Commission's University Line was recently expanded to Vaughan. It's time to complete the connection to York Region by extending the Yonge Line to Richmond Hill.

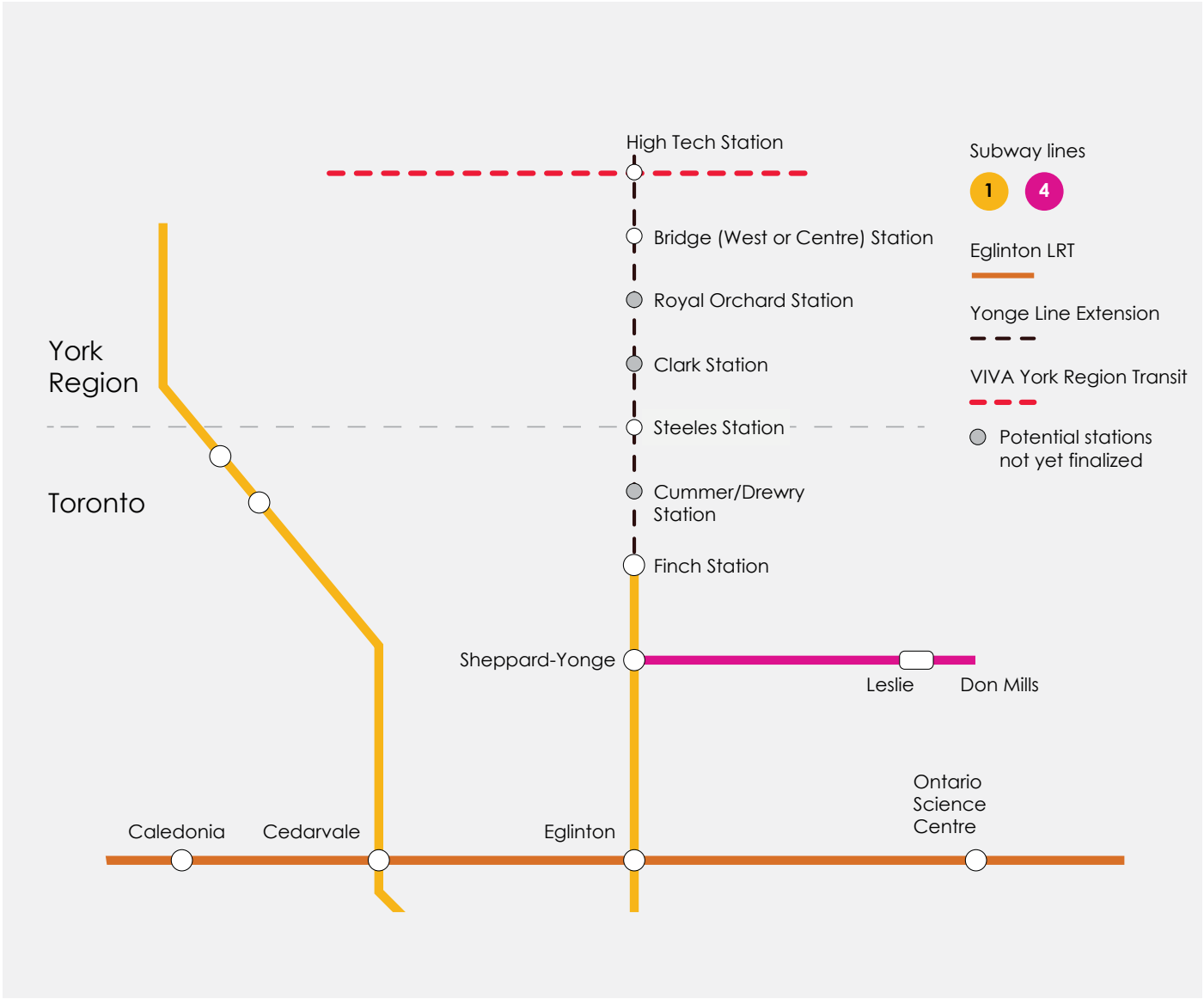
This project will enhance north-south connectivity in the northern GTA, linking Union Station in downtown Toronto with Richmond Hill Centre in York Region. York Region is a major part of the GTA's current and future growth. It is expected to add 300,000 jobs and 600,000 residents by 2041. Congestion, however, which is already bad and expected to get worse, could limit the Region's ability to grow and prosper.

The Yonge Street Corridor is York Region's economic spine. It's home to more than 50,000 jobs, including the largest communications and information technology cluster in Canada on a per capita basis. Extending the Yonge Subway by approximately 8 kilometres to Richmond Hill will accelerate the corridor's potential by enabling the possible creation of a new multimodal transit hub. This important hub will increase the connectivity of service providers like the TTC, GO trains, GO buses and York Region's bus rapid transit, providing transfer connections under a single roof — a "Union Station North" — and thus enhancing mobility across the northern GTA.

Along with reducing congestion, the Yonge Subway Extension will be the catalyst for transit-oriented communities along the route. This is expected to create complete communities that unlock employment opportunities and provide the potential for home ownership for 88,000 new residents in 23,000 new residential units. Currently there are four stations pegged for the extension. However, increasing the number of stations would increase the benefits of this long-overdue project and spur even more development along the route. This is a win-win for enhanced connectivity and increased housing supply. Both are needed for the GTA to compete.

Recent provincial budgets have committed to funding the Yonge Subway Extension. It's the right move. The Province should continue to drive this important project forward, along with its prerequisite, the Ontario Line. The Ontario Line will relieve a significant passenger bottleneck at the Bloor-Yonge interchange and therefore enable the additional passenger volumes that will accrue from the Yonge Subway Extension.

The Greater Toronto Area



04 An Eastern GTA Transit Hub

Cost estimates

- The Durham-Scarborough BRT, 407 Transitway and a new transit hub would cost approximately $3 billion to $4 billion

Current status

- Conceptual
- Planning and design stage of Durham's rapid transit corridor

Rough timelines

- Long-term – Beyond 2030 as project remains conceptual

Project details

- At least 2 transit providers expected to use the hub
- Approximately 200 kilometres of new BRT

Economic benefits

- $686 million in economic benefits including travel time savings, reliability, safety, and congestion and emissions reductions due to the Durham-Scarborough BRT
- 208 fewer traffic related injuries or deaths as a result of the Durham-Scarborough BRT
- Highway 407 Transitway would provide high-quality transit across numerous GTA communities[7]

Ontario is already making significant investments in highway infrastructure in the eastern GTA, such as the recent extension to Highway 407 East. Connectivity through transit must be next.

The population in the GTA over the next two to three decades is expected to become what is the metropolis of New York today. We need to be thinking about this growth when making planning decisions. People and neighbourhoods will require multimodal transit connectivity to ease the dependency on cars for those who want to use transit.

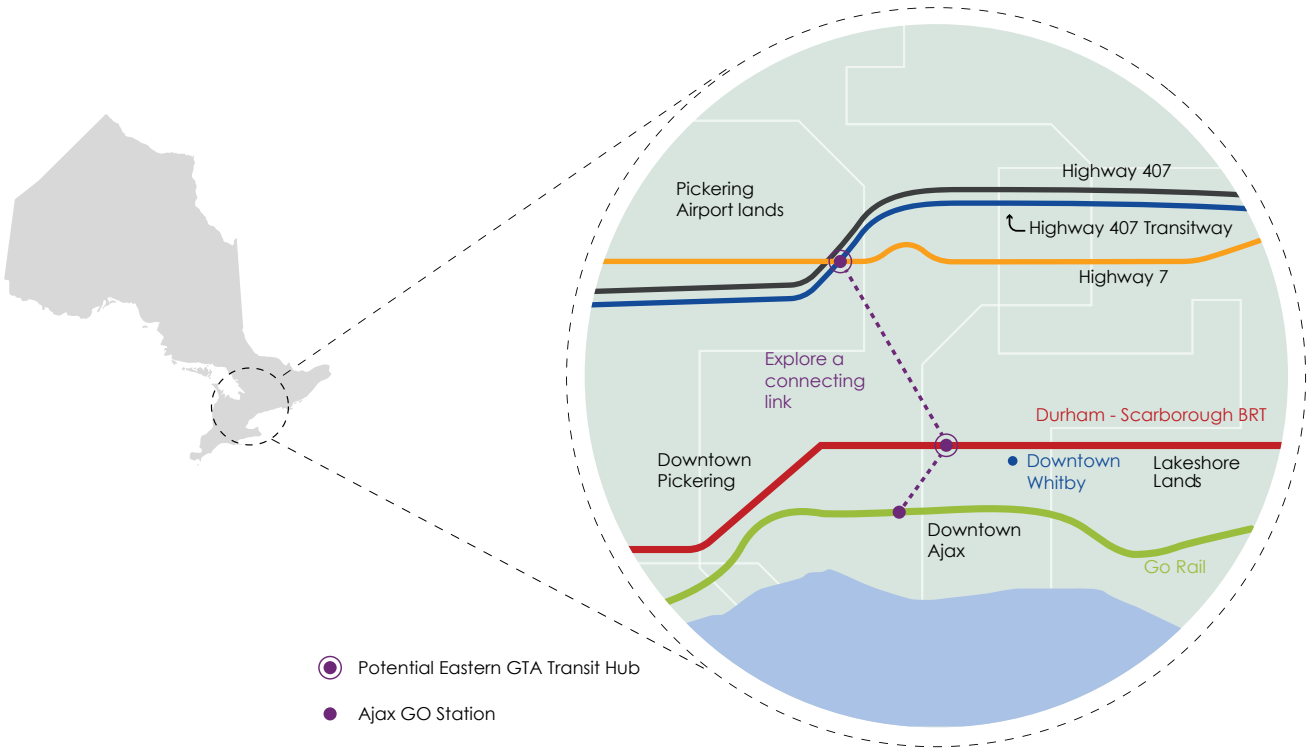
A number of important transit projects are in the planning stages. The proposed 36-kilometre long Durham-Scarborough Bus Rapid Transit (BRT) project would enhance connectivity between Toronto and

Durham Region, linking together regionally significant economic centres like the University of Toronto Scarborough Campus, downtown Pickering, Ajax, Whitby and Oshawa. In a similar way, the proposed 407 Transitway would create a new inter-regional transit route along its own right-of-way, connecting Burlington to Highway 35/115 in Clarington. Bus rapid transit would be the most flexible way to implement the 407 Transitway swiftly, but as ridership increases the route could be converted to light rail transit in the future.

While these projects are still in the planning stages and routes need to be validated and finalized, the Province should try to tie them together with other modes of transit and transportation using a new multimodal Eastern GTA Transit Hub, similar to the proposed Pearson Area Transit Hub and "Union Station North" created by extending the Yonge Subway into York Region.

The lakeshore lands or the lands zoned for a potential Pickering airport are ideal locations for an Eastern GTA Transit Hub. Transit will become increasingly important given that the Durham corridor is expected to accommodate 210,000 new residents and 66,000 more jobs by 2041. While the Government of Canada will evaluate the need for a new airport, the Pickering airport lands could in the interim play an integral role in providing transit connectivity to the eastern GTA, as well as providing access to the potential future airport. As a possible alternative site, on the other hand, the lakeshore lands are closer to GO Transit and VIA Rail. Or, to create an interconnected matrix system of transit across the GTA, why not create both? Bus transit could then provide access between them until ridership is high enough to justify rail like the UP Express.

Done right, an Eastern GTA Transit Hub with rapid transit connections to Toronto Pearson Airport via the 407 Transitway and Scarborough-Durham BRT, and the potential to connect riders to GO Transit, could service a new eastern GTA airport. Regardless of the Government of Canada's decision on an airport, the eastern GTA is growing and the communities will require more reliable transit and connectivity. These investments in an Eastern GTA Transit Hub have the right ingredients to enhance housing development and economic competitiveness with province-wide benefits.



Toronto

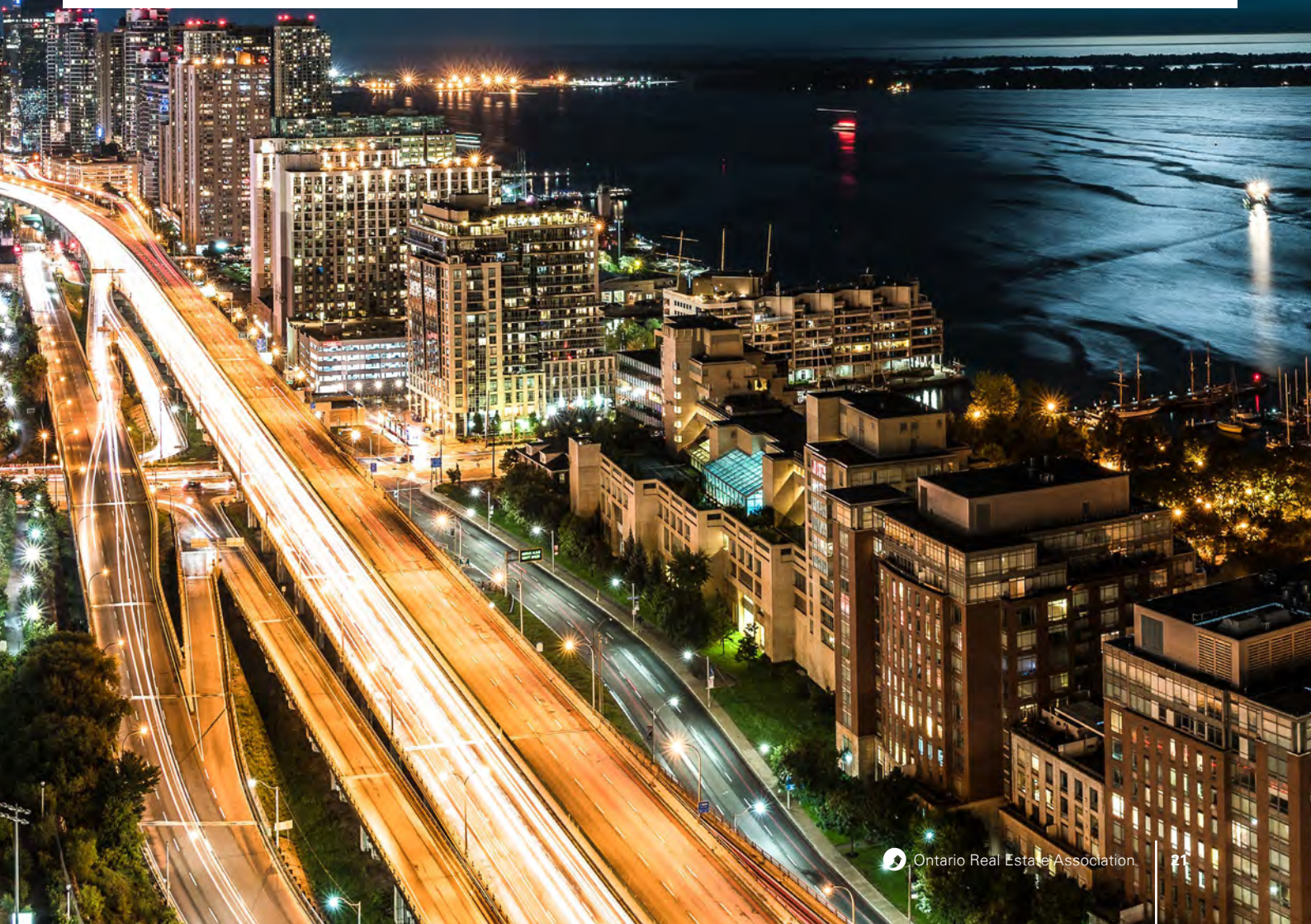
It is home to nation-leading clusters in financial services, technology, culture, education, health care and sport. Toronto is the GTA's anchor.

Toronto's success, like the GTA's, is also the root of its infrastructure challenges. After decades of sustained population growth, Toronto's rising housing costs combined with previous levels of crippling congestion put at risk its economic competitiveness, prosperity and quality of life.

For the five years preceding the pandemic, Toronto added 266,000 jobs and 343,000 residents. While the future is uncertain, Toronto's transportation and housing shortages are unlikely to be significantly improved by new ways of working brought on by the post-pandemic reality. Infrastructure simply isn't keeping pace and gaps will not go away on their own. If the City's growth returns to pre-pandemic rates, Toronto could even exceed its Employment Growth Plan before 2041.[8]

Toronto's powerful and growing knowledge-based economy will drive Ontario's competitiveness in the twenty-first century and stimulate the Province's economic recovery. But competition for human capital is ferocious, and Toronto is competing with global heavyweights like New York, San Francisco and London. In the global competition for talent, providing livable, well-connected and affordable cities will be paramount.

Major projects are underway. Regional Express Rail will increase connectivity by providing passenger train service every 15 minutes. The forthcoming Eglinton Crosstown LRT and Finch LRT will provide new services. The Port Lands Flood Protection project will unlock hundreds of acres on prime waterfront land for residential and commercial development. These projects are a great start — but they are not enough.



05 Rapid Transit in Toronto

Toronto needs more rapid transit. For a variety of complex reasons, investment has not matched the City's unprecedented growth in other areas, and Queen's Park has taken notice. Recent budgets state the provincial government's intent to deliver "faster, more reliable and seamless transit in the GTA", while making ambitious, multibillion-dollar commitments for a series of specific projects.

The Scarborough Subway Extension project is important, but it is primarily a replacement of the existing Scarborough rapid transit line. As a result, we profile here the Ontario Line Subway given the potential it holds for transformational change. Unlike any other transit project proposed for the City of Toronto, the Ontario Line contributes the most obvious benefits for congestion relief and new opportunities for transit-oriented communities (TOC).

This chapter also describes rapid transit for Toronto's waterfront. While it has not received the same level of attention as the Ontario Line Subway, it could similarly unlock extensive economic benefits along the City's picturesque waterfront, from Long Branch to the Port Lands to Woodbine Beach.

The Ontario Line Subway

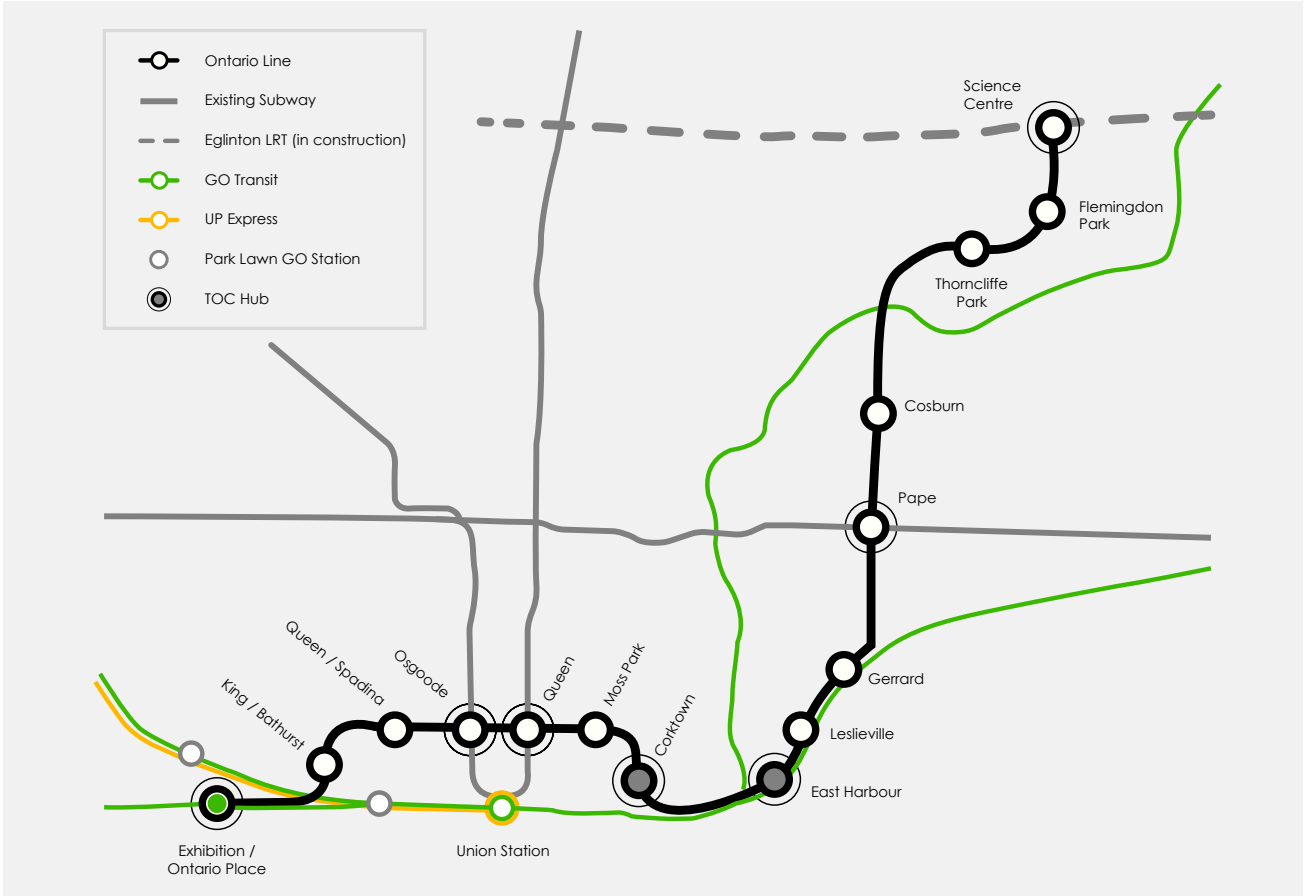
The Ontario Line Subway is urgently needed.

Previously known as the Downtown Relief Line, the 16-kilometre long Ontario Line will create new north-south and east-west routes to and from the City's Central Business District, relieving pressure on the overcrowded Yonge Subway, which operated at capacity immediately prior to the pandemic. It will dramatically enhance mobility throughout central Toronto. The Ontario Line is also a prerequisite for any northward expansion of the Yonge Subway into York Region. By diverting passengers from the Yonge Subway, the Ontario Line will relieve pressure on Yonge-Bloor Station, a key chokepoint in the TTC's subway network. Reducing congestion is needed before it can accommodate additional passenger growth.

The economic benefits are enormous. With an anticipated daily ridership of close to 390,000, the Ontario Line will put 255,000 more people within walking distance of rapid transit. That's more people connected to more jobs, driving productivity, growth and opportunity. Metrolinx analysis pegs the Ontario Line's core economic benefits between $10 billion and $11 billion.

Beyond transit, economic stimulus and quality of life enhancements through TOC are spurred by this infrastructure project. Two stations — East Harbour Transit Hub and Corktown Station — are pegged for TOCs, which will connect residential space and community amenities with multimodal forms of transit including light rail transit, GO and TTC buses.

The Ontario Line is an ambitious project. It will be challenging to deliver on-time and on-budget, cutting beneath some of the country's densest urban areas and busiest streets. There will be many cynics who say that the "new normal" renders downtown communities less relevant to future growth or who use the pandemic as yet another opportunity to postpone investment in Toronto rapid transit. Ontario REALTORS® couldn't disagree more. Queen's Park must continue to work with its counterparts at City Hall and on Parliament Hill to maintain momentum for this infrastructure priority.



Rapid Transit for Toronto's Waterfront

Toronto's true development potential is on the waterfront.

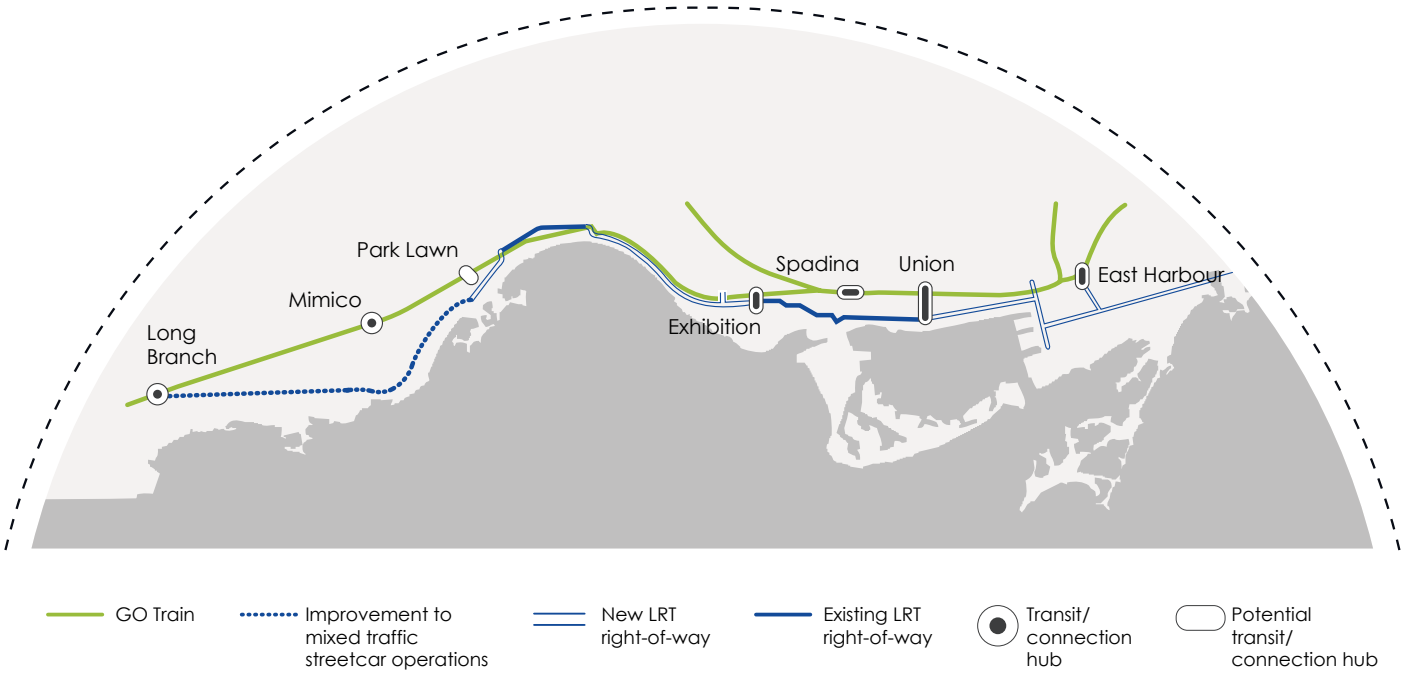
The Port Lands is the largest brownfield redevelopment opportunity in North America. It covers 880 acres of prime waterfront land, located less than five kilometres from downtown Toronto. The economic potential of this city-sized parcel of land offers a truly once-in-a-generation opportunity. Current plans call for a new, mixed-use city district with up to 25,000 new residents and commercial space for up to 30,000 new jobs

Two projects are required to unlock the Port Lands' full economic potential: flood protection and a transit link with the existing downtown network. With cooperation from all three levels of government, the $1.25-billion Port Lands Flood Protection project is already underway. Transit is the next step forward.

The proposed Waterfront LRT requires similar collaboration, most critically among the City of Toronto, the TTC, Metrolinx and Waterfront Toronto. The project would connect Woodbine Avenue in the east with Long Branch in the west, creating a new 22-kilometre long transit corridor across Toronto's beautiful waterfront. Taken together, this represents a series of short and long-term projects — a "waterfront transit network". The eastern portion of the Waterfront LRT is especially urgent because it will unlock the economic potential of the Port Lands. A smaller section of the larger proposal, the Waterfront East LRT alone is expected to spur 25,000 new housing units and 19 million new square feet of office space.

The full Waterfront LRT will also connect under-served, high-density nodes along the western waterfront, like Humber Bay Shores; it will improve connectivity to some of the GTA's major tourist destinations, like Exhibition Place, BMO Field and a re-imagined Ontario Place. The line will also relieve pressure from the overcrowded 504 King Streetcar allowing faster, dependable and more comfortable travel.

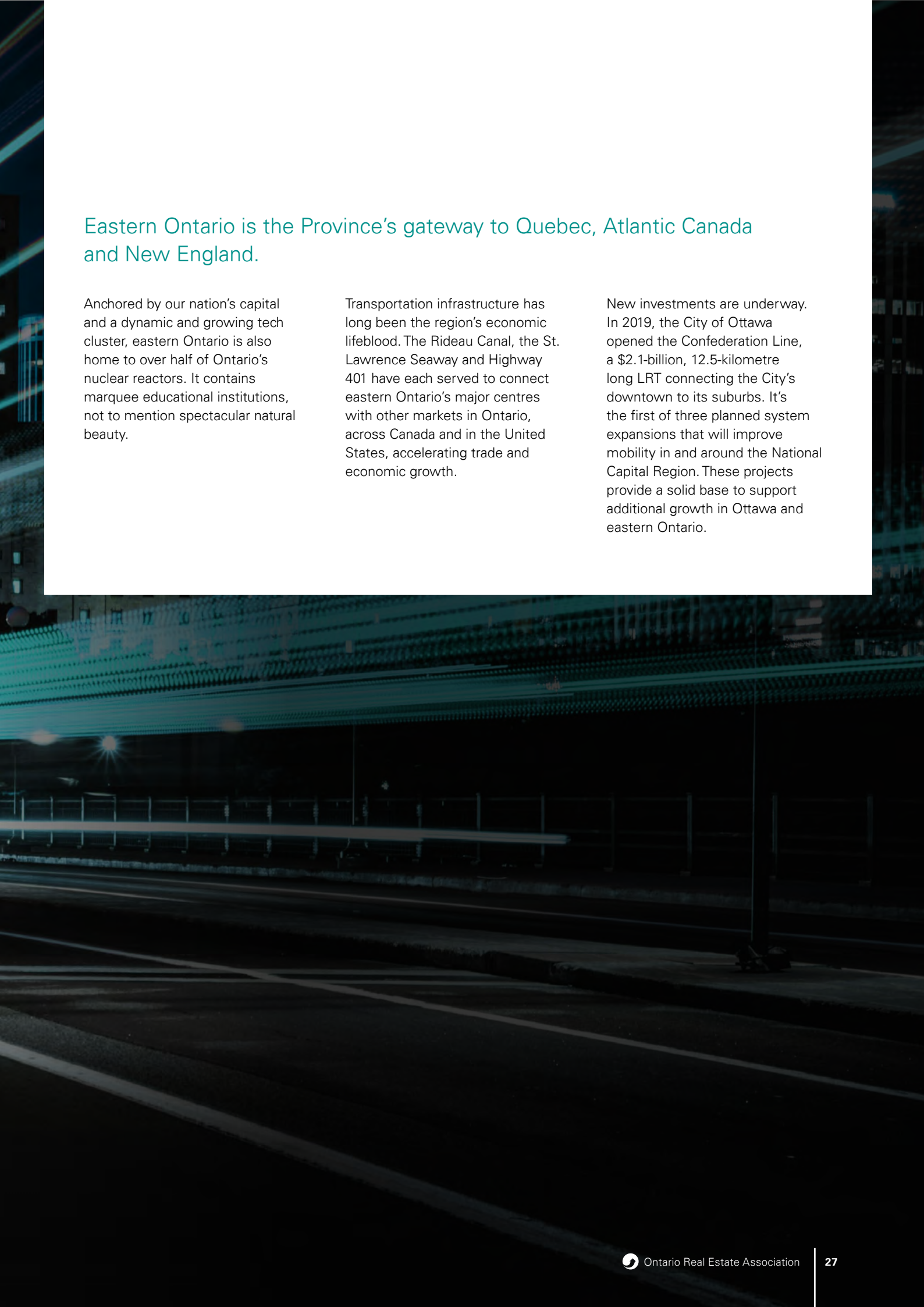
Without provincial support and funding, the Waterfront LRT will remain on the drawing board. The Province should accelerate the planning and delivery of this important new transit corridor.



Toronto

	Ontario Line[9]	Rapid Transit for Toronto's Waterfront[10]
Cost estimates	• $10 to $11 billion	• $2 billion to $2.5 billion for the east and west portion of the project
Current status	• Province is pre-qualifying interested construction and operations partners	• Early design
Rough timelines	• Project is anticipated to be complete by 2030	• Project is likely to be delivered in stages, with some stages potentially being completed within five years. Full build-out is expected over a 15 to 20-year period.
Project details	• Approximately 16 kilometres of new subway track from the Science Centre to Exhibition/ Ontario Place	• Approximately 20 kilometres of new LRT track from Long-Branch to Union Station • Approximately 7 kilometres of new LRT track from Union Station to Woodbine Beach
Economic benefits	• 255,000 more jobs within 10-minute walk of the line • 2.7 million minutes saved per week for weekday travellers • Over 60,000 new daily transit trips • 50,000 more daily transfers between rapid transit lines • Contribute to reducing traffic congestion that is broadly costing Toronto an estimated $11 billion in lost productivity annually	• $3.8 billion in tax revenue to the Province just as a result of the eastern portion • Accelerates and supports delivery of up to 25,000 new housing units • Provides an estimated 14% reduction in travel time just from the eastern portion of the LRT

Ottawa & Eastern Ontario



Eastern Ontario is the Province's gateway to Quebec, Atlantic Canada and New England.

Anchored by our nation's capital and a dynamic and growing tech cluster, eastern Ontario is also home to over half of Ontario's nuclear reactors. It contains marquee educational institutions, not to mention spectacular natural beauty.

Transportation infrastructure has long been the region's economic lifeblood. The Rideau Canal, the St. Lawrence Seaway and Highway 401 have each served to connect eastern Ontario's major centres with other markets in Ontario, across Canada and in the United States, accelerating trade and economic growth.

New investments are underway. In 2019, the City of Ottawa opened the Confederation Line, a $2.1-billion, 12.5-kilometre long LRT connecting the City's downtown to its suburbs. It's the first of three planned system expansions that will improve mobility in and around the National Capital Region. These projects provide a solid base to support additional growth in Ottawa and eastern Ontario.

06 Frequent and Reliable Rail Service between Toronto, Ottawa and Montreal

Cost estimates

- $4 billion to $6 billion depending on the route

Current status

- Planning and pre-procurement

Rough timelines

- Long-term – project is still in planning and pre-procurement phases (completion beyond 2030 is likely)

Project details

- Approximately 850 kilometres of track comprised of a mix of new dedicated track and VIA Rail dedicated track

Economic benefits

- Increased frequency of service could reduce travel times from Ottawa to Toronto by as much as 1 hour and 15 minutes
- Increased revenue and ridership as a result of hourly frequencies
- Construction of dedicated tracks and enabling infrastructure would create approximately 50,000 person-years of work, according to VIA Rail
- According to VIA Rail, the project "would extend the commutable distance to metropolitan areas allowing greater access to home ownership 'out of town' while maintaining employment in cities"
- Reduce travel times by 25%
- Improve on-time performance to over 95% from current 70% [11]

The Toronto-Ottawa-Montreal triangle is Canada's most densely populated region. Travelling between these thriving economic centres isn't as easy as it should be, a major obstacle to the region's growth and competitiveness.

Better passenger rail service could be a big part of the solution. The current service, offered by VIA Rail, is often delayed and not as fast as it could be. That's because passenger and freight trains share the same line. Freight trains are prioritized, which makes it difficult to run passenger trains with speed and reliability. It doesn't have to be this way.

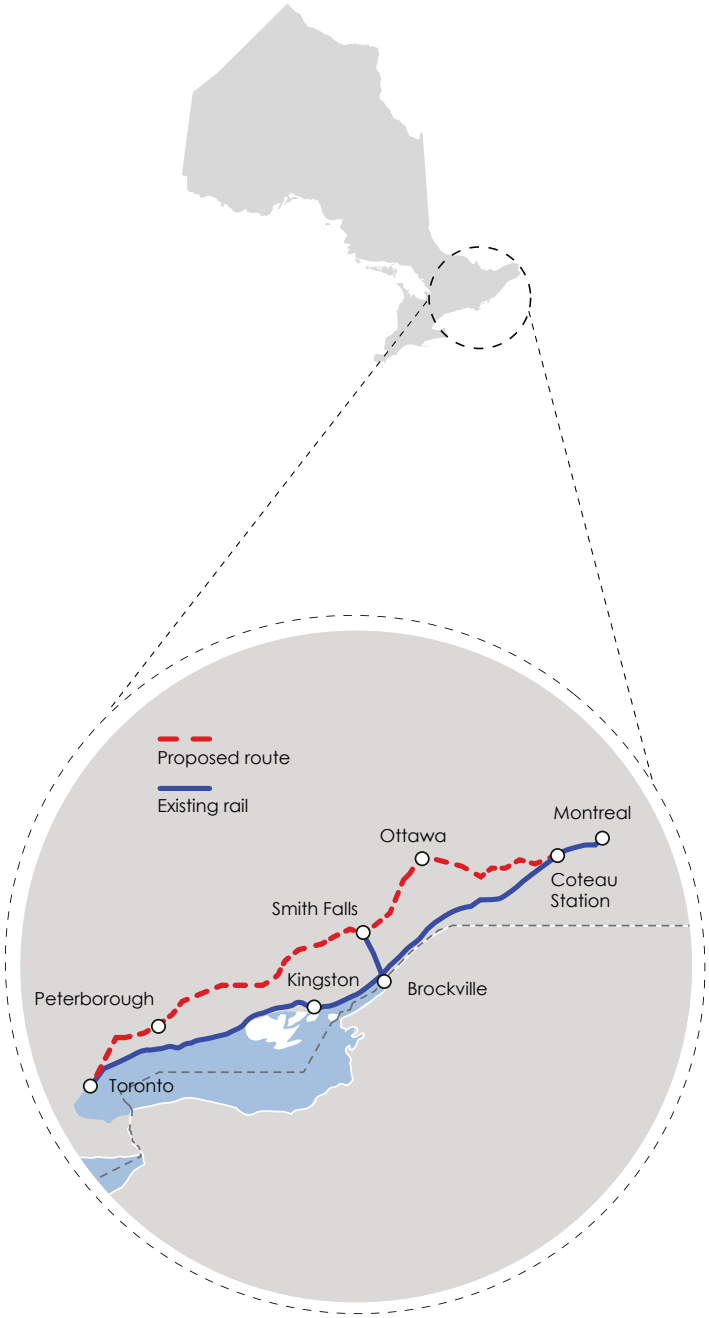
Fast, frequent and reliable passenger service, known as High-Frequency Rail to many, would address this operational challenge by creating new, dedicated tracks for passenger trains from Toronto to Coteau, Quebec, at which point they would then reconnect with track already owned by VIA Rail. These would by-pass the current shared tracks and improve regional connectivity by adding new stations in eastern Ontario, including Peterborough.

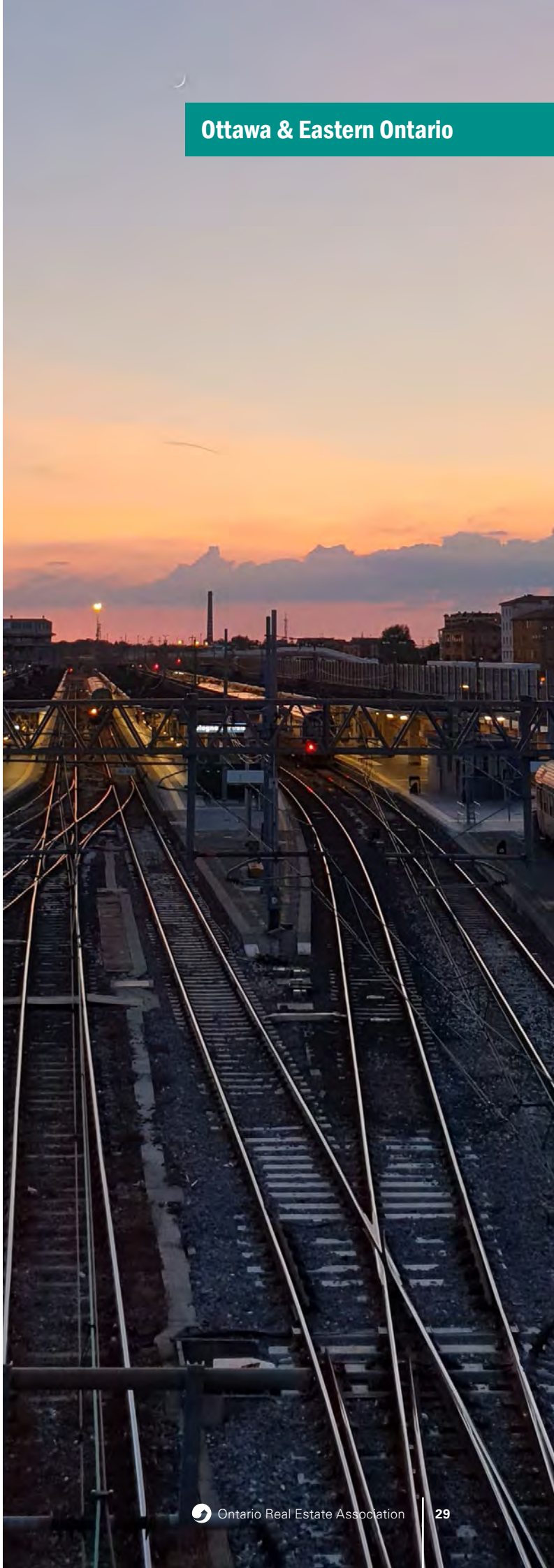
Dedicated tracks would allow VIA Rail to improve its train frequencies, speeds and schedules, and would increase on-time service, a measure of reliability, by over 35%. Travel times between Ottawa and Toronto would fall by more than an hour. That's a big jump. It would make the train more competitive with car travel, reducing congestion in and around Toronto, Montreal and Ottawa.

Fast, reliable passenger services will unlock the economic benefits of improved connectivity between three of Canada's most dynamic economic engines. The project would also extend the commutable distance to metropolitan areas,

which increases access to more affordable home ownership along the route. As the pandemic has shown, many families are reconsidering whether downtown city living is right for them, or whether they could live outside the city and commute when necessary. This project would increase those choices across eastern Ontario. The more choices people have, the more competitive Ontario becomes.

VIA Rail is an independent Crown corporation of the Government of Canada, but the Province can play a key role in enabling this project through streamlining approvals. Increased frequency, speed and reliability will transform how people see inter-city rail service in eastern Ontario.





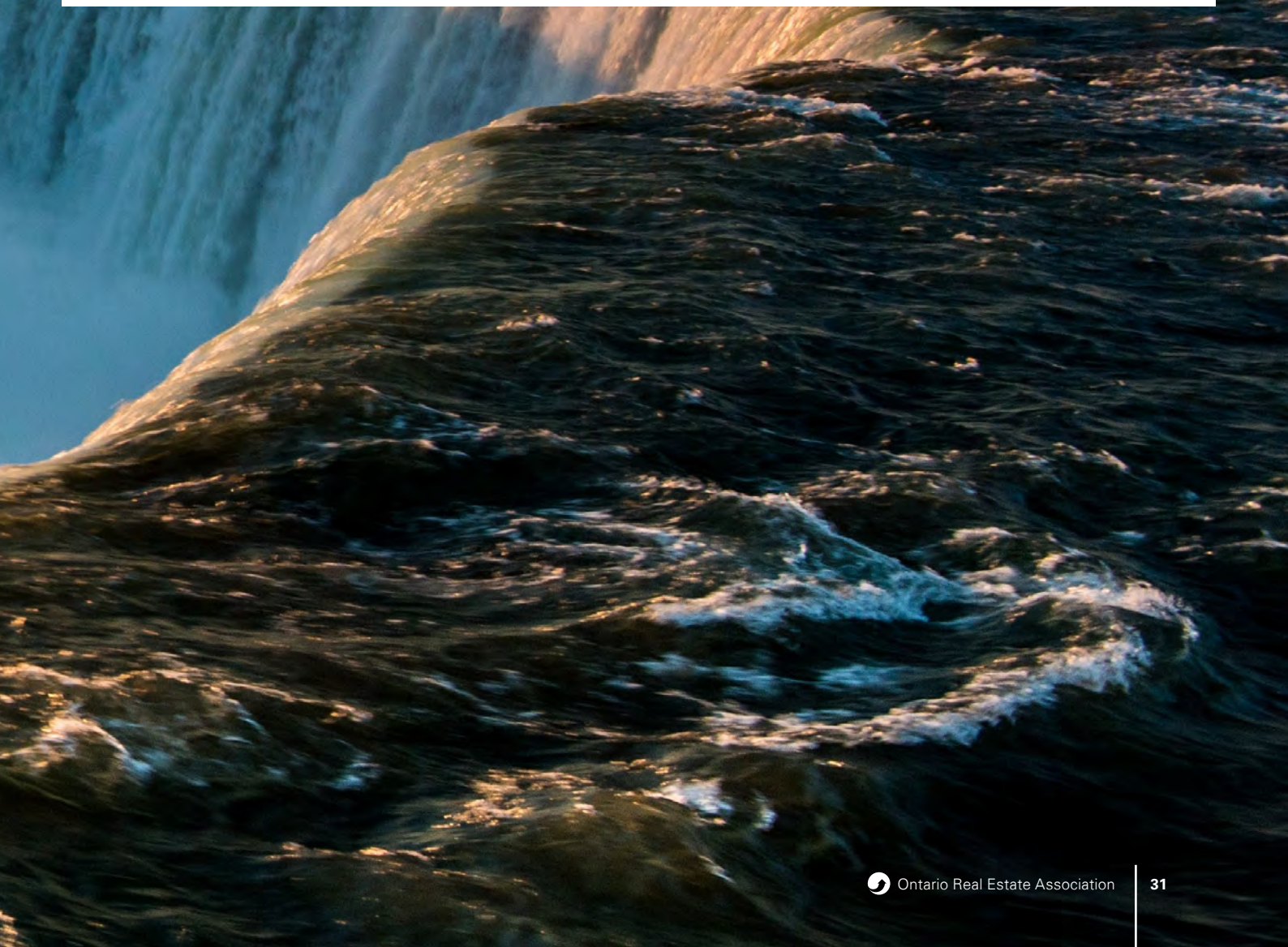
Southwestern Ontario

Ontario meets the United States in Southwestern Ontario.

Its major border crossings — Detroit, Buffalo, Niagara — ensure Ontario's goods and services can be delivered just-in-time to destinations across the continent. These trade gateways and the region's logistical, manufacturing and agricultural clusters are critical to the entire Province's competitiveness.

Work is underway to improve many of these critical trade routes. The long-delayed Gordie Howe International Bridge will produce 2,500 jobs during construction, and the Herb Gray Parkway in Windsor addressed Ontario's worst highway bottleneck outside the Greater Toronto Area. These projects help to increase the movement of goods and people. Regional transit is also under construction. An $800-million investment in the Region of Waterloo's rapid transit system now connects Kitchener and Waterloo with quick, reliable transit and soon will connect to the centre of Cambridge.

The pandemic exposed North America's dependency on precarious supply chains and critical points of entry. Increasingly businesses at home and abroad will buttress the resiliency of their supply chains with additional connections in Ontario and North America more broadly. The "Made in Canada" brand conveys quality, and Ontario will continue to grow, manufacture and invent great products. North America will rely even more on southwestern Ontario's agricultural sector. This will place more pressure on our highways. Enhancing southwestern Ontario's connectivity will enable us to remain competitive well into the twenty-first century.



07 A New Freeway and 21st Century Border Infrastructure for the Niagara Peninsula

Cost estimates

- A new highway would likely cost roughly $10 billion
- A new bridge would likely cost $750 million to $1.5 billion

Current status

- Conceptual

Rough timelines

- Long-term – project remains conceptual

Project details

- Highway: Approximately 100-kilometres in length
- Bridge: Approximately 1-kilometre in length

Economic benefits

- Addresses growing traffic congestion between St. Catharines and Hamilton by rerouting traffic travelling to the west
- Enables housing growth and other development on the escarpment, reducing pressure on nearby prime agricultural lands
- Between 2011 and 2041 the number of trips to, from and within Niagara Region is forecast to grow by nearly 50%, according to the Region's Transportation Master Plan
- Niagara frontier accounts for approximately 16% of all Canada-U.S. trade
- Improved connectivity between Niagara Region, southwestern Ontario and the Greater Toronto Area [12]

The Niagara Peninsula is a trade superhighway. On average, pre-pandemic, 1,600 trucks and 5,800 cars crossed the Peace Bridge each day between Fort Erie and Buffalo.

Congestion on the QEW, the Peninsula's only major roadway to and from the border, is a major strategic challenge. The highway is near capacity and expansion isn't tenable. Physical constraints, such as those imposed by the need to protect some of Canada's most valuable agricultural land, limit expansion. In addition, Niagara Region's total employment is forecast to swell by 30% over the next 25 years. A new route is needed and planning for it must resume today.

Our economic competitiveness depends on the efficient movement of vehicles **across** the border, but it also depends on getting cars and trucks **to** and **from** the border. Since the implementation of NAFTA in 1994, Canada-U.S. trade has increased dramatically. Niagara's

bridges and highways haven't kept up. We are living with pre-NAFTA infrastructure in a post-NAFTA world. Canada's reliance on international supply chains became even clearer during the pandemic. We must address our border infrastructure to support resilient supply chains.

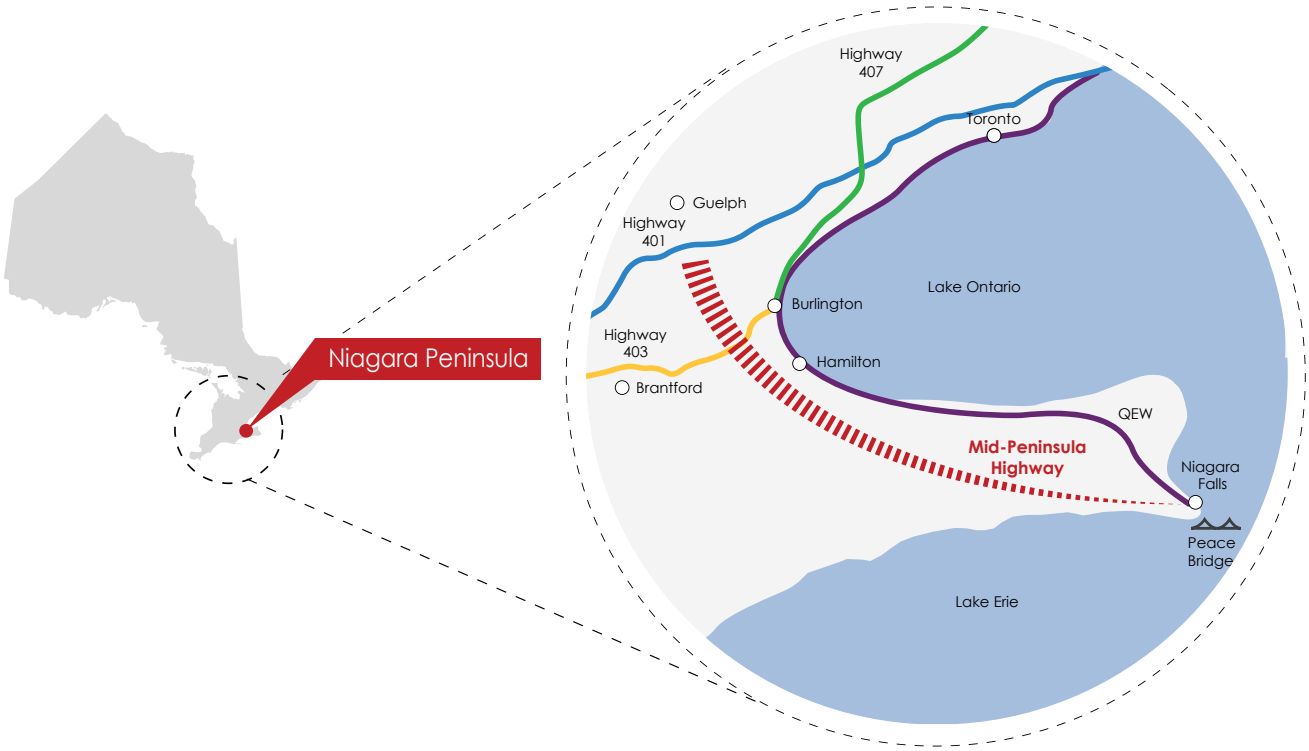
A new freeway, often referred to as the Mid-Peninsula Highway, would create a supplemental transportation corridor to the QEW between the western GTA and the U.S. border. At its core, this project is a 100-kilometre long route that could extend as far as Highway 403 near Hamilton, Highway 401 near Cambridge and Highway 407 near Burlington. Improved access to Hamilton International Airport would also bring system-wide benefits, providing direct passage between regions in the Southwestern Ontario Airport Network and for the provincial economy, improving regional connectivity. This will enable efficient movement of goods and people, but also will foster increased prosperity between Hamilton-Burlington and Kitchener-Waterloo as part of Canada's Innovation Corridor. It will connect to the Port of Hamilton and the Welland Canal, which provide multimodal transportation links to the St. Lawrence Seaway.

This project has been studied for more than two decades. It's gone by other names too, such as the Niagara Frontier International Gateway and the Mid-Peninsula Transportation Corridor.

Of course, a new trade corridor won't enhance Ontario's competitiveness without game-changing investments at the border. The Peace Bridge is the primary Canada-U.S. trade gateway on the Niagara Peninsula. It is also a severe bottleneck. Built to accommodate 20-tonne trucks and 40-tonne trolleys, the Peace Bridge was processing over 7,400 vehicles daily before borders were closed in early 2020. The result has been long wait times, increasing the costs of doing business.

A strong case can be made for twinning the Peace Bridge given the location's existing transportation, customs and security infrastructure. A second bridge would alleviate the border bottleneck for goods and people, as it can be anticipated that prior levels of congestion will have returned by the time this project is built. New border infrastructure will reduce trade barriers and facilitate the region's important tourist clusters.

This project is at an early formative stage. Ontario should take on the mantle of advocate-in-chief, a bullhorn that focuses federal and U.S. attention on the economic potential of a second Peace Bridge.



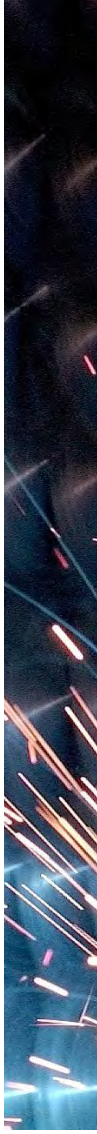
Northern Ontario

Northern Ontario's rich and abundant natural resources built our Province's economic foundations and will continue to be a source of growth and prosperity for generations.

The challenge, of course, is geography. Low population densities, bitter winter conditions and the Canadian Shield create substantial barriers to access and development. It's nothing we haven't overcome. The people who first built the railways and then the Trans-Canada Highway conquered the north's many rocks, lakes, ponds and bogs.

Northern Ontario continues to face the fundamental challenge of how to move people and resources to and from its vast, remote areas. Our Top 10 list includes a critical prerequisite transportation project that will provide year-round access.

08 A Strategic Transportation Link to Ontario's Ring of Fire



Cost estimates

- An all-season road could cost approximately $2 to $3 billion

Current status

- A road to Marten Falls First Nation is in the planning stages
- A full-scale transportation link to the Ring of Fire is still in the concept stage

Rough timelines

- Marten Falls Road: 3 to 10 years after the environmental assessment.
- Ring of Fire Road: Long-term – project remains conceptual

Project details

- Approximately 140 to 230 kilometres of road from Nakina to Marten Falls
- Approximately 350 kilometres of road from Aroland and Nakina to the Ring of Fire mineral deposits

Economic benefits

- Sharing of economic benefits and opportunities with numerous local First Nations communities in the region would be possible
- Reduced transportation costs for goods and services
- Mineral potential in the Ring of Fire is estimated to exceed $60 billion
- This could sustain 4,500 to 5,500 jobs (FTEs) per year
- Potentially $2 billion in governmental revenue (federal, provincial and municipal) generated by mining operations in the Ring of Fire
- A study by the Ontario Chamber of Commerce (2014) found that over the first three decades of its development, the Ring of Fire will generate more than $25 billion in economic activity, including province-wide benefits of:
  - $2.7 billion for the financial services sector
  - $1.2 billion for the wholesale and retail trade sectors
  - $600 million for the manufacturing sector
  - $500 million for the utilities sector[13]

Roughly 500-kilometres northeast of Thunder Bay, or about 1,000-kilometres north of Toronto, lies Canada's largest known source of untapped mineral wealth. Rich in chromite, copper, nickel, gold and zinc, Ontario's "Ring of Fire" stretches across an area larger than 5,000 square kilometres. Deposits of palladium, platinum and vanadium are also present. These materials are critical inputs to just about every facet of our modern lifestyle, from the stainless steel in our cars to the electronics of our smartphones.

This ecologically sensitive land traverses the traditional territory of several Indigenous communities and should only be accessed in true partnership, consultation and shared prosperity. A key challenge for all involved is the area's remoteness to existing transportation infrastructure.

Development of most of the minerals in the Ring of Fire will require year-round, land-based transportation links. Weather conditions will no doubt affect construction, and the surrounding landscape presents innumerable swamps, bogs and waterways. But this geography is not insurmountable. In the late-1950s, the midway section of the Trans-Canada Highway through Ontario, known as "The Gap", presented similar engineering challenges.

Accessing the Ring of Fire with long-distance road or rail infrastructure will define

Northern Ontario

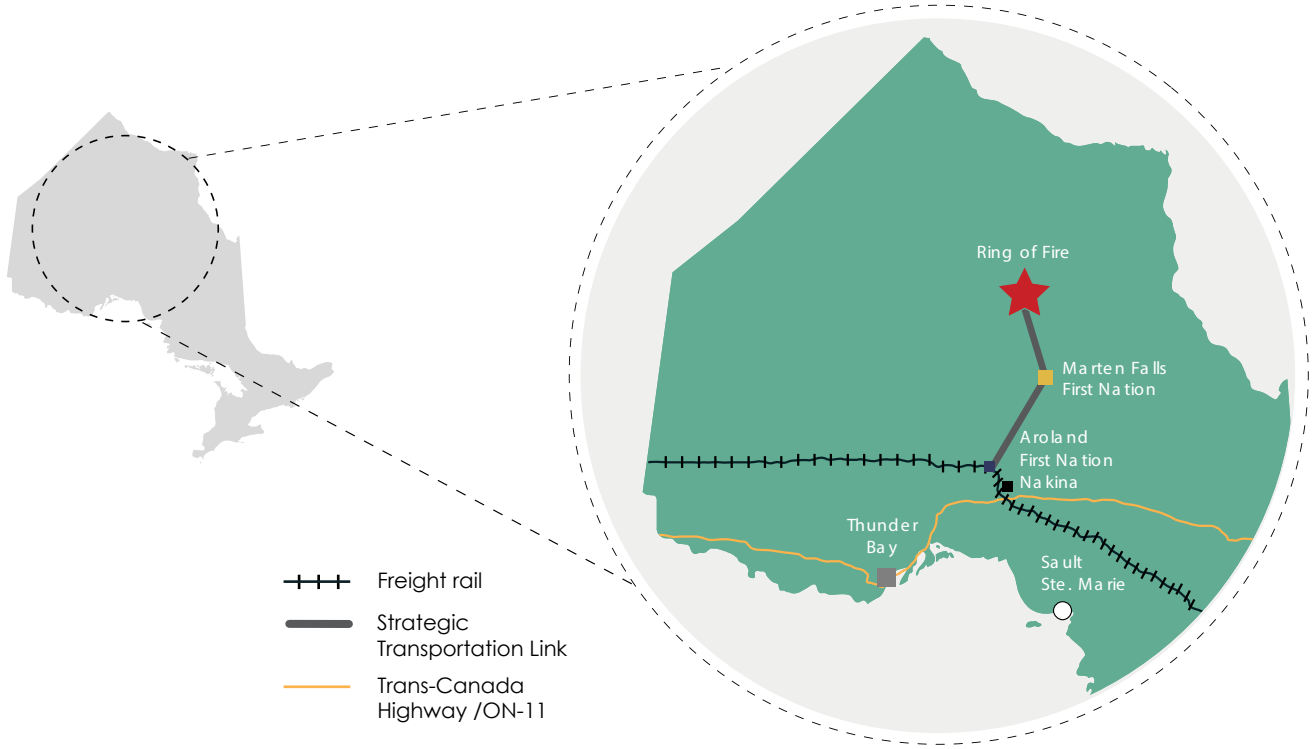
Ontario's relationship with its Far North for a century. It presents opportunities to work alongside Indigenous communities to ensure environmental impacts are considered, land rights are respected and economic benefits are realized equitably. Many First Nations in the Far North do not have year-round, land-based transportation access. Marten Falls First Nation, about halfway between the Ring of Fire region and the region's existing transportation links, only has winter road access, and the season is shrinking. This is unreliable and inhibits access to core necessities, such as fuel, medical supplies and healthy food.

Multiple routes have been proposed to connect the Ring of Fire to existing transportation corridors and to industrial markets where mineral processing could take place. A strong case can be made for the Province to lead the construction of a north-south road from a location near Aroland First Nation and the Township of Nakina to Marten Falls First Nation. Aroland and Nakina are situated northeast of Thunder Bay and are already near existing highway and rail infrastructure. This would be a practical first phase of a potential two-phase construction project to reach the Ring of Fire.

The project is in the early planning stages, and there are numerous factors to explore before construction begins. Some communities, such as the Webequie First Nation and Nibinamik First Nation represented by the Matawa Chiefs Council, have stated publicly they would support development so long as the Council was an integral party in all discussions. Other communities want to see more specific details and proposals. OREA supports this potential project on the assumption that the Province and private sector would proceed in partnership.

A north-south corridor would increase the likelihood that mineral processing takes place in Ontario, bringing more of the extracted resources to within closer proximity of Ontario's northern industrial clusters. It would also open up access to other natural resources in northern Ontario, such as forestry and wood products. Given the Ring of Fire's vast potential, numerous other benefits would reach every corner of Ontario.

The Province should continue to engage the Government of Canada, the Canada Infrastructure Bank and the private sector about the funding contributions necessary to make the project a reality. It should also continue to participate in meaningful consultations with Ontario's Indigenous communities and ensure that rigorous environmental and regional impact assessments are conducted.



Provincewide Opportunities

Kick-starting Ontario's economic recovery through twenty-first century innovations.

Ontario spans more than 1 million square miles. It comprises enormous forests, sprawling lakes and abundant farmland. This expansiveness has long been a strength. Today it is a barrier.

The pandemic exposed gaps and inequity in digital connectivity. The private sector requires density to make broadband infrastructure economic. While Ontario's largest population clusters enjoy access to reliable high-speed internet connections, too many entrepreneurs and knowledge workers in communities across southwestern, northern and eastern Ontario do not.

Climate change, too, reveals the drawbacks of Ontario's scale. We have made incredible, rapid progress in transitioning to emissions-free power generation, and Ontarians are choosing to purchase electric vehicles and energy-efficient appliances in record numbers. However long-distance trucking as well as our heating infrastructure still depend on fossil fuel sources with few alternatives.

Two ambitious, large-scale investments in infrastructure are necessary to enhance our economic competitiveness in the twenty-first century marketplace.

09 Broadband to address the Urban-Rural Digital Divide

Cost estimates

- Roughly $4 to $6 billion to connect approximately 700,000 households

Current status

Varies by initiative:

- SWIFT and EORN are well-established
- Provincial commitments are at the strategic development stage

Rough timelines

- Estimated at 5 to 7 years

Project details

- Ontario will partner with the private sector and not-for-project organizations to invest in broadband and cellular infrastructure, maximize existing programs and assets, and streamline regulations. These projects will expand broadband and cellular access in southwestern, eastern and northern Ontario.

Economic benefits

- Increasing household access to broadband by 10% increases economic growth by 0.9 to 1.5%, according to a study of 25 OECD economies
- Accessibility to public services like health care and education and provides the ability to work from anywhere.
- Expands business services and products offering to the global market
- Accessibility to shared economy services (e.g., ride-sharing programs)
- Broadband coverage, quality and affordability are critical inputs to growing a knowledge-based economy
- Traditional industries like farming, agri-food, construction and manufacturing are increasingly dependent on data and digital connectivity
- Connected communities are better positioned to minimize job losses and population decline and attract young talent, immigrants and skilled workers
- According to SWIFT average savings between $14,000 and $17,000 per year can be realized for a commuter telecommuting 3 days a week, enabled through enhanced broadband access
- Broadband deployment lowers the cost of doing business[14]

Our economy will be reshaped by global trends in digitization, the Internet of Things and next generation manufacturing. Across Ontario, tech-focused urban centres like Waterloo and Ottawa thrive while many rural areas struggle to adapt to plant closures, population loss and working from home. Wired and wireless broadband are essential twenty-first century economic infrastructure, and crucial to economic competitiveness. In many ways, broadband is to the twenty-first century what telephone lines were to the twentieth century.

Over the past year, the gaps that have persisted for far too long became crystal clear. Far too many people in a vast number of areas do not have connectivity. High-speed internet access in rural and remote communities is touch-and-go and it's impossible to work from home, attend virtual class, operate a small business or start a new one without a reliable internet connection. REALTORS® are consistently being asked about the quality of broadband access for new property listings and 18% of buyers have highlighted it as a primary consideration when choosing a location to buy a home, according to our 2021 OREA Home Buyer & Seller Profile survey.

Significant under-investment is the result of limited incentives for telecommunications service providers to make upfront, long-term investments. This is

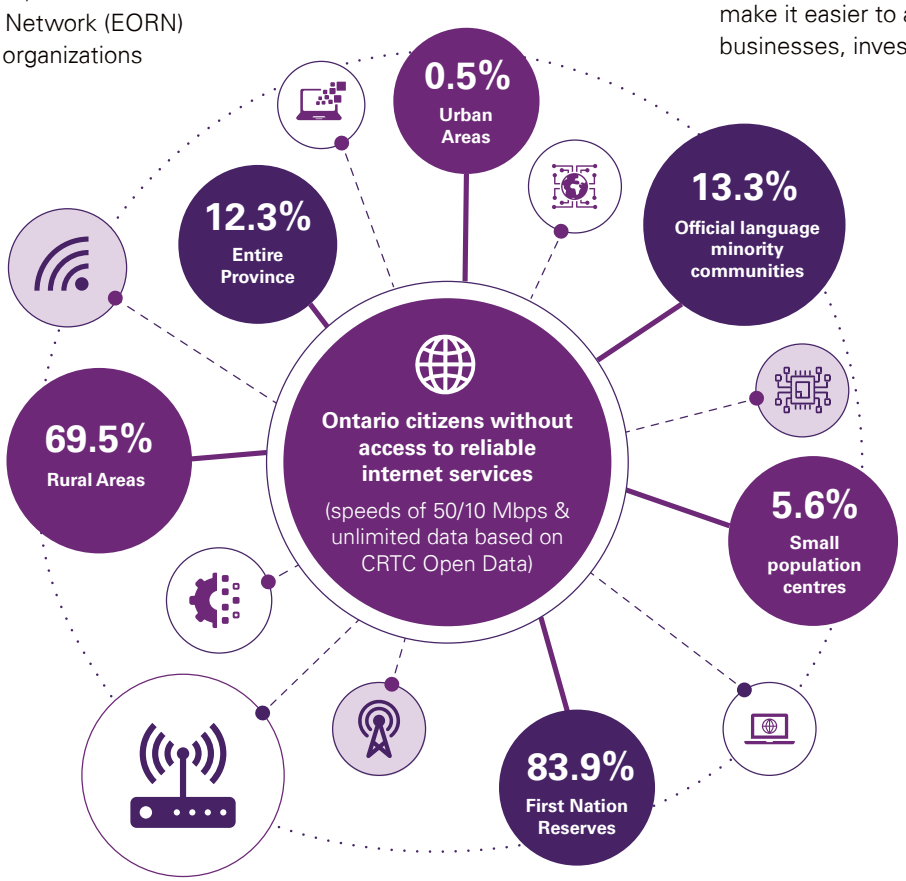
understandable. Low population densities, long distances between households and challenging physical terrain are costly in any competitive market. By some estimates, 700,000 households across Ontario are unserved or underserved. This means that economic opportunities for local entrepreneurs, vulnerable populations, small businesses and, most importantly, Ontario's youth are lost. In addition to the unfairness, the full potential of our human capital is held back. Lack of broadband inhibits grassroots economic activity and business attraction activities that lead to well-paying jobs and promising careers. Providing reliable broadband is paramount.

To help address this decade-old issue, the Province has supported not-for-profit organizations like the South Western Integrated Fibre Technology (SWIFT) and Eastern Ontario Regional Network (EORN) initiatives. These organizations help improve the economic case for rural broadband by facilitating the interaction between private enterprise and government resources. For instance, in some projects, providers compete to deliver services to consumers within an area, maximizing competition and value-for-money, as any infrastructure funded has been "open access" — meaning any telecom service provider can use it. This creates a flexible, competitive approach that benefits consumers and aids in the delivery of projects that connect remote, rural and northern communities. More innovative initiatives like these must be undertaken to get all Ontario households access to broadband.

In recent budgets, Queen's Park committed to a $4-billion investment in broadband over six years, starting in the 2019 fiscal year, to ensure that every region has access to reliable broadband services by 2025. This is an exciting and necessary infrastructure project, and about time. It will create jobs and develop opportunities for technologies to be leveraged in a variety of sectors.

The Province's unwavering commitment to this investment is critical. It will require equally important commitments by the Government of Canada and private sector. The Province should seek further commitments from the Universal Broadband Fund and the Canada Infrastructure Bank.

Enhancing the connectivity of rural and remote communities in the post-pandemic economic landscape will help level the economic playing field, increase productivity and make it easier to attract and retain businesses, investment and people.



10 Ontario's Clean Energy Potential

Cost estimates

- RNG facilities could cost in excess of $500 million if more than 10 facilities are constructed
- It is estimated that hydrogen could generate over $2 billion in spending per year in Ontario

Current status

- Conceptual

Rough timelines

- Mid-to-late 2020s and beyond

Project details

- Charging infrastructure will include development across major highways, on streets and at government buildings
- Greening our natural gas infrastructure will require:
  - Construction of facilities to capture biogas and purify to RNG
- Hydrogen infrastructure will support:
  - Industry (feedstock, fuel)
  - Transportation (fuel cell vehicles)
  - Electricity (storage, grid balancing)
  - Buildings & Communities (fuel)

Economic benefits

- Hydrogen could improve Ontario's trade balance by over $3 billion a year through displacing fossil fuel imports
- Hydrogen could create of over 20,000 jobs
- Electric vehicles could act as energy storage for Ontario's surplus energy supply, reducing the amount of surplus energy that is now sold to jurisdictions at a loss of $1 billion per year
- RNG creates local jobs and stimulates regional economic development where facilities are constructed[15]

Ontario is a proud leader in clean electricity. We began the twentieth century by harnessing Niagara Falls to produce low-cost green power and, early in the twenty-first century, became the first Province or State in North America to eliminate the use of coal for electricity generation. When it comes to environmental sustainability, while others have dragged their feet and made excuses, Ontario has punched above its weight.

There can be no doubt that this leadership — in combination with the corporate social responsibility of our companies and the individual choices of millions of Ontarians — buttressed our economic competitiveness in the past and is non-negotiable for our future success. Climate change is real and will affect Ontario's economy as significantly as COVID-19.

Ontario currently has a head start on other jurisdictions with 96% of our electricity produced from emissions-free sources. Unfortunately, power generation isn't the only source of greenhouse gas (GHG) emissions in Ontario. Ninety-seven percent of emissions now come from other sources. And Ontario is at risk of falling behind when it comes to reducing emissions from these other sources, which include transportation & logistics, agriculture, heating, and the manufacturing of construction materials.

Low-emissions electricity will be an important strategy for reducing emissions from light duty vehicles. Our auto manufacturers, with support from the Province and Government of Canada, are making significant investments to support manufacturing of electric vehicles. However, as of mid-2019, there were only 980 public charging stations and only 2,700 electric vehicle public charging ports across Ontario. In order to achieve wide use of light duty electric vehicles, Ontario has all of the technology available but needs to champion a project to roll out the required charging infrastructure for light vehicle electrification across major highways, government buildings, rest stops and streets. This is the precursor to shifting

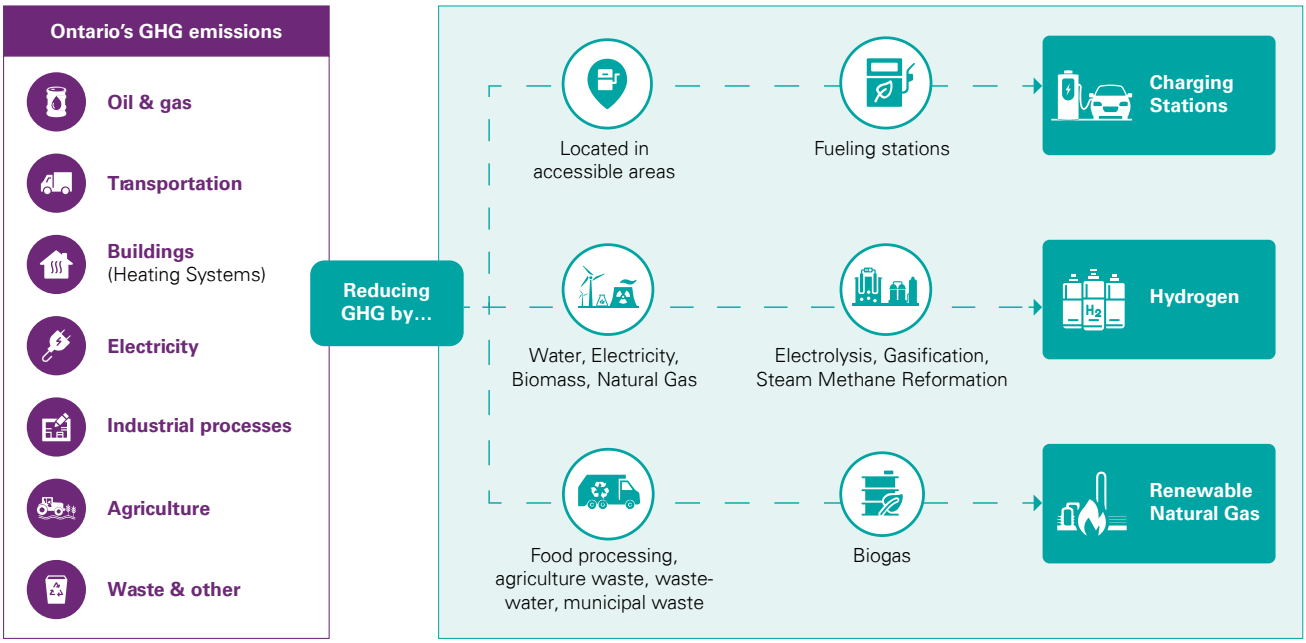
demand, reducing emissions and driving economic development.

While providing opportunities for electric vehicle charging is an ideal solution for personal vehicles, this option doesn't overcome the hurdle of reducing emissions from the remainder of the economy. Heavy transportation, industrial processes and heating systems represent high-emitting sources. Reducing emissions in these areas is not going to come easily but will require transformational change. Solutions like renewable natural gas and hydrogen, or a combination of the two, are leading candidates for mitigating these other emissions. It's also a perfect fit for Ontario's innovation economy, which boasts some of the world's leading scientists, engineers and energy professionals.

Renewable natural gas is a potentially cost-effective energy alternative that can support peak energy demands on Ontario's coldest days, when the electricity system would have difficulty replacing current natural gas consumption. Biogas collected from landfills, livestock operations and wastewater treatment plants and that might otherwise be released into the atmosphere can be collected and purified into renewable natural gas. Producers may be able to use the renewable natural gas as their own energy source or sell it to the natural gas distribution grid. Either way, this strategy can help businesses build their economic competitiveness across the Province, while creating more local jobs, optimizing Ontario's existing pipeline infrastructure and helping to reduce emissions in those toughest industries.

Hydrogen could also play an important role in decarbonizing those end-uses that are not suitable for electrification. Hydrogen applications can provide wide benefits such as little to no greenhouse gas emissions, creation of jobs through research and development and manufacturing, attraction of investment and providing export opportunities to help improve the Province's trade balance. While the future of wide-spread hydrogen use may be decades away, there are steps to be taken today to ease the transition. Numerous pilot projects have been proposed by the private sector, including one by Enbridge Gas to blend hydrogen into the natural gas pipeline. Strategies are also being explored by various levels of government. OREA supports the in-depth exploration of these opportunities. This will ensure that Ontario is prepared with infrastructure projects that can support initial processing, future fueling and distribution facilities, and the testing of potential new end-use applications.

Ontario has an opportunity to partner with the private sector, the Government of Canada and other Provinces and States to support its energy transition through broad applications that provide sustainable energy solutions. This will generate high-paying jobs, foster innovation and accelerate the industry. Clean energy solutions have a lot of potential for wide applications within Ontario. Support for clean energy solutions from the Province will help strengthen Ontario's role as an innovative leader.



Conclusion

Delivering these ten projects will be difficult, but their corresponding benefits will be transformational.

The pace of change across the global economy continues to accelerate. Yet our decisions on infrastructure projects still too often take decades. If progress isn't made each year against all of the infrastructure focus areas in this list, then these projects will steadily become more expensive and logistically challenging. This will put Ontario at a competitive disadvantage.

The most successful infrastructure initiatives combine public-sector leadership with private-sector ingenuity. In some cases, this will require the Province to lead the end-to-end development of a project. In other cases, it will require Queen's Park to advocate for a project — to the Government of Canada, to the United States, or to investors. In still other cases the provincial government will simply act as a facilitator, ensuring that red tape doesn't stand in the way. Risk takers in the private sector will continue to place big bets on megaprojects, particularly in sectors like energy, telecommunications and power generation.

Of course, Ontario's infrastructure needs go beyond the ten projects identified in this paper. The bigger our economy grows, the larger its infrastructure needs become. In an era of fiscal restraint and pandemic recovery, it's even more important than usual to prioritize projects that will yield the most bang for the buck. To be an effective partner, government must provide opportunities for scale, improve clarity around the project pipeline, and be transparent about how projects are selected. Maintaining existing infrastructure is critically important, too.

We invite Ontarians to take our list as a starting point, and to engage in dialogue on how to use infrastructure investment to enhance Ontario's future economic prosperity. Our infrastructure build has too often lagged our infrastructure need. OREA recognizes that any investment decisions should be based on the best available evidence and strongest value propositions. We encourage the development of robust business cases for these and other projects, recognizing also that some projects will require a long-term vision and benefits may not always be immediate or quantifiable with precision.

Notes

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2. C.D. Howe Institute, "Cars, Congestion and Costs: A New Approach to Evaluating Government Infrastructure Investment", 2013, available at: https://www.cdhowe.org/sites/default/files/attachments/research_papers/mixed/Commentary_385_0.pdf

3. Canada Energy Regulator, "Provincial and Territorial Energy Profiles – Ontario, 2017," available at: https://www.cer-rec.gc.ca/en/data-analysis/energy-markets/provincial-territorial-energy-profiles/provincial-territorial-energy-profiles-ontario.html#:~:text=GHG%20Emissions,-Ontario's%20GHG%20emissions&text=The%20largest%20emitting%20sectors%20in,9.3%20MT%20CO2e.

4. **Main sources used (A Pearson Area Transit Hub):**
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