Shovel Ready

^e Shovel Worthy

CANADAWEST FOUNDATION The Path to a National Trade Infrastructure Plan for the Next Generation of Economic Growth

Canada West Foundation

cwf.ca

The Canada West Foundation focuses on the policies that shape the West, and by extension, Canada. Through our evidence-based research and commentary, we provide practical solutions to tough public policy challenges facing the West, and Canada as a whole, at home and on the global stage.

The opinions expressed in this document are those of the authors and do not necessarily reflect those of the Board of Directors, donors or advisers of the Canada West Foundation.

The Canada West Foundation relies on the support of donors and corporate supporters who recognize the importance of independent, non-partisan public policy to provide evidence-based solutions.

Your financial support helps us to continue to offer our publications free online and to ensure the widest possible distribution of our work, which is critical to make a difference on public policy.

John Law has been a Sr. Fellow at Canada West since 2016. He is a recognized leader in Canada's transportation and infrastructure sector having played a significant role in the development of national and interprovincial transportation policy. During his career he served a number of senior positions in industry and government including President of the Transportation Association of Canada (TAC) and in 2010 received a lifetime achievement award from the association. He was Chair of the Canadian Council of Deputy Ministers responsible for Transportation and Infrastructure, founder and Chief Executive Officer of the Saskatchewan's Global Transportation Hub, and Deputy Minister of the Saskatchewan Ministry of Highways and Infrastructure. His public service career also includes staff advisory positions to Treasury Board and Cabinet with the Government of Canada, Manitoba and Saskatchewan. Mr. Law has written on the importance of Canadian trade infrastructure with organizations including the Canada West Foundation, the Canadian Chamber of Commerce and the Canadian Construction Association. He is currently president of Lawmark International which provides business development, logistics and regulatory support services.

Carlo Dade is Director of the Trade and Investment Centre at the Canada West Foundation.

Acknowledgments

We thank the following organizations for their support and contributions to this report:

- Business Council of Canada
- Canadian Chamber of Commerce
- Canadian Construction Association
- Western Canada Roadbuilders & Heavy Construction Association, partner

To obtain the rights to copy this report, please contact us: **Canada West Foundation** 110 – 134 11 Avenue SE, Calgary, Alberta T2G 0X5 Phone: 403-264-9535 Email: cwf@cwf.ca

© Canada West Foundation | ISBN 978-1-989323-85-4 | May 2022 Canada West Foundation is a registered Canadian charitable organization incorporated under federal charter. (#11882 8698 RR 0001)

CONTENTS

From Shovel Ready to Shovel Worthy

02

Executive summary & introduction

05

The Opportunity Trade as a source of economic growth

- 06 Importance of trade for Canada
- 06 Post-COVID economic growth
- 07 The return of Global Middle Class (GMC) growth post-COVID

09

The Problem The decline in confidence in Canada's trade infrastructure

10 Evidence of worries about Canada's trade infrastructure

17

The Solution A sustainable plan for Canada's Trade Corridor Network

- 17 The approach
- 19 The seven building blocks to a national plan

34

Conclusion

From Shovel Ready to Shovel Worthy

Executive summary & introduction

With recent headlines of empty store shelves, flooding in B.C. and truck blockades at the border, it would be understandable if Canadians viewed Canada's current supply chain vulnerabilities as a phenomenon of the last 24 months. But that interpretation would seriously misjudge the origins and nature of the problems with Canada's trade corridor infrastructure. Today's issues with the country's trade network of roads, bridges, air and sea ports have been in the making for more than a decade. As a consequence, the problems are more deeply rooted and threaten to imperil recovery from the pandemic and, even more importantly, Canada's longer-term economic growth. But the problem is still fixable.

For more than a decade, international surveys have shown confidence in the reliability and competitiveness of Canada's trade infrastructure has been in decline at home and abroad. This has occurred despite significant investments by the private sector and current levels of trade infrastructure spending by governments. While increased funding dedicated specifically to trade corridor infrastructure is required, it alone is not the answer. Rushing to impose quick-fix solutions to issues dominating the news will not restore confidence in Canada's trade infrastructure.

Previous short-term approaches that defaulted to shovel ready as a driver of funding for trade infrastructure in Canada have contributed to concerns with the national supply chain because the term infers inadequate consideration of longer-term benefits that prioritize lasting improvements to trade corridor competitiveness. While in practise some shovel ready projects can be shovel worthy, here the term shovel ready is a metaphor for doing project selection without a long-term plan and prioritizing something simply because it is ready instead of worthy. This relegates to a secondary consideration whether investments are those of highest priority, able to produce maximum return on investment, represent the best long-term value, and can increase supply chain competitiveness. These examples of shovel worthy criteria are, by comparison, the kind upon which to build a long-term, evergreen national plan.



The path to returning to the top ten of global trade infrastructure rankings and restoring the confidence of foreign customers requires that, instead of "shovel ready," Canada institutionalize an ongoing intelligence-based national plan for its trade corridor infrastructure.

For a country that relies on moving goods to and from foreign customers for two-thirds of its income, reliance on shovel ready is a serious problem that cannot be solved by short-term fixes or ad-hoc consultations. Domestic users of Canada's trade infrastructure and foreign customers alike have continued to insist that this is not enough. The country needs to follow the successful path taken by its competitors and lay the foundations, structures and institutions to replace uncoordinated shovel ready decisions with a shovel worthy national plan as the default framework to guide infrastructure decision making.

Especially in times of crisis like the recent COVID-19 pandemic, the country needs a go-to list to make intelligent, productive choices to invest instead of spend public funds. Beyond economic considerations, a shovel worthy national infrastructure plan is also the means to seriously address the challenges posed by climate change and prevent or mitigate harms to marginalized communities. Incorporating strategic climate and social criteria on a serious, thoughtful apriori basis can help ensure that long-term, dramatically more cost-effective responses to the challenges of a changing environment and protecting vulnerable communities are pre-established as a guide to infrastructure decisions. Likewise, a shovel worthy approach better assures that equity concerns and national priorities are given life that extends past the political cycle. A shovel worthy plan will not solve all that ails trade infrastructure in Canada, but ensuring that the full range of issues and impacts of these investments are considered in a thoughtful, serious and consistent manner will significantly improve our prospects and build public confidence that money is invested instead of spent.

The path to returning to the top ten of global trade infrastructure rankings and restoring the confidence of foreign customers requires that, instead of "shovel ready," *Canada institutionalize an ongoing intelligence-based national plan for its trade corridor infrastructure*. Drawing on the best features of already well-established national plans of competitor countries together with Canada's own program successes, like the previous Asia-Pacific Gateway and Corridor Initiative and Transport Canada's current Regional Transportation Assessments, offer Canada a shortcut back to trade infrastructure excellence.

Seven recommendations follow as core components from which to choose the initial building blocks for Canada's first national plan for trade corridor infrastructure.

Initial building blocks for Canada's first national plan for trade corridor infrastructure – Seven recommendations

01	Define Canada's national trade corridor network to put all levels of government and industry on the same page.	
02	Bring the private sector to the table as an ongoing contributor of sophisticated supply chain expertise and front-line operational experience to complement the best features of public-sector policy.	
03	Apply criteria of national significance to guide the planning process and decision-making.	
04	Develop an "evergreen," decades-long pipeline of national infrastructure projects.	
05	Undertake regular assessments of infrastructure projects in relation to established criteria.	
06	Begin a new forward-looking approach to the collection of data and use of forecasting and modelling tools.	
07	Coordinate the communications of domestic infrastructure working groups and aggressively share progress on the above recommendations with industry and foreign customers.	

While the objectives in this report are specific, the exact means and mechanisms to achieve them have been deliberately afforded flexibility to allow customization and refinement by the key stakeholders. However, this approach does imply an important convenor role for the federal government to facilitate coordination efforts among key stakeholders. Cooperation and meaningful participation must receive priority to avoid exacerbating table fatigue or perceptions of pre-ordained outcomes that discourage engagement.

While process will be important, moving quickly and decisively is even more critical.

As important as trade infrastructure was for the well-being of Canadians pre-COVID, it has become more so as the country looks to emerge from the supply chain shadow of the pandemic. There has arguably never been a time in recent memory where key stakeholders in industry and government are better aligned around the need for collective action. The rapid emergence of pent-up global demand, projections for a near-term return to growth driven by an expanding global middle class in Asia and a potential new commodity supercycle are the best and surest opportunities to fund economic recovery in Canada. But the path to realize these opportunities literally and figuratively runs through the country's supply chain trade infrastructure. There are currently several opportunities to move solutions forward including follow up work begun at the 2022 meeting of the Council of Ministers of Transportation, the National Supply Chain task force and, most promisingly, work underway on the National Infrastructure Assessment.

Nothing less than a national plan for trade infrastructure is required to realize Canada's economic future. The work to do this must begin now.

The Opportunity

Trade as a source of economic growth

Trade corridor infrastructure matters more for Canada than for many other countries because of the relative importance of trade for Canada's economy, the inherent challenge to overcome distance to markets and a relatively small domestic market by population. That trade is the foundation for the country's quality of life is well documented.¹

Table 1

Trade as % of GDP (2019) – Canada vs select countries

Country	% of GDP (2019)
Canada	65.43
United Kingdom*	63.40
OECD average	56.22
Australia	45.71
China	35.84
Japan	34.76
United States	26.29

Source: World Bank DataBank. *UK data is pre-BREXIT

See for example, John Law, 'The Infrastructure That Matters Most' (Ottawa, On: Canadian Chamber of Commerce, 6 July 2016), https://cwf.ca/research/publications/the-infrastructure-that-matters-most/. Carlo Dade and John Law, 'Building on Advantage: Improving Canada's Trade Infrastructure', 24 November 2014, https://cwf.ca/research/publications/building-on-advantage-improving-canadas-trade-infrastructure/.

Importance of trade for Canada

Currently in Canada trade accounts for close to two-thirds of GDP, unlike the U.S. where trade accounts for roughly one-quarter of GDP and Australia where it accounts for only 45 per cent.² A simple regression analysis of the past 50 years of trade and GDP data (1971-2020), shows that trade is a statistically significant driver of Canada's GDP. Specifically, a one dollar increase in exports drives just under three dollars in GDP. When looking at the relationship between exports and GDP growth over this period, a one percentage point increase in export growth is associated with a 0.62 percentage point increase in GDP growth. This past performance has held during the COVID pandemic. Figure 1 shows the impact of trade on the economy during the pandemic.

Figure 1



Trade and GDP percentage change, seasonally adjusted, monthly (millions of CAD\$)

 Feb-19
 May-19
 Aug-19
 Nov-19
 Feb-20
 May-20
 Aug-20
 Nov-20
 Feb-21
 May-21
 Aug-21
 Dec-21

 Source: CWF calculations from Statistics Canada. Table 12-10-0121-01
 Control
 Contr

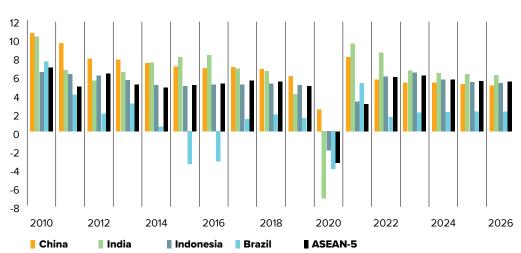
Post-COVID economic growth

Key Canadian export markets, like the emerging economies of Asia as a group, experienced an overall decline in GDP of only -0.8 per cent. Some countries in Asia important to Canada, such as China and Vietnam, were among the few countries to experience GDP growth. Our largest trading partner, the U.S., experienced a GDP decline of only -3.4 per cent.

² Table 36-10-0104-01 Gross Domestic Product, Expenditure-Based, Canada, Quarterly (x 1,000,000) (Statistics Canada., 30 November 2021), https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3610010401.

As the world continues to emerge from the pandemic, data from the International Monetary Fund (IMF) on projected GDP growth to 2026 show robust short-term bounce back to growth in emerging markets that are Canadian targets for new trade agreements. Strong projected post-COVID growth in these markets plus the potential for new trade agreements with some of these countries makes an even stronger case than before to assure that Canada's trade infrastructure is up to the task.

Figure 2



GDP growth projections for Canada's FTA negotiating target countries and China (%)

Source: International Monetary Fund, World Economic Outlook Database, October 2021

The return of Global Middle Class (GMC) growth post-COVID

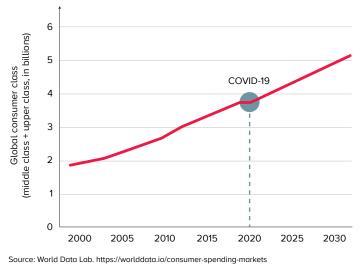
Part of Canada's longer-term export-led growth strategy has centered specifically on the rise of the Global Middle Class (GMC)³, which had seen uninterrupted growth going back to the 1990s. The COVID pandemic shock has been the first reversal of this uninterrupted growth, but the interruption is slight and will be brief. These consumers demand and can now afford what Canada produces. Earlier estimates that this population would grow from 1.8 billion today to five billion by 2030 are still on track. To put these numbers into perspective, the recent rise in demand has been driven by an increase in the Global Middle Class of 700 million new consumers over the past 10 years. In the near future, that growth will be the in the order of three billion, or four times the past decade's growth. By 2030, the world population is expected to grow by two billion, but the size of the Global Middle Class will grow by three billion. In China only 10 million people (two per cent) dropped below the GMC level out of its total GMC population of over 500 million, while in India almost one-third of its estimated 99 million GMC population fell back into poverty.⁴

³ Advisory Council on Economic Growth, 'Unleashing the Growth Potential of Key Sectors' (Government of Canada, 6 February 2017), https://www.budget.gc.ca/aceg-ccce/pdf/key-sectors-secteurs-cles-eng.pdf.

⁴ Rakesh Kochhar, 'In the Pandemic, India's Middle Class Shrinks and Poverty Spreads While China Sees Smaller Changes', *Pew Research Center* (blog), accessed 10 September 2021, https://www.pewresearch.org/fact-tank/2021/03/18/in-the-pandemic-indias-middle-class-shrinks-andpoverty-spreads-while-china-sees-smaller-changes/.

Latin America experienced an eight per cent drop in its GMC population. The Middle East had similar numbers. With economic growth projected to return to many of these countries, the prospects for GMC growth getting back on track are strong and with it demand for the full range of Canadian exports including products crucial to meeting rising demands for energy while reducing greenhouse gas emissions. With the exception of China, where losses to its GMC population were minor, recovery in the rest of the world's middle-class populations will vary from fairly quickly to up to five years. This means that Canada still has time to get its trade infrastructure up to the challenge of meeting demand from renewed growth in GMC markets.

Figure 3



COVID and Global Middle Class growth

A new post-COVID commodity supercycle

As economic recovery began in parts of the globe in 2021, reports of a new global supercycle⁵ in commodities increased.⁶ An emerging consensus suggests that the new post-COVID supercycle will see longer-term demand in commodities where investment in production was cut after the 2008-09 financial crisis. The post-COVID recovery is bringing this structural supply shortage into sharper relief. This means that the 2021 rise in commodity prices is the result of more than the pent-up demand created by supply bottlenecks during COVID.⁷

Enabling a global low carbon future

There is also a sizable role for Canada in providing the world with goods to transition toward a low-carbon economy. The opportunity is immense and ranges across the bulk commodity export spectrum to include items like critical minerals, manufactured goods, and low-carbon aluminum, steel, lumber and a host of other items. But again, these opportunities can only be realized if prospective investors and buyers believe that Canada can reliably get these items to foreign markets.

⁵ Generally defined as a decades-long stretch when commodities trade above their long-term price

³ William Watts, 'Chatter about a "commodity supercycle" is dying down – here's why the debate isn't over', MarketWatch, 11 September 2021, sec. Markets, https://www.marketwatch.com/story/chatter-about-a-commodity-supercycle-is-dying-down-heres-why-the-debate-isnt-over-11631121991.

Jeff Currie, 'Why a new commodity supercycle is upon us', *The Financial Times*, 27 October 2021, https://financialpost.com/financial-times/why-a-new-commodity-supercycle-is-upon-us.

The Problem

The decline in confidence in Canada's trade infrastructure

Capitalizing on the opportunity created by growth in emerging markets, the rise of the GMC and a potential new commodity supercycle relies upon the ability to competitively move Canadian products to markets. Unfortunately, confidence in the reliability of Canada's trade corridor infrastructure to deliver the quality products that it produces has been trending in the wrong direction at a time when it is needed most. Global rankings of the quality of Canada's trade infrastructure by both Canadian businesses and international customers have been in decline for more than 10 years. Peter Hall, Export Development Canada's former chief economist characterizes this as "a lost decade for investment in export capacity – equipment, facilities and public infrastructure necessary to produce and transport goods globally."⁸ As a result, says Hall, "what we are seeing right now is a lack of ability to grow because of that missing investment."⁹

Without addressing the deeper, longer-standing issues identified in this report, the rush to quickly rebuild might bring some immediate relief but will continue to produce sub-optimal longer-term results and weak returns on investment that will not improve competitiveness. The country can do better. Doing so requires first understanding the problem.

⁸ David Parkinson, 'Under-investment is the weak link in supply chains, EDC's retiring economist Peter Hall says', *Globe and Mail*, February 7, 2022, https://www.theglobeandmail.com/business/commentary/article-edcs-retiring-economist-peter-hall-under-investment-is-the-weak-link/.

⁹ Ibid.

Evidence of worries about Canada's trade infrastructure

This report references four indicators which reflect a common concern with declining confidence in the reliability and competitiveness of Canada's trade infrastructure.

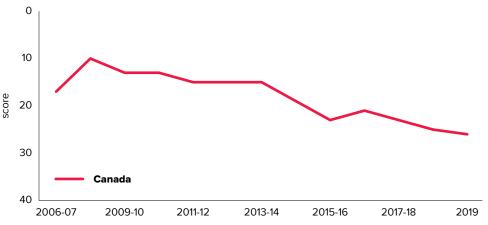
- The World Economic Forum (WEF) world infrastructure rankings measure the perceptions of domestic users of their experience with the full range of infrastructure assets in their national infrastructure systems. In 2019 the WEF calculated and reported a separate score for transport infrastructure.¹⁰
- World Bank while the WEF surveys domestic users, the World Bank surveys foreign customers from a country's top five trading partners to compliment the WEF survey by providing a more complete picture that includes perceptions of Canadian trade infrastructure from key trade markets.
- WESTAC's Compass Report provides an annual survey of Canada's supply chain priorities on the basis of input from industry executives and stakeholders.¹¹
- The European Court of Auditors compares approaches of the European Union with other countries such as the United States, Australia, Switzerland and Canada specifically on how they plan and deliver trade infrastructure and major passenger transportation projects.

Each of these sources offer different perspectives that combine to paint the picture of Canada's decline.

The decline in WEF rankings shown in Figure 4 below are corroborated by Western Transportation Advisory Council (WESTAC) surveys of its membership which contains perhaps as much industry supply chain horsepower as any in Canada. For the fifth consecutive year, aging supply chain infrastructure and insufficient capacity were identified by 90 per cent of WESTAC executives as their top transportation challenge with 80 per cent recommending that a new comprehensive strategy be developed for Canada's trade corridors. In short, domestic businesses express concern that declining confidence in Canadian trade infrastructure affects their ability to retain existing customers and capture new ones in international markets.

Figure 4





Source: World Economic Forum Competitiveness Ranking, various years

¹⁰ See 2019 World Economic Forum, World Competitiveness Report.

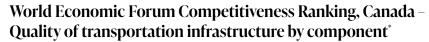
^{&#}x27;Westac Compass Report 2020 – Leader Survey Highlights' (Western Transportation Advisory Council (WESTAC)), https://www.westac.com/compass/report/2020/#page=1.

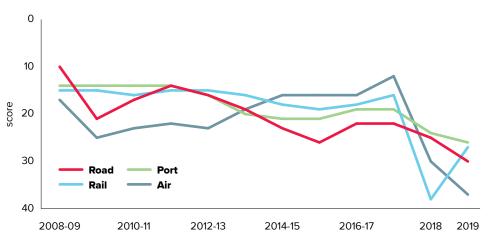


Domestic businesses express concern that declining confidence in Canadian trade infrastructure affects their ability to retain existing customers and capture new ones in international markets.

The detailed WEF ranking shows the decline of Canadian confidence in the road and rail systems shown in Figure 5 is especially concerning because of the proportion of Canada's exports that rely upon these two dominant modes. Transport Canada notes that over 50 per cent of exports move to market by road or rail. This figure jumps to 65 per cent when applied to road and rail transportation to the U.S. which accounts for two-thirds of Canadian trade.

Figure 5





Source: World Economic Forum Competitiveness Ranking, various years

* Rail rankings are largely reflective of passenger rail. Freight rail in Canada is owned by the private sector benefits from significant private investments.

In 2009, the WEF sub-rankings in the infrastructure category related to transportation showed Canadian confidence in their trade infrastructure was among the top 10 globally. A decade later this confidence had dropped to 26th for overall infrastructure and worse, 32nd for quality of transportation infrastructure. Where previous rankings put Canada as a peer with Hong Kong, the U.S. and U.A.E., with the new more specific reclassification by the WEF it now shares company with countries like Hungary and Azerbaijan.

World Economic Forum Quality of overall infrastructure

Switzerland1SingaporeSingapore2NetherlandsGermany3Hong Kong SARFrance4SwitzerlandFinland5JapanAustria6Korea, Rep.Denmark7SpainHong Kong SAR8GermanyUnited States9FranceCanada10AustriaUnited Arab Emirates11United KingdomSweden12United KingdomSweden13United StatesLuxembourg14BelgiumBelgium15DenmarkJapan16Taiwan, ChinaNetherlands17LuxembourgKorea, Rep.18ItalyMalaysia19SwedenBarbados20Czech RepublicCyprus21PortugalTaiwan, China22FinlandPortugal23IsraelUnited Kingdom24QatarAustralia25PolandNamibia26CanadaSpain27HungaryNorway28Oman	2008-2009	Rank	2019
Germany3Hong Kong SARFrance4SwitzerlandFinland5JapanAustria6Korea, Rep.Denmark7SpainHong Kong SAR8GermanyUnited States9FranceCanada10AustriaUnited Arab Emirates11United KingdomSweden12United Arab EmiratesIceland13United StatesLuxembourg14BelgiumBelgium15DenmarkJapan16Taiwan, ChinaNetherlands17LuxembourgKorea, Rep.18ItalyMalaysia19SwedenBarbados20Czech RepublicCyprus21PortugalTaiwan, China22FinlandPortugal23IsraelUnited Kingdom24QatarAustralia25PolandNamibia26CanadaSpain27Hungary	Switzerland	1	Singapore
France4SwitzerlandFinland5JapanAustria6Korea, Rep.Denmark7SpainHong Kong SAR8GermanyUnited States9FranceCanada10AustriaUnited Arab Emirates11United KingdomSweden12United Arab EmiratesIceland13United StatesLuxembourg14BelgiumBelgium15DenmarkJapan16Taiwan, ChinaNetherlands17LuxembourgKorea, Rep.18ItalyMalaysia19SwedenBarbados20Czech RepublicCyprus21PortugalTaiwan, China22FinlandPortugal23IsraelUnited Kingdom24QatarAustralia25PolandNamibia26CanadaSpain27Hungary	Singapore	2	Netherlands
Finland5JapanAustria6Korea, Rep.Denmark7SpainHong Kong SAR8GermanyUnited States9FranceCanada10AustriaUnited Arab Emirates11United KingdomSweden12United Arab EmiratesIceland13United StatesLuxembourg14BelgiumBelgium15DenmarkJapan16Taiwan, ChinaNetherlands17LuxembourgKorea, Rep.18ItalyMalaysia19SwedenBarbados20Czech RepublicCyprus21PortugalTaiwan, China22FinlandPortugal23IsraelUnited Kingdom24QatarAustralia25PolandNamibia26CanadaSpain27Hungary	Germany	3	Hong Kong SAR
Austria6Korea, Rep.Denmark7SpainHong Kong SAR8GermanyUnited States9FranceCanada10AustriaUnited Arab Emirates11United KingdomSweden12United Arab EmiratesIceland13United StatesLuxembourg14BelgiumBelgium15DenmarkJapan16Taiwan, ChinaNetherlands17LuxembourgKorea, Rep.18ItalyMalaysia19SwedenBarbados20Czech RepublicCyprus21PortugalTaiwan, China22FinlandPortugal23IsraelUnited Kingdom24QatarAustralia25PolandNamibia26CanadaSpain27Hungary	France	4	Switzerland
Denmark7SpainHong Kong SAR8GermanyUnited States9FranceCanada10AustriaUnited Arab Emirates11United KingdomSweden12United Arab EmiratesIceland13United StatesLuxembourg14BelgiumBelgium15DenmarkJapan16Taiwan, ChinaNetherlands17LuxembourgKorea, Rep.18ItalyMalaysia19SwedenBarbados20Czech RepublicCyprus21PortugalTaiwan, China22FinlandPortugal23IsraelUnited Kingdom24QatarAustralia25PolandNamibia26CanadaSpain27Hungary	Finland	5	Japan
Hong Kong SAR8GermanyUnited States9FranceCanada10AustriaUnited Arab Emirates11United KingdomSweden12United Arab EmiratesIceland13United StatesLuxembourg14BelgiumBelgium15DenmarkJapan16Taiwan, ChinaNetherlands17LuxembourgKorea, Rep.18ItalyMalaysia19SwedenBarbados20Czech RepublicCyprus21PortugalTaiwan, China22FinlandPortugal23IsraelUnited Kingdom24QatarAustralia25PolandNamibia26CanadaSpain27Hungary	Austria	6	Korea, Rep.
United States9FranceCanada10AustriaUnited Arab Emirates11United KingdomSweden12United Arab EmiratesIceland13United StatesLuxembourg14BelgiumBelgium15DenmarkJapan16Taiwan, ChinaNetherlands17LuxembourgKorea, Rep.18ItalyMalaysia19SwedenBarbados20Czech RepublicCyprus21PortugalTaiwan, China22FinlandPortugal23IsraelUnited Kingdom24QatarAustralia25PolandNamibia26CanadaSpain27Hungary	Denmark	7	Spain
Canada10AustriaUnited Arab Emirates11United KingdomSweden12United Arab EmiratesIceland13United StatesLuxembourg14BelgiumBelgium15DenmarkJapan16Taiwan, ChinaNetherlands17LuxembourgKorea, Rep.18ItalyMalaysia19SwedenBarbados20Czech RepublicCyprus21PortugalTaiwan, China22FinlandPortugal23IsraelUnited Kingdom24QatarAustralia25PolandNamibia26CanadaSpain27Hungary	Hong Kong SAR	8	Germany
United Arab Emirates11United KingdomSweden12United Arab EmiratesIceland13United StatesLuxembourg14BelgiumBelgium15DenmarkJapan16Taiwan, ChinaNetherlands17LuxembourgKorea, Rep.18ItalyMalaysia19SwedenBarbados20Czech RepublicCyprus21PortugalTaiwan, China22FinlandPortugal23IsraelUnited Kingdom24QatarAustralia25PolandNamibia26CanadaSpain27Hungary	United States	9	France
Sweden12United Arab EmiratesIceland13United StatesLuxembourg14BelgiumBelgium15DenmarkJapan16Taiwan, ChinaNetherlands17LuxembourgKorea, Rep.18ItalyMalaysia19SwedenBarbados20Czech RepublicCyprus21PortugalTaiwan, China22FinlandPortugal23IsraelUnited Kingdom24QatarAustralia25PolandNamibia26CanadaSpain27Hungary	Canada	10	Austria
IcelandI2Endet Add EndetIcelandI3United StatesLuxembourgI4BelgiumBelgiumI5DenmarkJapanI6Taiwan, ChinaNetherlandsI7LuxembourgKorea, Rep.I8ItalyMalaysiaI9SwedenBarbados20Czech RepublicCyprus21PortugalTaiwan, China22FinlandPortugal23IsraelUnited Kingdom24QatarAustralia25PolandNamibia26CanadaSpain27Hungary	United Arab Emirates	11	United Kingdom
Luxembourg14BelgiumBelgium15DenmarkJapan16Taiwan, ChinaNetherlands17LuxembourgKorea, Rep.18ItalyMalaysia19SwedenBarbados20Czech RepublicCyprus21PortugalTaiwan, China22FinlandPortugal23IsraelUnited Kingdom24QatarAustralia25PolandNamibia26CanadaSpain27Hungary	Sweden	12	United Arab Emirates
Belgium15DenmarkJapan16Taiwan, ChinaNetherlands17LuxembourgKorea, Rep.18ItalyMalaysia19SwedenBarbados20Czech RepublicCyprus21PortugalTaiwan, China22FinlandPortugal23IsraelUnited Kingdom24QatarAustralia25PolandNamibia26CanadaSpain27Hungary	Iceland	13	United States
Japan16Taiwan, ChinaJapan16Taiwan, ChinaNetherlands17LuxembourgKorea, Rep.18ItalyMalaysia19SwedenBarbados20Czech RepublicCyprus21PortugalTaiwan, China22FinlandPortugal23IsraelUnited Kingdom24QatarAustralia25PolandNamibia26CanadaSpain27Hungary	Luxembourg	14	Belgium
Netherlands17LuxembourgKorea, Rep.18ItalyMalaysia19SwedenBarbados20Czech RepublicCyprus21PortugalTaiwan, China22FinlandPortugal23IsraelUnited Kingdom24QatarAustralia25PolandNamibia26CanadaSpain27Hungary	Belgium	15	Denmark
Korea, Rep.18ItalyMalaysia19SwedenBarbados20Czech RepublicCyprus21PortugalTaiwan, China22FinlandPortugal23IsraelUnited Kingdom24QatarAustralia25PolandNamibia26CanadaSpain27Hungary	Japan	16	Taiwan, China
Malaysia19SwedenBarbados20Czech RepublicCyprus21PortugalTaiwan, China22FinlandPortugal23IsraelUnited Kingdom24QatarAustralia25PolandNamibia26CanadaSpain27Hungary	Netherlands	17	Luxembourg
Barbados20Czech RepublicCyprus21PortugalTaiwan, China22FinlandPortugal23IsraelUnited Kingdom24QatarAustralia25PolandNamibia26CanadaSpain27Hungary	Korea, Rep.	18	Italy
Cyprus21PortugalTaiwan, China22FinlandPortugal23IsraelUnited Kingdom24QatarAustralia25PolandNamibia26CanadaSpain27Hungary	Malaysia	19	Sweden
Taiwan, China22FinlandPortugal23IsraelUnited Kingdom24QatarAustralia25PolandNamibia26CanadaSpain27Hungary	Barbados	20	Czech Republic
Portugal23IsraelUnited Kingdom24QatarAustralia25PolandNamibia26CanadaSpain27Hungary	Cyprus	21	Portugal
United Kingdom24QatarAustralia25PolandNamibia26CanadaSpain27Hungary	Taiwan, China	22	Finland
Australia25PolandNamibia26CanadaSpain27Hungary	Portugal	23	Israel
Namibia26CanadaSpain27Hungary	United Kingdom	24	Qatar
Spain 27 Hungary	Australia	25	Poland
	Namibia	26	Canada
Norway 28 Oman	Spain	27	Hungary
	Norway	28	Oman

Table 3

World Economic Forum Quality of transportation infrastructure

Rank	2019
1	Singapore
2	Netherlands
3	Hong Kong SAR
4	Japan
5	South Korea
6	Switzerland
7	Germany
8	United Arab Emirates
9	Spain
10	France
11	United Kingdom
12	United States
13	Taiwan
14	Austria
15	Denmark
16	Belgium
17	Italy
18	Oman
19	Qatar
20	Luxembourg
21	Portugal
22	Czech Republic
23	Sweden
24	China
25	Poland
26	Israel
27	Finland
28	India
29	Malaysia
30	Hungary
31	Azerbaijan
32	Canada
33	Turkey
34	Saudi Arabia
35	Bahrain
36	Croatia

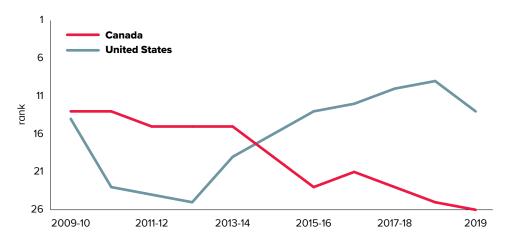
Source: World Economic Forum Competitiveness Ranking, various years

Comparing Canada to select competitors provides even sharper evidence of relative decline.

The U.S. recently dropped two places to 13th in its ranking and the Biden administration responded with a US\$1.2 trillion national program that has been hard to miss.¹² In Canada, with its much greater dependence on trade, a drop of 16 places seems not to have set off alarms bells nor elicited a response. The issue is that at the same time Canada's world rankings are declining, other countries including the U.S., are improving the competitiveness of their trade corridor infrastructure.

Over the past decade, the U.S. has moved to reduce red tape and bureaucratic delays to major infrastructure projects, a problem that afflicts Canada but is not specifically addressed in this report. Research and advocacy by business organizations, including the U.S. Chamber of Commerce, have resulted in legislation to reduce delays and red tape.

Figure 6



World Economic Forum, Canada vs U.S. Overall quality of infrastructure scores, 2006-2019

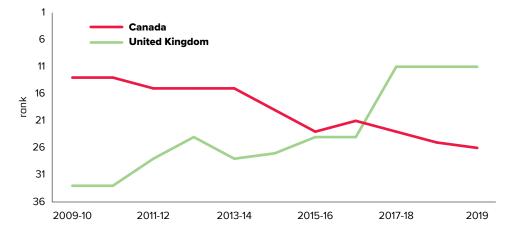
Source: World Economic Fourm, Global Competitiveness Report, various years Y axis adjusted to highlight difference between selection countries

While the Americans have the ability to simply throw enough money at their trade infrastructure problems to see improvement, this will not be the case in Canada. Neither was it the case in the U.K. where the U.K.'s Infrastructure Commission led the development of national infrastructure priorities and adopted long-term planning as reflected in the report's recommendations.

¹² Secretary of Transportation Pete Buttigieg has specifically referenced the fall in rankings and the drop has also been cited by Congressman Dan Beyer (D-Va.) among others. Dan Beyer, 'Infrastructure and Its Impact on the U.S. Economy' (U.S. Congress, Joint Economic Committee, 11 May 2021), https://www.jec.senate.gov/public/_cache/files/e0640a90-9b52-45c2-999cd83a406075c2/infrastructure-and-the-economy---final.pdf.

Figure 7

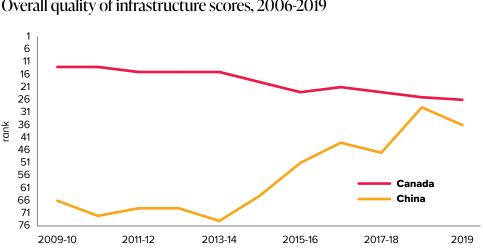
World Economic Forum, Canada vs UK Overall quality of infrastructure scores, 2006-2019



Source: World Economic Fourm, Global Competitiveness Report, various years Y axis adjusted to highlight difference between selection countries

China is a different example. It is a country that combines the ability to invest massive amounts with, thanks to central planning, long-term planning and criteria of national significance. Given worries in Canada about being able to compete with China, the data in Figure 8 provide an obvious warning.

Figure 8

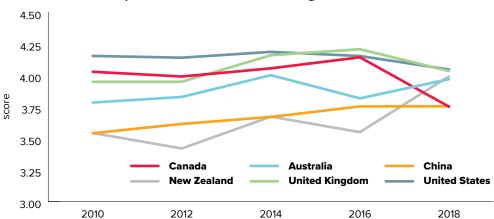


World Economic Forum, Canada vs China Overall quality of infrastructure scores, 2006-2019

Source: World Economic Fourm, Global Competitiveness Report, various years Y axis adjusted to highlight difference between selection countries Worries at home are shared by Canada's customers abroad. The World Bank logistics performance index (WB LPI) measures top trading partners' perceptions of components of infrastructure and systems to move goods. Comparing Canada's performance in the WB LPI to its two largest trading partners and a handful of countries that have adopted long-term trade infrastructure planning mechanisms is revealing.

Countries like the United Kingdom and Australia, which have well-regarded national infrastructure plans in place, fared comparatively well in world rankings. Australia moved past Canada while China closed the gap thanks in part to Canada's downward trajectory. The United States saw modest declines in confidence but has, as mentioned, put in place Biden's trillion-dollar infrastructure plan. This move has the potential to reverse America's small decline and create further competitiveness challenges for Canada.

Figure 9



World Bank Logistics Performance Index, Perception of Foreign Trade Partners of Quality of Canada's Trade and Logistics Infrastructure

Source: World Bank, Logistics Performance Index, https://lpi.worldbank.org/ Y-axis scale adjusted to highlight differences among selected countries

If the indicators from the WEF, World Bank and WESTAC were not enough, a 2021 analysis by the European Court of Auditors identified Canada as the only country in their review where major transportation projects are not planned as part of a national long-term strategy. In its assessment, which focused on planning and delivery of trade corridor and passenger transportation infrastructure projects, Canada stands out as the least rigorous and most ad hoc of all.

The report notes that there is little effective coordination which leads to projects with lower returns on investment being selected. Canada also has no discernible system for monitoring performance to evaluate projects after implementation so that it can make improvements for future investments. The relatively haphazard way that infrastructure is planned in Canada is described as "a big risk to future prosperity."

The conclusion of this analysis is that Canada risks spending money on projects that shouldn't be at the top of the list based on economic, social or environmental benefits that they will bring.

In an environment where global trade corridor reliability and competitiveness are ramping up, it should come as no surprise that Canada's highest international ranking corresponds to a period in which Canada had an established proactive national policy framework and supporting national programs which targeted improvements to its trade corridors and supply chains.¹³

¹³ A review of the history of Canada's trade corridor competitiveness can be found in Appendix A.

"A big risk to future prosperity"

A 2021 analysis by the European Court of Auditors identified Canada as the only country in their review where major transportation projects are not planned as part of a national long-term strategy. In its assessment, which focused on planning and delivery of trade corridor and passenger transportation infrastructure projects, Canada stands out as the least rigorous and most ad hoc of all.

The report notes that there is little effective coordination which leads to projects with lower returns on investment being selected. Canada also has no discernible system for monitoring performance to evaluate projects after implementation so that it can make improvements for future investments. The relatively haphazard way that infrastructure is planned in Canada is described as "a big risk to future prosperity."

The Solution

A sustainable plan for Canada's Trade Corridor Network

The approach

This report recommends a dual approach by combining the best features of well-established national plans of competitor countries with domestic lessons from Canadian successes like the previous Asia-Pacific Gateway and Corridor Initiative and Transport Canada's more recent Regional Transportation Assessments. This dual approach offers Canada a shortcut back to being recognized for world-class trade infrastructure excellence.

Build on past Canadian success

Although more than a decade has passed since Canada had its highest performance, placing 10th in international infrastructure rankings, industry and government stakeholders continue to reference the approach that led that track record of success. This success was created largely through strategic national transportation infrastructure improvement programs that explicitly focused on systemic improvements to Canada's trade corridor network. For example, in recent outreach interviews that WESTAC conducted with its members, national programs like the Asia-Pacific Gateway and Corridor Initiative (APGCI) and associated federal leadership were strongly recommended as repeatable strategies. More recent home-grown advances like Transport Canada's Regional Transportation Assessments offer important new intelligence that can help guide infrastructure investments.

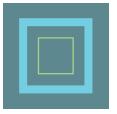


Lessons from a Canadian Success Story The Asia-Pacific Gateway and Corridor Initiative

A decade after its conclusion, the Asia-Pacific Gateway and Corridor Initiative (APGCI) continues to receive accolades from industry and governments as perhaps Canada's best example of national trade infrastructure program excellence. The program earned international recognition and is still openly acknowledged by industry, including organizations like the Gateway Transportation Collaboration Forum as a source to inform current projects that have been successful in attracting federal National Trade Corridor funding in the B.C. Lower Mainland. Together with similarly-focused national infrastructure programs like the rebuild of the National Highway System and the Gateways and Border Crossings Program that operated concurrently, the period of maximum activity, political attention, and spending of the APGCI, coincided with Canada's highest global infrastructure rankings.

The relevance of APGCI to the development of a national trade corridor plan for Canada can be found in some of its key features. These included:

- An explicit program priority which targeted investments on improvements to the efficiency and capacity of Canada's economically significant trade corridors and their connection to Canada's key export markets. This simple but critical organizing principle created a strategic focus for project investments.
- Collaboration program criteria encouraged partnerships across the continuum of private company stakeholders, different levels of government and non-profit organizations.
 The federal government played a lead role in defining the national economic interest with merit- based criteria which rewarded increased economic returns, consensus building amongst provincial and industry stakeholders and frequently involved Transport Canada assuming the role of convenor in the negotiation of multi-stakeholder projects. This model recognized the inherent interconnectedness of supply chain projects.
- Projects had to demonstrate that benefits were network-based, offering broader benefits that contributed improvements to a more efficient transportation network, for example, across jurisdictional boundaries rather than focusing exclusively on immediate or local benefits of the project itself.
- Financing the program provided incentives to leverage incremental public and private investment from multiple partners/stakeholders. This return on investment approach was a targeted objective that was measured by the Auditor General in his annual review of project effectiveness.
- International promotion program funding was earmarked to include the promotion
 of gateway improvements in overseas markets to highlight Canada's efforts to improve
 transportation fluidity and operating conditions for trade partners. This included
 leadership from federal ministers such as then Transport Minister Jean Lapierre and
 Minister of Trade David Emerson leading overseas missions comprised of both industry
 and government stakeholders.



Lessons from Canada's successful trade corridor history and best practice learnings from competitor countries have the potential to make manageable the daunting task of establishing a new national framework to enable Canada's economic future.

Adopt already established international best practice learnings from other jurisdictions to create a long-term infrastructure plan

Other countries now have well-established programs that have been successful during Canada's decline in infrastructure rankings. Central to the success of other jurisdictions has been the formalization of national infrastructure plans such as that of Infrastructure Australia or the United Kingdom's National Infrastructure Commission. Both these countries recognize that trade infrastructure planning and decision-making benefit by operating on 15-25-year timelines and not four-to-five-year electoral cycles and short-term political imperatives. The longer-term timeframe optimizes the returns on infrastructure investments by allowing for the coordination of related projects which helps to achieve end-to-end network improvements.

Taken together, lessons from Canada's successful trade corridor history and best practice learnings from competitor countries have the potential to make manageable the daunting task of establishing a new national framework to enable Canada's economic future.

The seven building blocks to a national plan

The core components which are recommended as the building blocks for a national plan are spelled out on the following pages. It is important to recognize, however, that the best national plans of competitor jurisdictions have all evolved and adapted over time and Canada's should too. Even if only some of the seven core components are ready, the priority must be to launch the national plan as soon as possible, understanding that refinements and updates will come later as part of ongoing improvements.

Similarly, while the objectives are specific the exact means and mechanisms to achieve them are flexible. There is a need for an ongoing public-private body to guide data collection and to inform project selection. How that body should be constituted, and its terms of reference, may require political decisions involving negotiation and compromise amongst stakeholders. While the government can convene, host and facilitate, the decisions on specifics should be guided by a process of compromise not just consultation. Table-fatigue, a weariness among both public and private sector stakeholders on consultations that do not act on input or produce pre-ordained outcomes, is the wrong process. Fortunately, Canada can build upon successful examples of this being done in other jurisdictions.

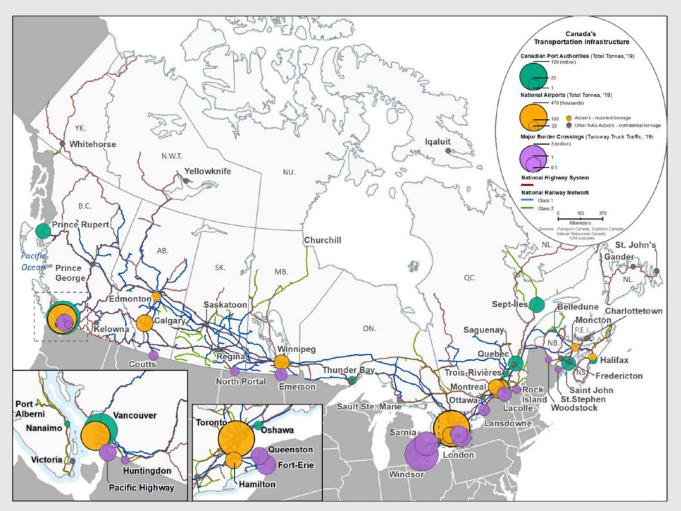
Define Canada's National Trade Corridor Network Get everyone on the same page

A common starting point suggested by international best practices is to assemble a current picture of what constitutes the country's national network of multimodal transportation infrastructure and share it broadly. This assures that all stakeholders and participants involved in trade infrastructure discussions begin with the same understanding of what is being discussed. This network overview is typically composed of an up-to-date inventory of the key corridors, transportation assets including capacity, capability, and infrastructure projects that form the national supply chain. Establishing a shared frame of reference for these interconnected transportation components helps facilitate coordination among different levels of government as well as the private sector, each of whom own or manage different logistics assets along the corridors of the network. The resulting one network perspective provides a foundation on which to inform industry supply chain movements, better manage congestion and identify high-priority infrastructure investments to address bottlenecks, redundancy, and capacity.

In addition to existing traditional trade corridor infrastructure like roads, bridges, railways and airports, this kind of network assessment also anticipates long-term future requirements. For example, in the new U.S. infrastructure plan, Transportation Secretary Pete Buttigieg announced alternative fuel corridor designations as part of the Biden administration's plan to modernize electric vehicle charging station infrastructure. These Federal Highway Administration alternative fuel corridors recognize highway segments that have infrastructure or plans for infrastructure that support alternative fuel options. To date, this next generation of corridors encompass roads in 27 states along 134 interstates and 125 highways and state roads totalling 166,000 miles of the U.S. National Highway system. Hydrogen fuelling stations for commercial vehicles could also be included.

The benefits of presenting a network view of the inherent interconnectedness of trade corridors is not a new concept for Canada. The shared network intelligence that it enables was a key feature of Canada's earlier successful national trade infrastructure programs like the Asia-Pacific Gateway & Corridor Initiative (APGCI). Federal officials described as a major learning how laying out their intentions for APGCI corridor improvements elicited unsolicited incremental intelligence and investment interest from industry stakeholders. This, in turn, improved project quality, leveraged financial participation and enabled project collaboration well beyond what would have been possible by the government on its own.

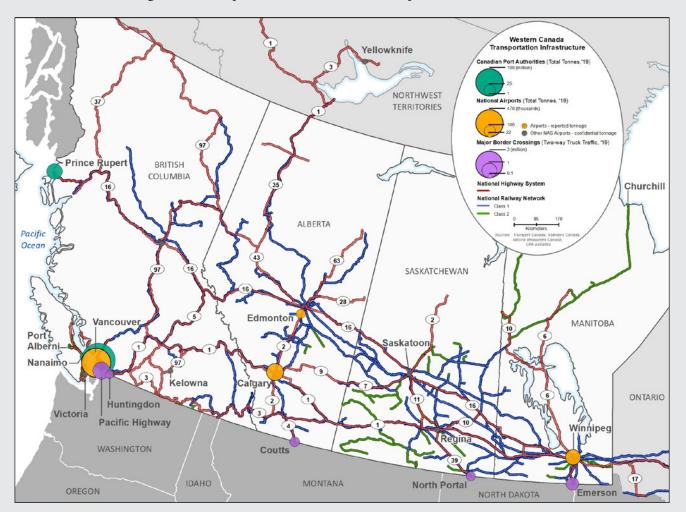
The even better news for Canada is the very recent work on the country's strategic economic corridors initiated by Transport Canada. Since 2019 the department's Trade Policy Branch has been building Regional Transportation Assessments (RTA's) for each of the Maritimes, Ontario, Québec and Western Canada, with one for the northern territories currently being finalized. Each RTA includes an overview of that region's trade-critical transportation infrastructure, their key international export markets, prospective transportation bottlenecks and an initial inventory of potential infrastructure solutions to address them. Taken together, Transport Canada's RTA work, which includes consultations with the provinces, provides an excellent national picture of Canada's network of national highway and railway networks, national airports, port authorities and major border crossings.



Canada Regional Transportation Assessment Map

Source: Transport Canada

Transport Canada's Trade Policy Branch has developed regional transportation assessments (RTA's) which provide an important starting point for shared network intelligence about trade-critical transportation infrastructure and the exports that they support in each region of the country. These maps are representative of the detail and information that is available.



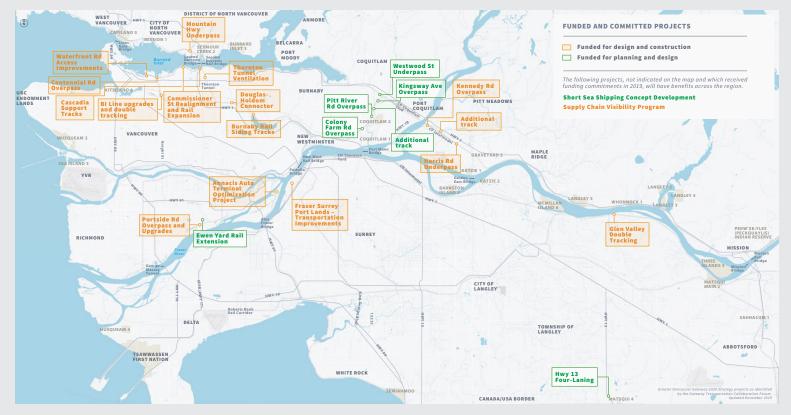
Western Canada Regional Transportation Assessment Map

Source: Transport Canada

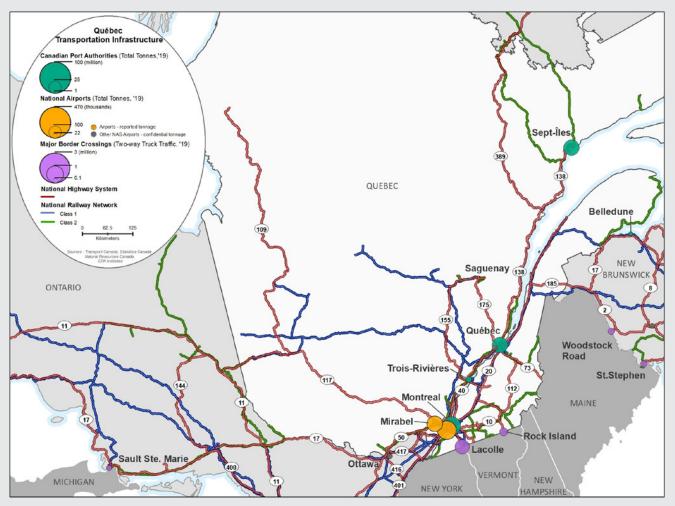
The RTA for Western Canada highlights the significance for the Prairie provinces of first mile supply chain projects which, in order to attract new business development investment and facilitate product exports, often require direct connection to the National Highway System (NHS) or class one railway network. At the opposite end of the supply chain, last-mile fluidity is indicated by the B.C. Lower Mainland insert that shows the inventory of 34 projects developed by the Gateway Transportation Collaboration Forum (GTCF) and the Port. Many of these successfully qualified for NTCF funding using business case learnings from APGCI, to enhance fluidity towards the last mile end of Western Canada's supply chain network.



Gateway Transportation Collaboration Forum's project inventory for the B.C. Lower Mainland



Source: Greater Vancouver Gateway 2030, Fall 2020 Update



Québec Regional Transportation Assessment Map

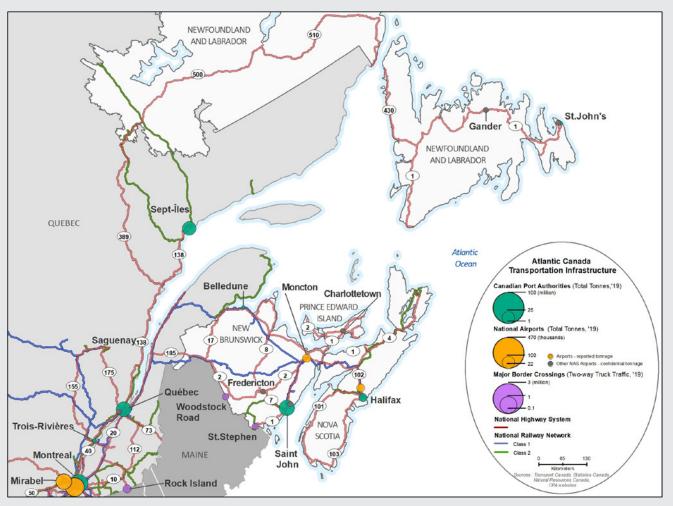
Source: Transport Canada

Figure 14



In addition to highlighting key transport connections for product movements between major centres of production, individual RTA corridors like Québec's autoroute 20/40 are being refined to reflect modal volume flows. In this example, relative daily truck data highlights the road congestion challenges in and out of Montréal and along the Montréal– Québec corridor, a critical consideration for the port of Montréal and its impact on the options for the Montréal–Québec corridor along the adjacent St. Lawrence River.

Source: Transport Canada



Atlantic Canada Regional Transportation Assessment Map

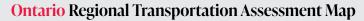
Source: Transport Canada

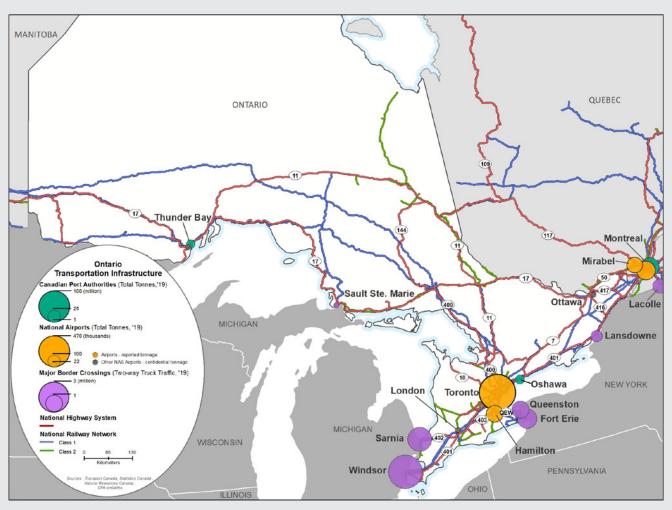
Figure 16

Atlantic - Exports by industry (\$B), 2017



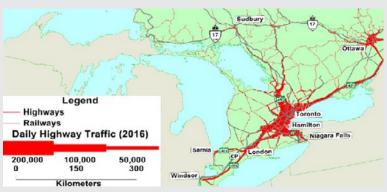
The interconnectedness of the transportation network of the Maritime provinces is reflected in the Atlantic RTA, where approved National Trade Corridors Fund (NTCF) projects like the Chignecto Isthmus interprovincial trade corridor between New Brunswick and Nova Scotia handles \$50 million in trade daily and \$20 billion annually. Maritime export priorities, like live lobster shipments and their reliance on air cargo, are another key feature of Transport Canada's RTA's.





Source: Transport Canada

Figure 18



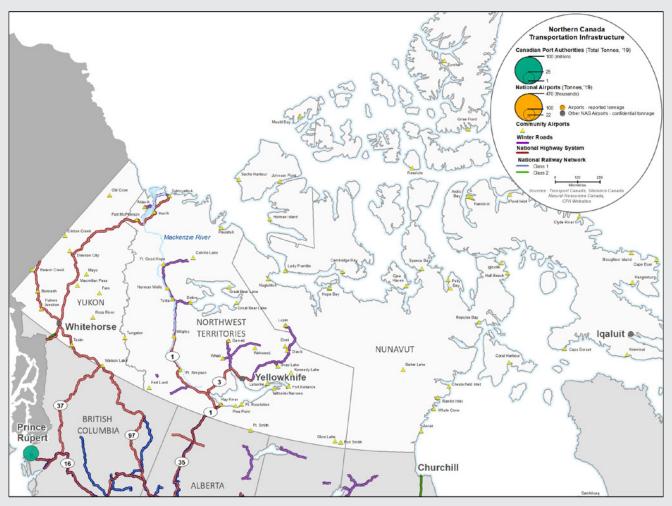
Road congestion in Ontario

Source: Transport Canada

Beyond the overview map, the RTA for Ontario highlights road congestion in the GTHA and to U.S. border crossings as the number one bottleneck to goods movement in Canada. Road congestion in Ontario is particularly problematic as 85 per cent of tonnage moved in Ontario is carried by truck. The RTA also addresses the congestion at rail intermodal facilities which is created by competition for limited rail infrastructure in the GTHA.

Figure 19

Northern Canada Regional Transportation Assessment Map



Source: Transport Canada

The initial RTA for the North was finalized in 2021 by Transport Canada in consultation with the northern territories. In so doing, there is now available a countrywide overview of key transportation assets, bottlenecks and prospective solution partners.

Develop Criteria of National Significance to guide decision making

With the national system defined, it is possible to develop criteria as to what information should be used to identify and select future projects for the system and how that information is weighted. A major challenge attached to developing any national infrastructure plan is how to choose among the vast array of competing priorities and stakeholders lobbying on behalf of their respective infrastructure needs. To bring clarity and determine the relative priority of projects, criteria can help identify projects of national significance from those of local, regional or exclusively commercial benefit. Infrastructure Australia, for example, has laid out in legislation what is nationally significant infrastructure by requiring projects to demonstrate a material improvement to national productivity.

It is important to note that although these criteria are intended to identify projects of national significance, leading jurisdictions developed criteria based on widespread consultations which reflect regional considerations and strategic priorities. Project size based on per capita or volume-based metrics are not always sufficient. Qualitative criteria such as national defence, or in Canada northern development, may be needed. A Canadian example might be projects in Canada's northern territories.

Adapting criteria from the best practices work of other countries suggests core criteria for Canada's trade corridor infrastructure should consider:

- Contribution to Enhanced Trade Corridor Fluidity a common criteria of national plans is to improve national supply chain fluidity either by facilitating faster or greater volume movements through the network. Improving the fluidity or capacity of a trade corridor was a major criterion of the APGCI which asked project proponents to identify how project proposals would improve transportation movements for the gateway as a whole. Today's NTCF includes a similar measure.
- Facilitation of Nationally Significant Economic Development or Productivity Improvement

 the project scope is substantial enough to provide benefits beyond that of a local capital improvement. Some jurisdictions, like Infrastructure Australia, have a minimum dollar threshold based upon a per annum material net benefit taking into account quality-of-life considerations.
- **Return on Investment** leading jurisdictions require their trade corridor infrastructure projects to provide a business case that demonstrates the benefits of proposed investments, including coordination and leveraging other planned investments.

02

An elevated role for the private sector is for trade infrastructure, not for other infrastructure classes. The private sector is the predominant user and in some cases owner and funder of trade infrastructure assets. It also holds unique, often proprietary and private intelligence needed to assure good public returns on investment This formula is not intended to be applied to parks, playgrounds, hospitals and schools.

Institutionalize independent trade advice A key role for the private sector

National planning models that involve the private sector have been around for over a decade. Countries like the United Kingdom, Malaysia, Australia and New Zealand have institutionalized in different forms an ongoing role to ensure the availability of the private sectors' supply chain expertise in the development of their national infrastructure plans. This role for the private sector underscores that the days of thinking about trade infrastructure planning and decision-making as the exclusive purview of government have long since passed. CWF learned firsthand of these efforts in 2015 when Canada's delegation to the G-20 Economic Summit on International Trade returned home asking for input on how Canada could replicate the emerging best practice of formalizing ongoing industry involvement in national trade infrastructure decision-making.

The delegation observed that competing jurisdictions credited significant advances in their own national infrastructure plans to institutionalizing industry expertise to fill intelligence gaps and augment the government's own experience with policy and regulatory oversight. Some countries experimented with legislating responsibility for the guidance of national infrastructure to new independent agencies located outside of traditional government departments. Doing so helped ameliorate concerns about the impact of four-to-five-year political cycles on infrastructure that works on decades-long timelines.

Other countries' involve the private sector directly in infrastructure planning for reasons that apply equally to Canada, such as:

- **Current intelligence** industry exporters, importers and logistics service providers are on the front lines of managing day-to-day operational challenges which in many cases provides the most current understanding of emerging trade network problems as well as the insights required to remedy or improve the network.
- **Supply chain expertise** by virtue of its involvement in international supply chains, industry is better positioned compared to governments to observe how the international jurisdictions in which they operate manage network challenges like fluidity. The level of granularity that accompanies the execution of end-to-end supply chain movements can inform not only hard infrastructure solutions but also how to address regulatory impediments. Having to adjust commercial truck weights or vehicle dimensions at border crossings within the same corridor, for example, can provide different insights on prospective solutions.
- **Construction innovation and cost management** even for trade and transportation assets like the road networks that are managed by provincial and territorial jurisdictions in Canada, the private sector often has the best insights regarding innovative construction options to reduce costs. Studies have shown that properly executed infrastructure construction can increase taxpayer value by as much as two-thirds of the overall costs of capital construction.
- Business requirements increasingly, ownership, operation and construction of trade infrastructure in Canada reside outside of the senior levels of government. Railways, terminal operators, shippers, ports and municipalities confront business imperatives in their roles which are accompanied by a different line of sight and sense of urgency than that of government.

While governments may be reluctant to relinquish direct control by introducing legislation as has been done in some of the above-noted countries, there is strong domestic momentum and experience on which to build from the recent work of stakeholder organizations like the WESTAC and the Gateway Transportation Collaboration Forum (GTCF). In response to its annual member survey WESTAC, whose membership contains perhaps as much industry supply chain horsepower as any in Canada, has in consecutive years conducted detailed industry interviews to identify infrastructure projects and opportunities to improve trade corridors. Similarly, GTCF has demonstrated a successful a model of collaboration among the Vancouver Fraser Port Authority, government and Indigenous groups to advance trade infrastructure proposals.

04

Develop and maintain a long-term project pipeline

The chief mission of the public-private body or mechanism will be the development and updating of the long-term project pipeline. With a foundation of existing trade corridors and transportation assets, along with the criteria for selecting projects to support its development, national infrastructure plans can turn their attention to the selection and sequencing of projects with the greatest potential to improve the national network by demonstrating lasting value over the long term. For example, the United Kingdom's National Infrastructure Commission employs a 30-year planning horizon and formally updates their national infrastructure plan every five years.

This typically takes the form of a multi-year infrastructure project list extending to provide a comprehensive investment roadmap for national infrastructure investments.

A multi-year timeframe for an inventory of trade infrastructure projects has proven to be an important feature of the national infrastructure plans of other countries for many reasons:

- The interconnectedness of trade corridors means that multiple owners and transportation
 modes are often involved in a single corridor, so optimizing any infrastructure project
 investment necessarily involves addressing collective network impacts. Related projects
 within a corridor may need to be executed together or sequenced and coordinated to
 realize intended outcomes.
- Ad hoc "shovel ready" projects may be quicker to implement but are often lower value and more likely to lead to stranded investments. Projects supported by proper due diligence, including a sound business case and quantifiable return on investment are, according to the International Monetary Fund, more likely to be "shovel worthy" in terms of economic return and value for money.
- Infrastructure projects to enhance fluidity or those to accommodate more volume are themselves built upon 25–75-year business case life cycles that by definition involve complexities, major costs and regulatory approvals.

Beyond these ongoing benefits of long-term pipelines, it is noteworthy that for shorter-term economic stimulus purposes like the post-COVID 19 economic recovery, countries with existing strategic project pipelines have a "go-to" inventory of publicly defensible projects with already established long-term benefits.

A current domestic example in Canada of a multi-year project pipeline is that of the Gateway Transportation Collaboration Forum (GTCF) under the leadership of the port of Metro Vancouver (See GTCF's project inventory for the B.C. Lower Mainland in Step One). GTCF acknowledges taking a page from the APGCI playbook to bring together multiple stakeholders to develop 34 (and counting) trade infrastructure projects that share the objective of improving trade infrastructure in the Lower Mainland. More than half of the GTCF infrastructure projects have been successful in attracting funding under the federal government's National Trade Corridor Fund.

05

Regular assessments to measure progress

In addition to project selection, the public-private body will have to manage the review of the process for selecting projects. Leading international jurisdictions like New Zealand, the United Kingdom and Australia use infrastructure audits and the criteria-based approval systems of their long-term project pipelines to regularly evaluate and assess the progress of their respective national plans. These reviews report publicly on projects after implementation to determine if outcomes have been achieved. Learning from past projects is fundamental to inform future infrastructure decisions and make adjustments to project pipelines. The Infrastructure Australia Act requires that that country's framework be reviewed at least every two years to ensure that it remains current with international best practices and continues to meet emerging national priorities.

This step in the process is not intended to identify solutions but rather to revisit the infrastructure baseline by understanding the latest problems that infrastructure investments are seeking to solve. Best practice is to manage this assessment against the specific project criteria, sometimes in the form of an audit, to facilitate an evidence-based analysis of the original business case. A significant aspect of this part of the process involves engagement with both users and providers of infrastructure services to gather their insights on prospective improvements.

Canada has at least two important domestic reference points to establish a similar framework for measuring progress. The country's earlier generation of national trade infrastructure programs such as the Gateways and Border Crossings program and the Asia-Pacific Gateway and Corridor Initiative were reviewed by Canada's Auditor General against some similar criteria. More recently, Canada's former Infrastructure Minister, the Honourable Catherine McKenna, initiated the Government of Canada's first national infrastructure assessment focused on three priorities:

01

Assessing infrastructure needs and establishing a long-term vision;

02

Improving coordination among infrastructure owners and funders; and 03

Determining the best ways to fund and finance infrastructure.

It is unclear how much of Canada's first national assessment will be devoted to reporting on the outcomes of the past five years and \$71 billion worth of infrastructure projects under the 12 Year Investing in Canada Plan compared to establishing a long-term vision for future needs and priorities. Nevertheless, it has the potential to set the long-term course by properly establishing project requirements to guide funding disbursements and ongoing project improvements.

Upgrade infrastructure intelligence including forecasting and modelling

The public-private mechanism will also need better data and information to manage the identification and selection processes for the pipeline of projects. One of the important features of national infrastructure plans is their use of robust intelligence and data to inform forthcoming trade infrastructure requirements. Historically in Canada, infrastructure planning has largely relied on industry growth projections based on past data to predict future requirements. Today, more detailed information is available to predict demands on trade infrastructure networks. Initially, this kind of intelligence was observed in the work of international infrastructure banks, but it is now an institutionalized feature of the audit and review processes that are part of national plans.

Competitor countries customarily employ strategic foresight methods. This field of research aims to understand the future by not simply extrapolating past trends forward, but instead uses forecasting tools and data based upon a three-stage methodology:

01

02

Horizon scanning to understand national and global forces that are likely to shape the country in coming decades and consequently what is required from infrastructure; Interpretation and analysis to apply trends to the transportation sector and others to understand likely future impacts and needs of the sector; and

03

Identifying and applying sector-based challenges and opportunities to understand how and when each will impact infrastructure services.

This analysis draws evidence from the knowledge and expertise of both government agencies and industry sources who plan, build, operate and maintain these assets and networks.

A good example of this kind of work in Canada is the predictive analysis previously supported by Transport Canada and more recently modelled by the Canada West Foundation (CWF) to understand the implications of new trade agreements. In 2020 for example, CWF quantified the impact of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership trade agreement on Canadian transportation infrastructure including which gateways, ports of clearance and major modes of transportation would be affected. This analysis uses a commodity-based freight model to convert trade flows into multimodal vehicle flows by value and volume to identify the specific transportation gateway and mode that will be impacted. The results allow policymakers to identify hotspots and bottlenecks in the transportation network where congestion may occur from natural trade growth and the additional pressure of new trade agreements. Policymakers and industry can use the information to better identify where additional resources or support may be needed to facilitate trade flow and increase transportation and supply chain efficiency. This work should also improve and facilitate government regulatory review processes.

06



The guiding overall recommendation is for an "early harvest approach." Even if, for example, only five of the seven core components can be implemented to start, the priority should be to launch the national plan with the additional components and possibly improvements and amendments to follow as soon as possible.

07

Strategic communications

Finally, adopting a strategic communications strategy is an important consideration for Canada's first trade infrastructure plan for at least two reasons. The first is to signal this commitment to improve the competitiveness of Canadian trade corridors to both international trade customers as well as domestic Canadian companies. The second is to highlight and share important information from the many working groups across the country that have recently advanced the understanding of Canada's trade corridor network. The following list of initiatives is far from exhaustive but is suggestive of the potential to be achieved from improved transparency and coordination of shared intelligence:

INITIATIVES	Transport Canada's Regional Transportation Assessments (RTA's)
	The Supply Chain Visibility Project
	WESTAC's Western Transportation Corridor Initiative (WTCI)
	The Commodity Supply Chain Table
	The Gateway Transportation Collaboration Forum (GTCF)
	The National Trade Corridor Fund (NTCF)
	The Canada West Foundation Supply Chain Modelling Project
	Pacific Gateway Alliance
	The Pan-Canadian Competitive Trade Corridor Initiative (PCCTCI)
	Provincial and Territorial Transportation Agency Multi-Year Capital Plans
	The Collaborative Forward Planning Initiative

As one example of a starting point to enhance information sharing, a single electronic portal could be established to inventory the considerable findings of these working groups to avoid duplication and connect infrastructure stakeholders.

Conclusion

Introducing a sustainable long-term plan to improve Canada's network of key transportation assets is not simply a trade infrastructure issue. The integrated network of trade corridor assets which includes highways, railways, ports and airports serve as Canada's physical connection to the international supply chain platform on which global commerce operates in the 21st century. This is why quality trade infrastructure is a key enabler of Canada's trade-based economy and, more importantly, why a national plan is required if Canada is to realize a new generation of economic growth.

This paper presents the starting point to re-establish Canada as a trusted and reliable deliverer of goods and services. It should be guided by a vision characterized not only by greater throughput efficiency but also by sustainability, greater climate change shock resistance and more sophisticated analysis and modelling of anticipated trade changes. To mirror the best practices of other jurisdictions, it should leverage the local strengths and priorities of different regions of the country through continuing outreach and consultation.

As the world builds back from the impact of the pandemic, economic growth will be critical not only for jobs and business revenues, but as a major contributor to balance sheets across the country. The pandemic has left federal, provincial and territorial governments with combined deficits that will approach \$100 billion this year and which could rise by \$200 billion by 2023. Just as economic growth was a key part of Canada's fiscal recovery following the world economic and financial crisis of 2008, so too will economic growth be important in restoring manageable debt levels, including paying for the deficiencies exposed by the pandemic to cover investments such as those in long-term care.

The urgency to move forward with tangible first steps cannot be overstated. Fortunately, Canada has early opportunities through which to formally address this. First, as previously noted, actionable follow up is needed to the February 2022 meeting of the Council of Ministers of Transportation and their report on the Pan-Canadian Competitive Trade Corridor Initiative (PCCTCI). This includes assuring that meaningful, concrete action is taken and that the private sector plays a role commensurate with its importance. Transportation and Infrastructure Ministers representing all Canadian provinces and territories have publicly committed to terms of reference that align well with the best-practice objectives and recommendations of this report.



Assuring that the private sector has a meaningful role in implementing the recommendations in this report – a metaphorical if a not literal seat at the table and a vote – is a key ingredient for success.

In addition to the PCCTCI recommendations, federal Transportation Minister, the Honourable Omar Alghabra, has announced a supply chain task force which is expected to report as early as this summer. Finally, the federal government through Infrastructure Canada is currently considering updates to the suite of national infrastructure programs which include the results of the NIA review. Among the broader scope of infrastructure priorities of the NIA, re-establishing the relative priority and funding for trade infrastructure should be a key feature. The bridge to a first national plan from these initiatives should be imminently achievable.

Throughout the interviews and public discussions that were part of the research for this report, private sector stakeholders from owners and operators of assets to major users of the system, have stated a willingness to contribute to the steps necessary for long-term structural improvements to how the country manages the trade infrastructure file. Unlike other infrastructure asset classes like schools, hospitals and parks, in Canada the private sector is often the biggest user, the largest owner and primary operator or funder of trade infrastructure assets. It has unique proprietary information critical to making intelligent informed choices. In many cases, it has human capital that governments lack to turn this data into usable information. The private sector has much to contribute and a vested interest in doing so. There is, however, wariness and frustration from past consultations that information that takes time and effort to produce will not be used. Assuring that the private sector has a meaningful role in implementing the recommendations in this report – a metaphorical if a not literal seat at the table and a vote – is a key ingredient for success.

Good for the West. Good for Canada.

The Canada West Foundation is an independent, non-partisan public policy think tank that focuses on the policies that shape the West and, by extension, Canada. Through our evidence-based research and commentary, we provide practical solutions to tough public policy challenges facing the West and Canada as a whole, at home and on the global stage.



Stay Connected *cwf.ca*