

Transportation
in Canada
OVERVIEW REPORT

2020



Transport
Canada

Transports
Canada

Canada

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Preface

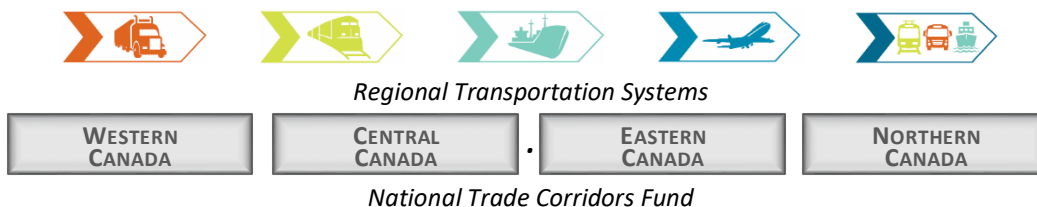
Minister's Message
Transportation 2030
Highlights
Purpose of this Report

Chapter 1: The Role of Transportation in the Economy

Transportation Enabling Economic Growth
Transportation Supporting Trade
Transportation Supporting Mobility

Chapter 2: Overview of Canada's Transportation System

Canada's National Transportation System



Chapter 3: Recent Developments in the Transportation Sector

Road Transportation
Rail Transportation
Marine Transportation
Oceans Protection Plan
Air Transportation
Transportation of Dangerous Goods
Public Transportation

Chapter 4: Performance of the Canadian Transportation System

Performance Measurement
Freight Transportation
Passenger Traffic Flows
Safety and Security Transportation
Green Transportation

Chapter 5: Trends and Outlook

Trends in Innovation
Transportation Outlook

Annex A: Maps

Annex B: List of Addendum Tables and Figures

MINISTER'S MESSAGE

THE HONOURABLE
OMAR ALGHABRA



MINISTER OF TRANSPORT

I am pleased to present *Transportation in Canada 2020*, which provides Canadians with an overview of their transportation system at work. In 2020, it was an unprecedented year.

Transport Canada's primary focus throughout most of 2020 was protecting Canadians from COVID-19. The Government of Canada worked with provinces, territories, industry, and communities to help prevent the spread of COVID-19 within the transportation sector and communities; and the situation was often evolving as we all learned more about the virus and its variants. All orders of government in Canada took decisive action to protect the health and safety of Canadians.

Canada's economic success and Canadians' wellbeing depend on the fluidity of our supply chains. Canada's supply chain workers deserve special recognition for their coordinated efforts to continue moving Canadian commodities to market throughout the pandemic, as well as shipping and delivering essential goods like food and medical supplies.

When the Public Health Agency of Canada advised Canadians to avoid all non-essential travel outside Canada, we knew we were in unprecedented times. A robust layered system of measures was put in place to protect Canadians, including those working in transportation and in shipping, and those who must travel for essential purposes. Those measures were informed by the latest science and data, and the guidance of local public health agencies.

In the aviation sector, these measures included mandatory face coverings, health checks, temperature screening, and restrictions on international travel, such as limiting international passenger flights to certain Canadian airports. Measures were also put in place for passengers using other modes of transportation, such as ferries or intercity rail. Restrictions were imposed for marine pleasure craft and cruise ships.

Despite the challenges presented by the global pandemic, important progress was achieved on important Transport Canada priorities in 2020. This includes improving trade corridors, working toward zero-emission vehicles targets, and taking steps to modernize laws, regulations, and departmental operations. For example, some important changes were put in place for the rail sector, including Ministerial Orders to improve rail safety and reduce derailments in Canada, as well as updates to the Duty/Rest Rules for Railway Operating Employees, to better reflect the latest science on fatigue management, and to better protect Canadians working or living near railways. To strengthen our trade corridors, Transport Canada worked with proponents to ensure that transportation infrastructure projects supported by the National Trade Corridors Fund could continue to advance, despite the challenges of the global pandemic.

Ongoing implementation of the Oceans Protection Plan – the largest investment ever made to protect Canada’s coasts and waterways while growing the economy – has made marine shipping safer, increased protection for our marine species and coastal ecosystems, and improved Canada’s ability to prevent and respond to marine incidents. This has been accomplished in collaboration with Indigenous peoples and coastal communities, the marine industry, and academia.

Transport Canada was also part of coordinated efforts to protect marine mammals – including North Atlantic right whales and Southern Resident killer whales – in what has become an impressive multijurisdictional annual initiative that requires a great deal of collaboration and cooperation.

The National Seafarers’ Welfare Board was established in 2020, as part of Canada’s commitment to the International Labour Organization’s Maritime Labour Convention. It will act as a forum for coordinating seafarer welfare in Canada; promote maritime workers’ access to recreational, cultural and medical services, as well as shore-based welfare facilities; and advise the Government of Canada on policy and regulatory issues such as shore leave and crew changes.

Canadians felt a deep and tragic sense of loss after Ukraine International Airlines Flight PS752 was shot down in Iran. People travelling from one part of the world to another should have confidence that they will not be exposed to safety and security risks that conflicts pose to civilian flight operations. That is why Canada took a lead role with the Safer Skies Initiative, committing to working with international partners to improve the safety and security of air travel worldwide, addressing gaps in how the civil aviation sector deals with conflict zones.

Transport Canada remains dedicated to creating a smarter, environmentally friendly, safe, and secure transportation system. Modernization continued to be a key theme for Transport Canada in 2020, led by evidence-based decision making and using insights from behavioural science to inform policy and guidance for safety and security efforts.

Each year, Transport Canada reports on the key policies it has implemented, along with performance indicators and major developments that have shaped the transportation landscape. This annual report, *Transportation in Canada 2020*, is intended to provide greater transparency and accountability to transportation partners, stakeholders and Canadians. I hope this report will provide you with useful information on Canada’s transportation system and the work Transport Canada is doing to continue improving it.

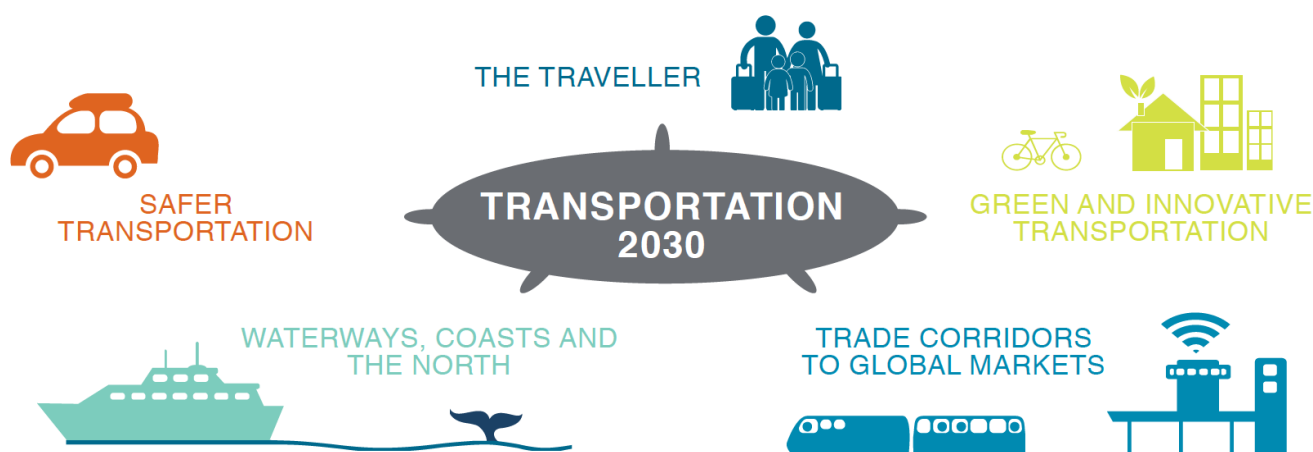
The Honourable Omar Alghabra, P.C., M.P.

Minister of Transport

TRANSPORTATION 2030

Transportation 2030 is the Government of Canada's strategic plan for the future of transportation in Canada. Transport Canada continues to implement Transportation 2030, a strategic plan for a safe, secure, green, innovative and integrated transportation system that supports trade and economic growth, a cleaner environment and the well-being of Canadians.

TRANSPORTATION 2030 IS BASED ON 5 THEMES:



TRANSPORT-RELATED PROJECTS

This year, Transport Canada focused on a number of activities to support Transportation 2030.

The Oceans Protection Plan

\$1.5 billion over 5 years to improve marine safety and responsible shipping, protect Canada's marine environment, and creating stronger Indigenous partnerships and engage with coastal communities.

National Trade Corridors Fund

Investing \$2.3 billion over 11 years (2017-18 to 2027-28) to strengthen Canada's trade infrastructure (ports, waterways, airports, bridges, border crossings, and rail networks). Budget 2021 proposes an additional \$1.9 billion over 4 years, starting in 2021-22, to recapitalize the fund.

Modernizing Canada's transportation system

Developing strategies, regulations and pilot projects to safely use automated and connected vehicles and drones.

Canadian Centre on Transportation Data

Creating a single source for high-quality, timely and accessible transportation data and information. The Centre provides links to transportation data, information on how the transportation system is performing, and a map with links to information about Canada's larger land border crossings, airports and ports. The Centre supports evidence-based decision-making by addressing transportation data gaps, strengthening partnerships, and increasing the transparency of strategic transportation information.

The Pan-Canadian Framework on Clean Growth and Climate Change

Developing measures like the federal carbon pricing benchmark and clean fuel standard, and conducting research and testing on clean transportation technologies for all modes of transportation. Implementing Transport Canada's transportation adaptation initiatives: the Northern Transportation Adaptation Initiative and the Transportation Assets Risk Assessment initiative.

HIGHLIGHTS

GOVERNMENT OF CANADA ACTIONS

In 2020, Transport Canada continued to implement major key initiatives. This included measures under the national Oceans Protection Plan to protect Canada's coasts for future generations, and the National Trade Corridors Fund, aimed at strengthening and increasing the efficiency of transportation corridors within Canada and to international markets. In 2020, under the National Trade Corridors Fund, Transport Canada committed nearly all of the fund's initial \$1.9 billion allocation to 89 transportation infrastructure projects across the country, leveraging more than \$3.9 billion in total investments by all public and private sector partners. To date, strategic investments have been made to improve the fluidity of goods movements in all 4 regional transportation systems.

Efforts to increase the safety and security of the transportation system are of utmost importance. In August 2019, amendments to the *Navigation Protection Act*, which restored lost protections for navigable waters and incorporated modern safeguards came into force. In the air sector, Transport Canada has continued their independent review of the Boeing 737 MAX accidents, while working extensively with the US, domestic, and international partners on implementing additional safety measures. Regarding rail safety, the Minister of Transport announced the publication of the final *Locomotive Voice and Video Recorder Regulations* that specify the technical requirements for rail companies to install these devices on board their locomotives.

The Government of Canada remained committed to addressing the environmental impacts of transportation. Canada continues to support the mandate of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), and throughout 2020 worked on newly proposed, broader regulations that embed the carbon offsetting obligations of CORSIA into Canadian law. In addition, the Government of Canada continued to take action to accelerate zero-emission vehicle adoption and make progress towards the federal zero-emission vehicles targets of 10% of new light-duty vehicle sales by 2025, 30% by 2030 and 100% by 2040.

TRANSPORTATION VOLUMES AND PERFORMANCE

2020 brought unprecedented challenges to the transportation system including rail blockades, a pandemic, and a labour dispute at one of Canada's major ports. Despite these challenges, the system was resilient and was able to swiftly recover and adjust to spike in demand as well as new safety protocols and operational procedures. By the end of the year, freight volume was back to 2019 levels in some regions of the country and for some modes.

Rail traffic decreased 4% from 2019, but recovered lost volumes over the summer and the fall allowing for a partial recovery. Petroleum and motor vehicle products declined considerably, while coal shipments dropped due to the pandemic and long term trends of phasing out coal fired power plants. Despite the global pandemic, total container traffic handled at West coast ports remained steady compared to 2019.

The Port of Vancouver recorded an increase in total container volumes (+2.0%), while volumes at the Port of Prince Rupert increased by 9%. Truck border crossings between Canada and the US decreased compared to the previous year by more than 7%. Air cargo traffic at major airports saw an overall decline, however, the import of pharmaceuticals and textiles saw large increases.

In 2020, all modes of passenger transportation faced challenges leading to reductions of passenger flows. The pandemic, and subsequent restrictions placed to limit its spread, have altered travel patterns. Air transportation was the most impacted sector, along with the cruise industry which suffered from a ban in 2020.

ENVIRONMENT, SAFETY AND SECURITY

From 2005 to 2018, greenhouse gas emissions from the transportation sector increased by 16% to 186 million tonnes of carbon dioxide equivalent (CO₂e). Emissions from road transportation, which represents 84% of total transportation sector emissions, and 21% of Canada's total greenhouse gas emissions, have increased by 19% from over this same period, largely due to an increase in the number of vehicles on the road, a shift towards personal light trucks and greater reliance on medium- and heavy-duty trucks.

However, there have been some notable improvements in the sector. For instance, the emissions intensity of Canadian air carriers has decreased by 18% between 2008 and 2018. Moreover, the rail sector's growth in emissions was contained to 3% while their freight traffic increased by 19% over the 2011-2017 period.

The Government of Canada released its Strengthened Climate Plan, [A Healthy Environment and a Healthy Economy](#), in December 2020. This plan announced a number of concrete actions and commitments the Government will pursue in order to meet and exceed its 2030 Paris Agreement emissions reduction target and move to a prosperous net-zero emissions future by 2050. In addition to broader regulatory measures such as carbon pollution pricing and new clean fuel regulations, which will encourage low carbon choices throughout the economy, the plan includes a suite of new commitments to reduce emissions from the transportation sector and accelerate new clean transportation technology deployment across all modes.

Canada continues to have one of the safest and most secure transportation systems in the world. Road casualty collisions decreased steadily over the last ten years to another low in 2018, even as more vehicles were on the road. In marine transportation, the number of accidents involving at least 1 Canadian-registered vessel was significantly lower than the ten-year average, similarly, the number of aviation accidents was down 28% from the ten-year average. The number of railway accidents was down 23.2% from 2019.

PURPOSE OF THIS REPORT

Transportation is a major contributor to the economy and plays an important role in the wellness of Canadians. It is key to supporting the activity and the economic development of many industries such as the manufacturing and tourism sectors. Transportation not only enables the movement of finished Canadian goods to domestic and international markets, it also allows the movement of inputs needed for Canadian businesses to produce. Likewise, transportation facilitates the movement of people within and between different communities, major urban centres, provinces and countries, by overcoming distances and geographical barriers.

However, considering that Canada is characterized by a vast and sparsely populated territory, with extreme weather conditions, ensuring the safe, secure and efficient movement of goods and passenger in Canada can represent a challenge. In this context, Transport Canada plays a central role in monitoring and reporting on the state of the Canadian transportation system by sharing data and information with the public through its main vehicle, the annual *Transportation in Canada* report.

As mandated by the *Canada Transportation Act* of 2007, subsection 52, each year the Minister of Transport must table in both Houses of Parliament an overview of the state of transportation in Canada. This report, submitted by the Minister under the Act, provides an overview of transportation in Canada based on the most current information for all modes of transportation at the time of publication.

The report highlights the role of transportation in the economy and offers an overview of the national and regional transportation networks in terms of infrastructure. It describes major industry and policy developments in the transportation sector during 2020 from an efficiency, safety and security, and environmental perspectives. The report also presents an overall assessment of the Canadian transportation system's performance in 2020, looking at the use and capacity of the system. It concludes with an outlook on expected trends in the transportation sector.

A statistical addendum to this report is also available. It has information on freight and passenger traffic for each mode, as well as infrastructure statistics. The transportation and economy section shows economic indicators, statistics on labour in the transportation industry, price and productivity indicators, and data on freight trade by mode and country. It also details reported accidents and greenhouse gas emissions.

More data and analysis are also available online through the Canadian Centre on Transportation Data and its [Transportation Data and Information Hub](#) .



HIGHLIGHTS

- In 2020, the transportation and warehousing sector's gross domestic product declined much more (-20.4%) than all other industries in Canada (-5.2%) due to a significant reduction in passenger services during the pandemic
 - In 2020, Canadian households spent \$164.7 billion on transportation (including insurance). This is the second largest expense, second only to shelter
 - In 2020, international merchandise trade was \$1.07 trillion, a 10.9% decrease from 2019
-

TRANSPORTATION ENABLING ECONOMIC GROWTH

Transportation and warehousing is important to the Canadian economy. The traditional way of measuring gross domestic product (GDP) only includes economic activity linked directly to for-hire or commercial transportation. Transportation is key to activities not included in economic measures, like the value of personal travel and of own-account transportation activity (in other words, the shipper using a personal vehicle to move the goods). According to the Canadian Transportation Economic Account data from 2016, the transportation sector contributed \$168.1 billion or 8% of GDP.

In 2016, household production of transportation services (in other words, the production of transportation services by the members of a household for their own consumption, such as driving a car to work) increased Canada's GDP by \$67.1 billion. Non-transportation industries (like manufacturing, wholesale trade and construction) produced \$42.6 billion of own-account transportation services, or 30% of the total domestic supply of transportation.

Using traditional measures of GDP, the sector made up 3.8% of GDP (\$72 billion) in 2020. In the past year, the sector declined by 20.4%, falling at a much worse rate for all industries (-5.2%). However, the total annual growth rate of GDP in the transportation sector over the previous 5 years (3.4%) exceeded that of the entire economy (2.3%).

Although the transportation and warehouse industry accounts for only 3.8% of GDP, it supports activity in other industries. The manufacturing sector for example relies heavily on transportation services to bring input and deliver goods to markets. It is also the case for the wholesale and retail industries.

In 2020, total household spending on transportation (including insurance) amounted to \$164.7 billion, second only to shelter in terms of major spending categories. Household consumption of transportation grew around 4.3% every year on average from 2015 to 2019, with overall spending growing at the same rate. Household spending for personal travel accounted for about 11% of the GDP.

In 2020, 950,200 employees (including self-employed people) worked in the transportation and warehousing sector, down 8.4% from 2019. Employment in the transportation and warehousing sector accounts for about 5% of total employment, a share that has stayed stable over the past 2 decades.

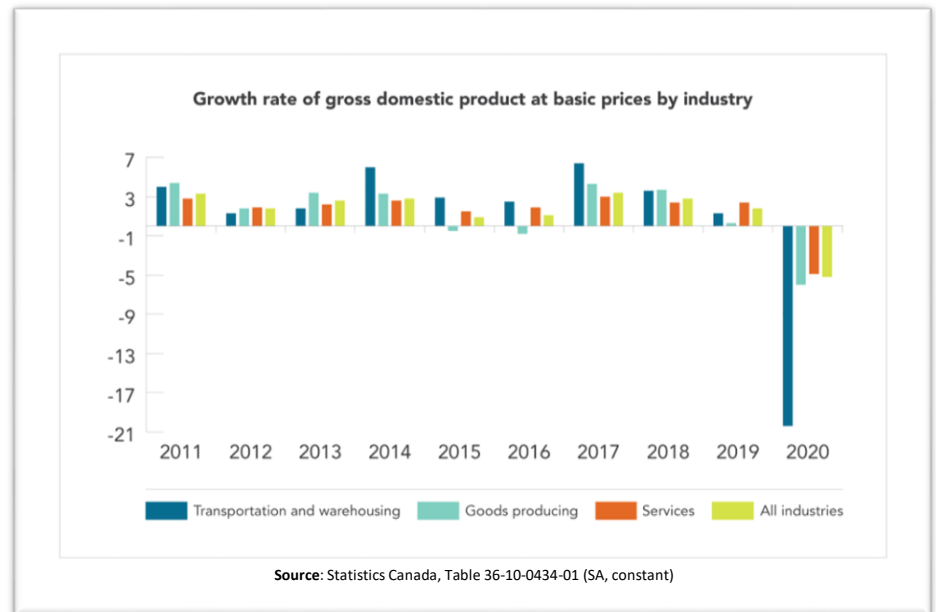
LABOUR SHORTAGES

The World Bank reported that skill shortages are a major threat for the transportation and warehousing sector. An aging workforce and retirement of baby boomers will likely add to labour shortages for certain occupations. Stakeholders have already raised these concerns and how it could negatively affect their ability to stay competitive.

The sector's labour market is severely impacted by COVID-19; the unemployment rate jumped to 7.5% in 2020, compared to 3.2% in 2019 and a 10-year average of 4.1%. Although the sector's unemployment rate compares favorably with the national average of 9.6%, that was not reflected in wage growth. While average weekly earnings in transportation and warehousing grew by 6.1% in 2020, they increased by 6.7% on average for all industries.

According to Employment and Social Development Canada, major gaps between labour demand and supply for some transportation occupations will develop in the next 10 years, especially for truck drivers. This is due to, among other things, older demographics of the industry. Truck drivers tend to be older than the national average, so a large number will retire in the next ten years.

According to the 2016 Census, 40% of the national labour force was between 45 and 64 years old, compared to 50% in the transportation sector. Workers under 25 made up 14% of all workers across all industries, although this share dropped to 7% in the transportation and warehousing sector.



Women are also significantly underrepresented in the transportation industry, with men making up more than 75% of the workforce. Immigrants, especially recent immigrants, and Indigenous people were also underrepresented in most jobs at risk of labour shortages including trucking, transit and air transportation.

The failure to fill jobs could negatively impact the transportation industry, but also Canadian industries that rely on the sector to access domestic and international markets.

COMPETITIVENESS

The World Economic Forum's Global Competitiveness Index is a yearly indicator of a country's performance, based on measures of productivity and economic growth. Transportation infrastructure is included in calculating the Index, and helps compare the quality of transportation infrastructure in Canada to other countries.

Overall, Canada ranked 14th in 2019 with a score of 79.6, close to the best performer's score of 84.8, Singapore. Canada slipped 2 spots and lost 0.3 points compared to 2018. This is partly due to trade issues that have affected Canada's ability to stay competitive.

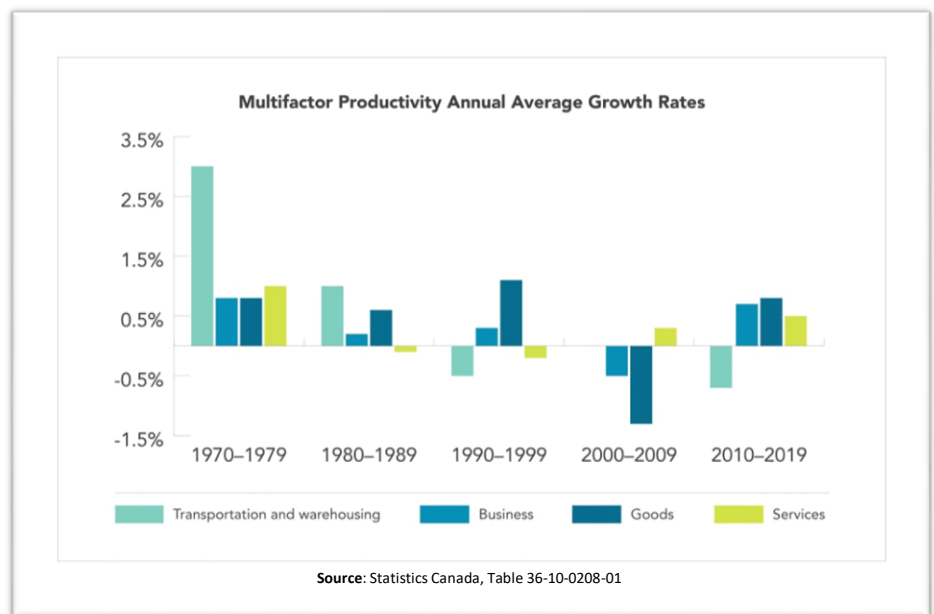
In terms of transportation infrastructure, Canada ranked 32 and scored 65.7 (far below the 100 level, an ideal state where an index component ceases to be a constraint to productivity growth). This score highlights areas that need improvement, including the quality of roads, as well as the efficiency of train and seaport services. On the other hand, road connectivity (98.7) and airport connectivity (96.3) both scored very high with little room for improvement.

PRODUCTIVITY

Multifactor productivity measures how efficiently production inputs, like labour and capital, are being used in production. Statistics Canada monitors Canada's multifactor productivity.

Recently, multifactor productivity in the transportation and warehousing sector has plateaued. Between 2010 and 2019, multifactor productivity decreased around 0.9% per year, compared to the 0.6% increase for the business sector as a whole.

In contrast, labour productivity in transportation and warehousing increased over the same period, at an annual rate of 1.1%. That is slightly slower compared with the overall business sector (1.2%). Labour productivity for some transportation and warehousing sub-sectors, like air and rail transportation, outperformed the business sector with average annual growth rates of 3.0% and 2.9%.



TRANSPORTATION SUPPORTING TRADE

Transportation is important for trade. It allows natural resources, agricultural products and manufactured goods to reach domestic and international markets.

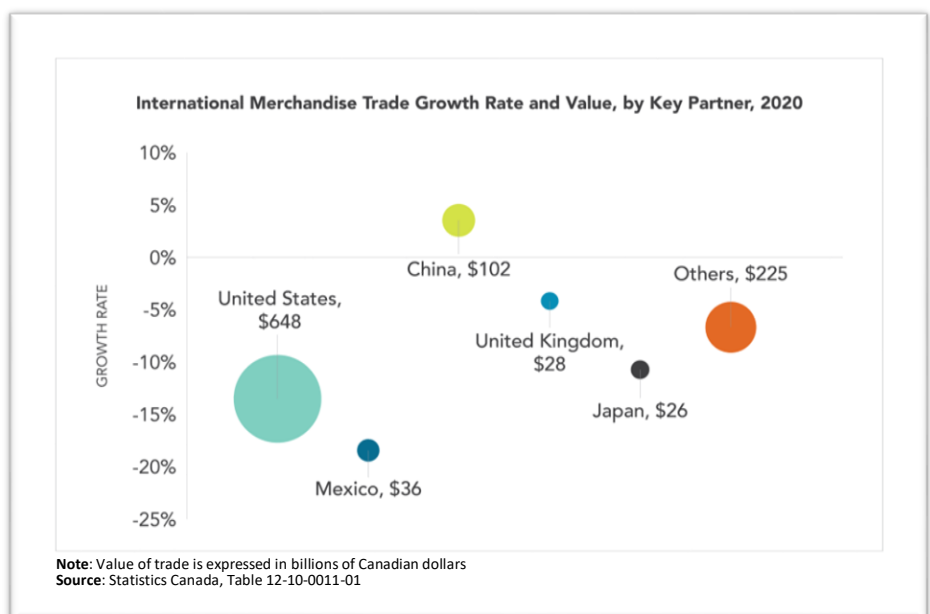
The value of interprovincial merchandise trade totaled \$166 billion in 2019, up 0.2% from 2018.

In 2020, international merchandise trade equaled around \$1.07 trillion, a 10.9% decrease from 2019 and the lowest value since 2016 due to the pandemic. The US remains Canada's top trading partner, with \$648 billion in total trade (\$384 billion exported, \$264 billion imported), down 13.8% from 2019. The US made up 61% of all Canadian trade in 2020, the lowest share since 2011.

Other than the US, in 2020, Canada's top 5 trading partners included China, Mexico, Japan and the United Kingdom. These 4 countries represented 18.0% of Canada's total international trade in 2020.

The department supports Global Affairs Canada in advancing Canada's trade policy priorities and interests, including the negotiation of a number of trade and investment agreements. Transport Canada plays an important role in making sure that Canada has the transportation services and infrastructure needed to connect Canadian products and businesses to international markets, without compromising the safety and security of the traveling public.

Recently concluded free trade agreements include the Canada-US-Mexico Agreement, the Canada-EU Comprehensive Economic and Trade Agreement, and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership. As of March 2021, Canada had 14 free trade agreements in force with 51 countries, representing two-thirds of the global economy. Canada is also the only Group of Seven (G7) country to have free trade agreements with every other member of the G7, connecting Canadian businesses to over 1.5 billion of the world's consumers.



TRANSPORTATION SUPPORTING MOBILITY

With severe restrictions in place for most of the year due to COVID-19, international travel to and from Canada saw significant declines in 2020. Overall, the number of Canadian residents travelling abroad was down 74% year over year. Travel to the US, the most popular international destination for Canadians, declined by 76.2% while trips to other countries decreased by 66.3%.

When looking at Canada as a travel destination, total tourism arrivals declined by 84.4% in 2020 compared to 2019. Arrivals from the US decreased by 84.0% while arrivals from overseas countries were down 85.6%.



HIGHLIGHTS

- Canada's transportation network relies on key transportation infrastructure to safely and efficiently move goods to markets and people between countries, regions and communities
 - In 2020, Transport Canada announced funding for seven new projects under the National Trade Corridors Fund, bringing the total to 89 projects with \$1.9 billion in federal investment and leveraging total investments of \$3.9 billion
 - Transport Canada continued to work with proponents with projects underway, and eight projects are now completed. The Continuous call for proposals for trade diversification projects remained open and Transport Canada launched an Arctic and Northern call for proposals targeting projects that address the transportation infrastructure priorities and needs of Arctic and Northern communities
-

CANADA'S NATIONAL TRANSPORTATION SYSTEM

Canada's vast multimodal transportation network consists of rail lines, roads, waterways and airports. These foundational transportation infrastructures allow people and goods to move across the country, between urban and rural communities, as well as to and from international countries and markets. This section presents an overview of Canada's national and regional transportation networks.

CANADA'S ROAD SYSTEM



As shown on Map 8 in [Annex A](#), the system consists mainly of interprovincial and international road links.

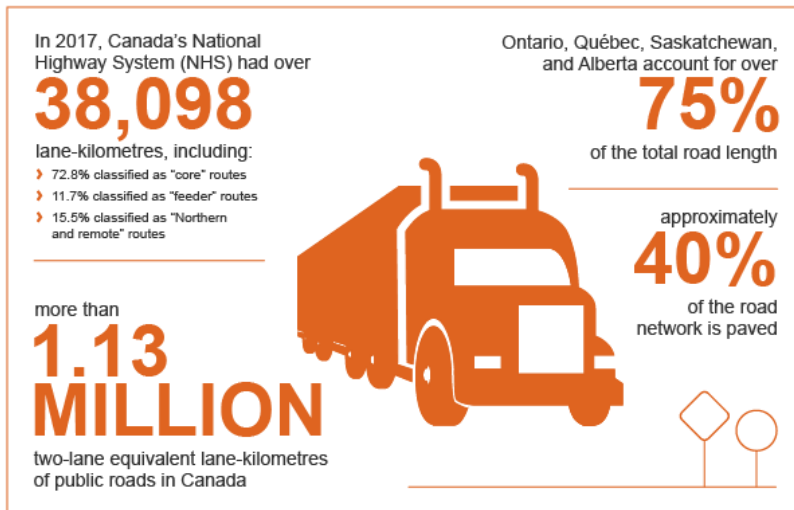
In 2019, 25.4 million road motor vehicles were registered in Canada, up 1.4% from 2018 and 16.4% from a decade ago.

- Around 92% were vehicles weighing less than 4,500 kilograms, mainly passenger automobiles, pickups, SUVs and minivans
- 4.4% were medium and heavy trucks weighing 4,500 kilograms or more, and
- 3.3% were other vehicles such as buses, motorcycles and mopeds

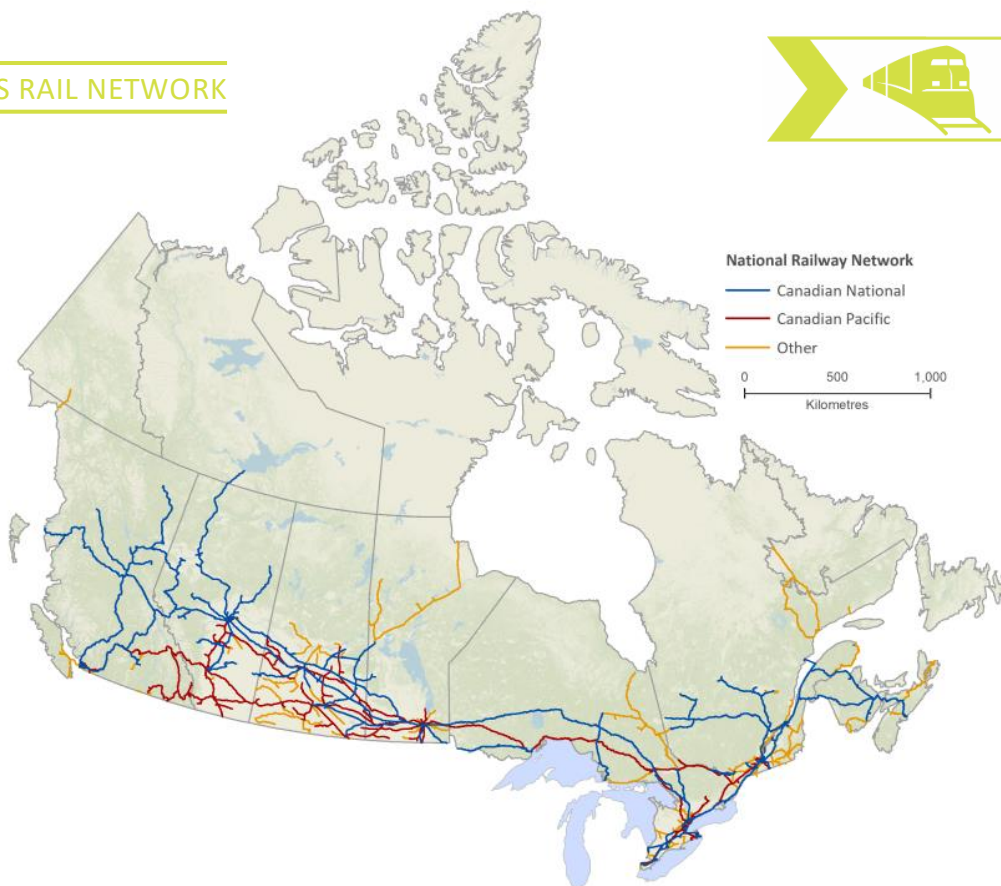
As of December 2020, there were 232,680 businesses whose primary activity was trucking transportation, 72,369 with employees and 160,311 without employees. The trucking industry includes many small for-hire carriers and owner-operators, and some medium and large for-hire companies that operate fleets of trucks and offer logistic services. Trucking companies were mainly concentrated in 4 provinces: Ontario (45.5%), Quebec (17.9%), Alberta (13.8%), and British Columbia (12.3%).

The trucking industry is involved in 3 main types of trucking activities:

- for-hire trucking services, which fall into 2 main categories:
 - “less-than truckload”, meaning to transport relatively small-sized freight from different shippers in a truck
 - “truckload”, meaning to transport a shipment from a single shipper in a truck
- courier operators, which specialize in transporting parcels. As of December 2020, 18,211 companies had courier or messenger services as their main line of business
- private carriers, where businesses maintain a fleet of trucks and trailers to carry their own goods, such as Walmart and Costco. Transport Canada does not currently track this part of the trucking industry (as it was not the primary activity of these non-transportation companies)



CANADA'S RAIL NETWORK



Rail operations serve nearly every part of the Canadian economy, including manufacturing, agricultural, natural resource, wholesale and retail sectors, and tourism industry. Canada has an extended railway system used to transport mainly freight to and from the US, and international markets via coastal ports, as well as passengers across Canada.

FREIGHT SECTOR

The freight rail transportation sector specializes in moving heavy, bulk commodities and containerized traffic over long distances.

Canada has 2 major Class I freight railways, CN and CP, which are responsible for most freight rail traffic. Large US-based carriers also operate in Canada. Examples include the Burlington Northern Santa Fe Railway Company and CSX Transportation Inc.

Together, CN, CP and Burlington Northern Santa Fe Railway Company provide strategic links in the trade route between Canada, the US and Mexico. BNSF's service to Canada's Pacific Gateway gives Vancouver the unique advantage of being the only port on the North American West Coast served by 3 Class I railroads.

In terms of equipment, Class I railway carriers had 2,399 locomotives in 2019, with 53,970 freight cars, mainly hopper cars, boxcars, flatcars and gondolas, and 451 passenger cars.

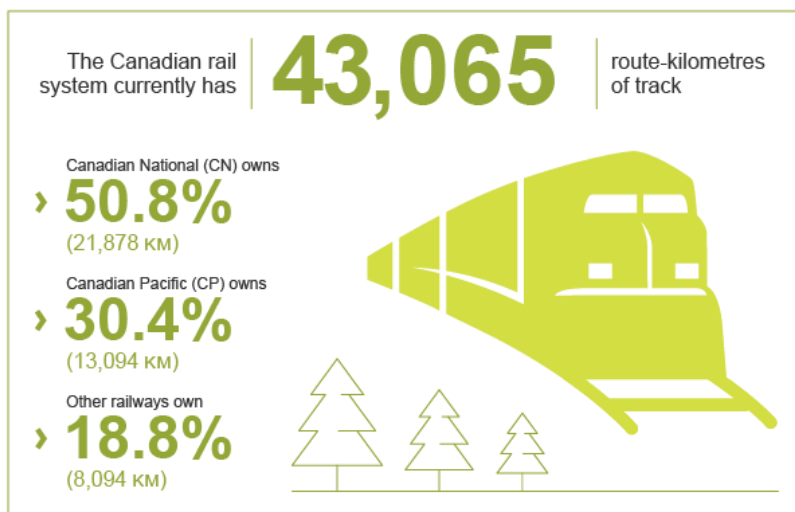
There are 70 companies that fall under the authority of the *Railway Safety Act*. 25 of these companies are federal railway companies, who must also hold a certificate of fitness from the Canadian Transportation Agency. Additionally, there are multiple federally or provincially regulated shortline railways that typically connect shippers of products with Class I railways or to other shortlines and ports in order to move products across longer distances. Shortline railways transport \$34.4 billion worth of freight on average to and from continental rail networks, such as CN and CP, and to ports and terminals.

PASSENGER SECTOR

The passenger rail sector provides commuter, intercity and tourist transportation services. National rail passenger services are largely provided by VIA Rail on behalf of the Government of Canada. VIA Rail is an independent Crown corporation created in 1977, operating Canada's national passenger rail service from coast to coast. It operates mainly over shared infrastructure owned by freight rail companies.

Most of its services are in central Canada along the Quebec-Windsor Corridor. VIA Rail also operates long-haul passenger routes between Toronto and Vancouver and Montreal and Halifax, as well as regional services to destinations such as Jasper, Prince Rupert, Winnipeg and Churchill. In 2020, VIA Rail operated 202 train departures weekly on a 12,500 km network.

In addition to shortlines focused on moving freight, other shortlines provide passenger rail services or tourism services, such as the Rocky Mountaineer Railway.



CANADA'S MARINE NETWORK



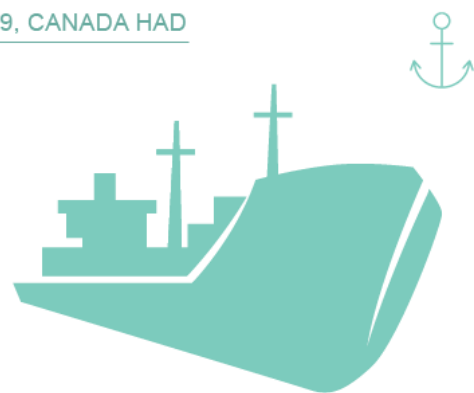
Canadian ports are the main point of exit of Canadian bulk commodities to overseas markets and the main point of entry for imported containerized manufactured goods. Ports are also important hubs, connecting Canadian coast lines to inland domestic and US markets where goods are shipped by railways and trucks.

Transport Canada has a mandate for 2 categories of ports: 17 ports independently managed by Canada Port Authorities, shown on Map 6 in [Annex A](#), and 35 port facilities currently owned and operated by Transport Canada.

Canadian registered vessels are active in domestic commercial activities, carrying around 98% of domestic tonnage. Canadian vessels are also active in facilitating trade between Canada and the US. In contrast, foreign registered fleets are carrying goods to and from non-US international destinations. The domestic marine sector's main activity is transporting bulk cargo. This sector is also critical for northern resupply and offshore resource development.

AS OF DECEMBER 2019, CANADA HAD

- > **563**
port facilities
- > **883**
fishing harbours
- > **127**
recreational harbours

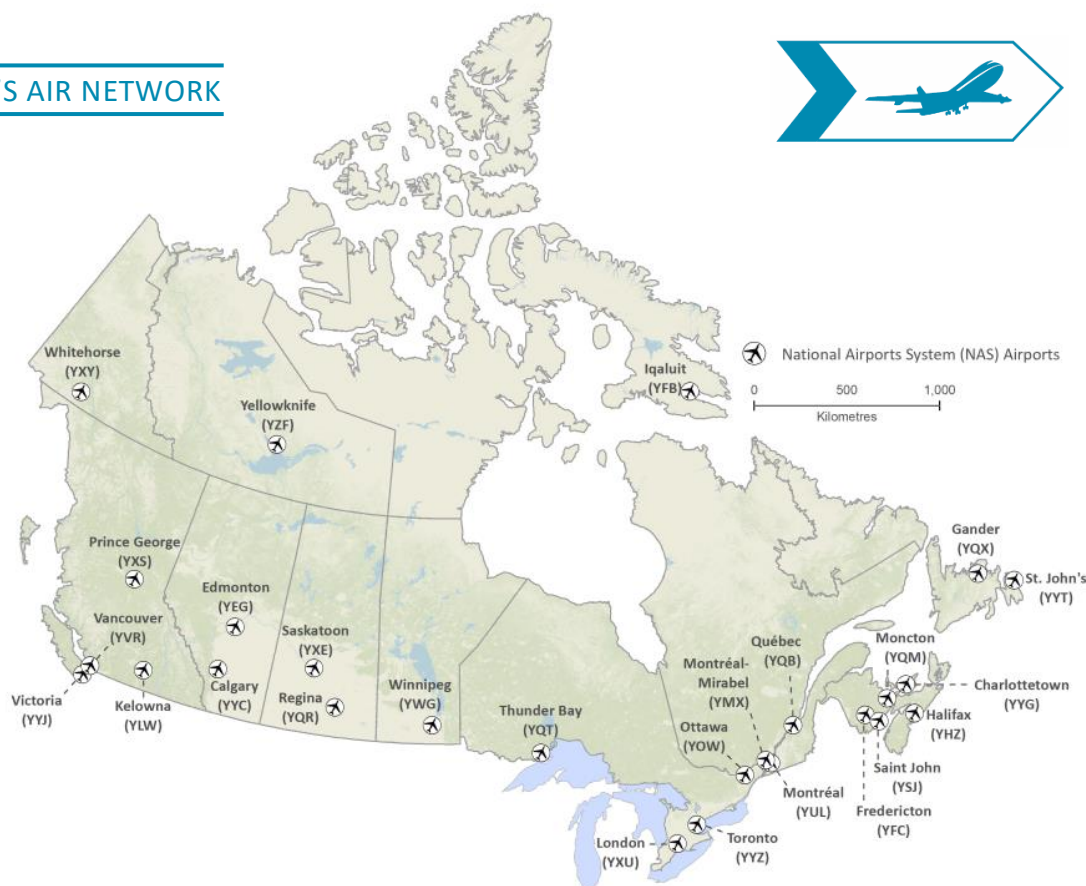


There is a significant diversity within the marine transportation services across Canada served by vessels tailored to serve each market.

In 2020, Canada's commercial registered fleet (1,000 gross tonnage and over) had 727 vessels, with a total of 3.7 million gross tonnes.¹ 440 barges were the fleet's backbone, with 28.1% of total gross tonnage and 60.5% of vessels, followed by cargo vessels (77) and workboats (63). The large active fleet of 440 barges were registered on the Pacific coast.

There are also a number of coastal passenger services across Canada. Ferries in Canada provide an important resupply and transportation link, and play a vital role for coastal and island communities, as well as those separated by river or lake crossings where crossings have no land-based alternative. The members of the Canadian Ferry Association, which includes all major ferry companies in Canada, carry yearly on average more than 53 million passengers and more than 21 million vehicles.

CANADA'S AIR NETWORK



Canada's air transportation system connects Canada to the world and moves passengers across the country which spans across six time zones and covers about 18 million square kilometers.

¹ The Canadian vessel registry includes all vessel types.

Canada's airspace is managed by NAV CANADA, a privately run, not-for-profit corporation that owns and operates Canada's civil air navigation system. It operates air traffic control towers at 40 airports and flight service stations at 55 airports.

For a detailed representation of the National Airport System, refer to Map 5 in [Annex A](#).

The Canada Flight Supplement and Canada Water Aerodrome Supplement listed 2,004 certified and registered sites in 2020 as well as 12 additional military landing sites.² The sites fall into 3 categories:

- 344 water aerodromes for float and ski planes
- 418 heliports for helicopters
- 1,254 land aerodromes for fixed-wing aircraft

[AIR CANADA](#)

In 2020, Air Canada's domestic network, operated by its mainline and Air Canada Express, accounted for 55% of available seat-kilometres in the domestic air market.^{3 4} Air Canada, Air Canada Express and Air Canada Rouge, the company's lower-cost subsidiary, operated an average of 1,531 scheduled flights per day. The Air Canada network has 3 hubs (Toronto, Montreal and Vancouver). Prior to the pandemic, Air Canada provided scheduled passenger services to 61 Canadian destinations, 50 US destinations and 74 other foreign destinations on six continents. With the onset of the pandemic, Air Canada reduced the scope of its network.

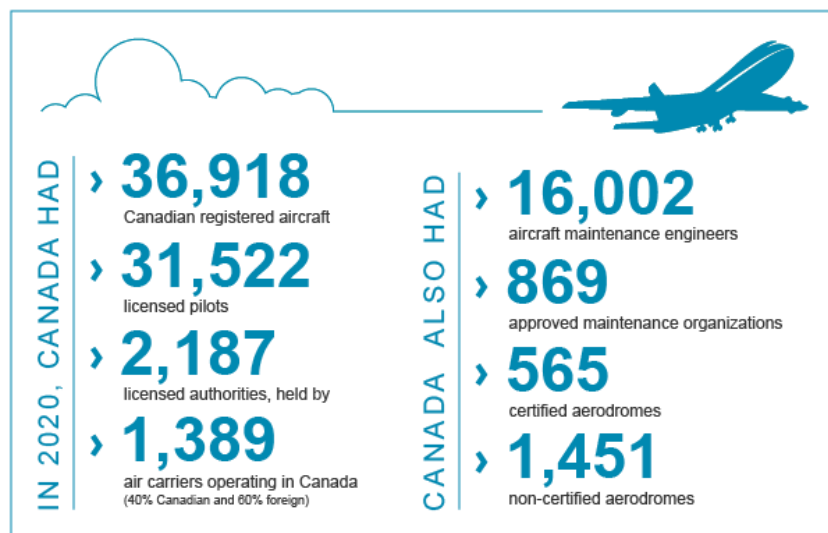
As of December 31, 2020, Air Canada's fleet of aircraft, including those that were grounded for want of demand due the pandemic, totalled 169 aircraft for the mainline, 136 for the 2 third-party air carriers doing business as Air Canada Express, and 39 for Air Canada Rouge.

[WESTJET](#)

In 2020, WestJet and WestJet Encore accounted for 31% of available seat-kilometres in the domestic air market. The WestJet network has 3 domestic hubs (Toronto, Calgary and Vancouver). The airline had provided, pre-COVID, scheduled passenger services to 36 Canadian destinations, 24 US destinations and 35 other foreign destinations. From April 2020, WestJet reduced the scope of its network due to the pandemic, providing scheduled passenger services to 36 Canadian destinations, 9 US destinations and 10 other foreign destinations. At year end, WestJet's fleet, including those that were grounded due to the pandemic, included 121 aircraft, while WestJet Encore had 50 aircraft.

[OTHER CARRIERS](#)

In 2020, Porter Airlines, a regional carrier based at Toronto's Billy Bishop airport, had been using a fleet of 29 Q400 turboprop aircraft to provide direct, non-stop scheduled passenger services to 15 destinations in Canada and 5 in the US, prior to temporarily suspending operations on March 21, 2020 due to the COVID-19 pandemic.



² The methodology has changed from 2018 to 2019.

³ Air Canada Express is comprised of Chorus (Jazz), Sky Regional and Exploits Valley Air Services.

⁴ Represents the number of seats available multiplied by the number of kilometers flown.

Air Transat was the largest leisure carrier in Canada for 2019, with a fleet of up to 48 aircraft, depending on the season. Air Transat served 39 international destinations in 18 countries pre-COVID. Air Transat resumed limited operations in August 2020.

Sunwing Airlines is Canada's second largest leisure carrier. It operated over 30 aircraft, depending on the season, and served 37 international destinations in 17 countries pre-COVID. Sunwing served 24 destinations in 12 countries since April 2020.

INTERNATIONAL AIR SERVICES DEVELOPMENTS

In 2020, foreign operators offered 1.13 million scheduled seats from Canada on an average of 310 flights per day.

CANADA'S PUBLIC TRANSIT NETWORK

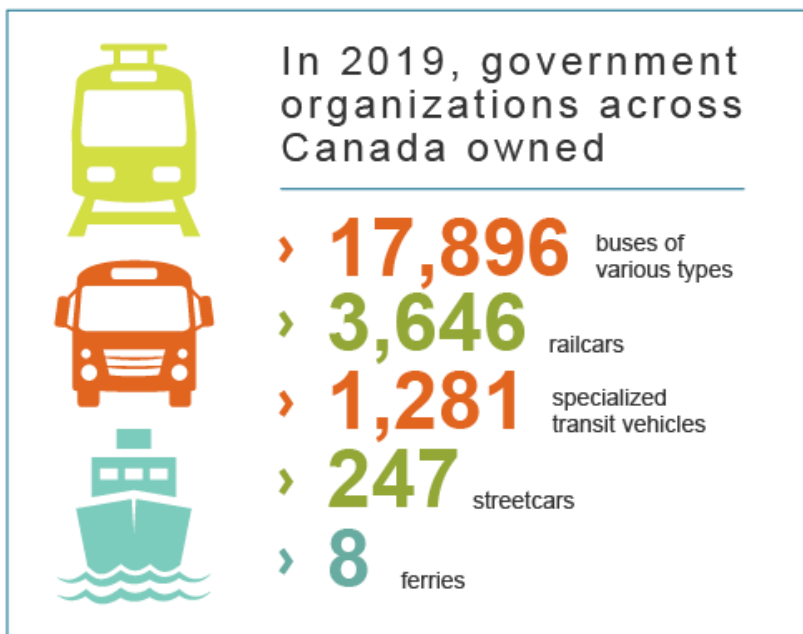


In 2016, there were 315 government organizations across Canada, 292 of which were municipal governments, who owned public transit assets.

They also owned 28,140 transit shelters, 13,937 bicycle racks and shelters, 740 passenger stations and terminals, 375 maintenance and storage facilities, 334 park and ride parking lots, 255 passenger drop-off facilities, and 207 exclusive rights-of-ways.

The public transit road and track network amounted to 7,103 single-track kilometres of roads and 1,573 single-track kilometres of rail.

Most of the railcars and buses owned by government organizations were in Ontario (38.8% bus and 49.4% railcars) or Quebec (21.9% bus and 32.5% railcars).



The majority of park and ride parking lots (75.7%) and passenger drop-off facilities (94.9%) were built in Ontario, Alberta and Quebec.

According to the Canada's Core Public Infrastructure Survey produced by Statistics Canada in 2016, government organizations reported that 66.4% of all buses were in good or very good condition. For railcars, 61.0% of assets were deemed to be in good or very good condition while only 12.0% of streetcars (all found in Toronto) were reported to be in good condition.

REGIONAL TRANSPORTATION SYSTEMS

Canada's transportation system is composed of unique regional transportation networks which have their own characteristics, challenges and opportunities. For more detailed regional maps (1 to 4), refer to [Annex A](#).

WESTERN CANADA

1 in 3 Canadians reside in Western Canada, with most of the population concentrated in urban centers such as Greater Vancouver, Calgary, Edmonton, Regina, Saskatoon, and Winnipeg. Outside of these urban centres, the rest of the western region has relatively low population densities. This widely dispersed settlement pattern required building an extensive network of roads, railways and airports to connect people and resources to domestic and international markets.

Highways are the main means by which the region's dispersed communities are connected. A network of mostly low-volume use highways is anchored by the Trans-Canada highway stretching east-west along the southern half of the region from Vancouver to Regina through Winnipeg and the Yellowhead Highway. In addition, there are 6 highways running east-west along a more northerly route between Winnipeg and Prince Rupert.

British Columbia is Canada's gateway to the Asia-Pacific region and home to Canada's largest port, fastest growing port, and second busiest airport. With the largest nexus of international trade infrastructure in Canada, the Lower Mainland of BC plays a strategic role in supporting Canada's trade diversification objectives with key international markets. Ports in BC are central to enabling trade and handle over half of shipping volumes from all Canadian Port Authorities.

- The Port of Vancouver is Canada's largest port in terms of traffic volume, handling 145.5 million tonnes (Mt) of traffic and facilitating over \$240 billion in trade with over 170 economies in 2020. Home to 29 major terminals, the Port of Vancouver is equivalent to the same size as the next 5 largest Canadian ports combined and handles a diverse range of cargo, including: coal, crude oil, wood products, potash, grain, containers, breakbulk, automotive, and cruise.
- The Port of Prince Rupert, Canada's other main West Coast port, handled 32.4Mt of traffic in 2020, 9% more than its volume in 2019. Prince Rupert offers the shortest ocean shipping route between China and North America, providing Canada with a competitive geographic advantage. The port and region are rapidly expanding, with several infrastructure and capital expansion projects underway.

West coast ports are also the main point of entry for manufactured goods imported from Asia in containers that are then shipped to inland destination in Canada and the US by railways and long-haul trucks. CN and CP are instrumental in facilitating the transportation of goods to and from marine gateways, including the movement of bulk commodities from Prairie provinces to BC ports.

Domestic marine activities also play an important role in British Columbia's economy. Given that the area includes many inlets and islands, numerous coastal communities and ports rely on domestic tug and barge operations. In addition, marine carriers are active in transborder bulk trade to the states of Alaska, Oregon and Washington. Freight carried along the West coast includes general cargo for community resupply, wood products, gravel and stones, construction materials and coal.

International airports in each major city provide cargo services to domestic and international markets.

In 2020, Vancouver International Airport handled 230 thousand tonnes of cargo traffic, which made up 19% of Canada's air freight traffic.

In 2020, \$113 billion worth of goods were exported from Western Canada for all modes (excluding pipelines), with 52% destined to the US, 36% to Asia and 2% to Mexico.

With respect to passenger travel, Western Canada is home to 3 of Canada's top 5 busiest airports. In 2020:

- Vancouver International Airport handled 7.1 million passengers
- Calgary International Airport handled 5.3 million passengers, and
- Edmonton International Airport handled 2.4 million passengers

Vancouver International Airport and Calgary International Airport serve as regional hub airports for both Air Canada and WestJet, Canada's 2 biggest airlines.

Passenger rail services provided by Crown-owned VIA Rail in Western Canada are long distance intercity passenger services. VIA Rail also operates a long-haul passenger route between Toronto and Vancouver, stopping at major cities such as Edmonton, Saskatoon and Winnipeg along the way. This route carried 6 thousand passengers in 2020. Other routes operated by VIA Rail in the western region include Jasper to Prince Rupert and Winnipeg to Churchill.



In British Columbia, BC Ferries provide passenger and vehicle ferry services for coastal and island communities in the province, as well as access to Victoria, where the provincial legislative assembly is located. In 2020, the operator carried 6.7 million vehicles and 13 million passengers on various routes.

CENTRAL CANADA

Central Canada is the most densely populated and industrialized region in the country. Its transportation network is a key enabler of international trade with the US through its connections into the American Midwest and Northeast. Using the Great Lakes and St. Lawrence Seaway System, this network is key to moving goods to and from Europe and other international markets. Key international exports included automotive products and parts, wood products, metal and minerals. In 2020, the total value of merchandise exported for all modes (excluding pipeline exports) through Ontario and Quebec totaled \$317 billion, with 76% of the value destined to the US, 13% to Europe, 5% to Asia, and 1% for Mexico.

Central Canada is the busiest region in terms of surface traffic. Trucking activity plays an important, primarily moving food products, manufactured and other processed goods within the Quebec City-Windsor corridor and to the American States surrounding the Great Lakes. Ontario and Quebec have the busiest road border crossings in Canada. In the Continental corridor, 54% of total merchandise value were exported by road in the last 5 years, compared to 33% and 22% in the Western and Atlantic Corridors, which rely more on marine transportation.

On the Great Lakes, shipping essentially supports the manufacturing sector and grain exports. These are served mostly by lake or seaway size bulk carriers that remain in the Great Lakes during the winter season. The St. Lawrence Seaway portion of the network is used for shipping bulk materials, transshipments of exports and container imports. Grain from the Prairies is typically shipped from the Port of Thunder Bay and carried to different Quebec ports for international exports. In 2020, 37.7 million tonnes of product moved through the Seaway. The following products accounted for two-thirds of the traffic in 2020:

- grain (13.3 million tonnes)
- iron ore (6.1 million tonnes)
- salt (3.1 million tonnes)
- liquid petroleum (1.9 million tonnes)

The Port of Montreal is of strategic importance as it is the entrance to the Seaway, which connects the lower St. Lawrence River to the Great Lakes. The Port of Montreal serves as a major hub for container traffic, mainly serving Quebec, Ontario and the US Midwest. In 2020, 35.1 million tonnes of merchandise including 1.6 million TEUs was handled at the Port of Montreal.

In terms of air cargo transportation, Toronto (Pearson), Hamilton and Montréal (Trudeau and Mirabel) are active in cargo shipping and together accounted for 53.9% (774 thousand tonnes) of air freight traffic in Canada in 2020. This cargo travels mostly to the U.S., the United Kingdom and China.

On the air passenger side, Central Canada is home to the country's busiest airport, Toronto Pearson International, which recorded 12.9 million passengers in 2020.

Destinations included: Canada (40.5%), United States (23.3%), Europe (9.6%), Asia (5.5%) and other international destinations (21.1%). Montréal-Pierre Elliott Trudeau International Airport, Canada's third largest airport, served 5.1 million passengers in 2020. Destinations included: Canada (37.08%), United States (20.04%), Europe (15.37%), Asia (1.0%), and other international (26.51%).

Via Rail's biggest market operates mostly in Central Canada, which can be separated into two specific corridors.

- Corridor East operates trains between Quebec City, Montréal, Ottawa, and Toronto. This is the busiest corridor, with 830 thousand passengers in 2020.
- Corridor Southwestern Ontario operates trains between Toronto, London, Sarnia, Windsor and Niagara. It carried 292 thousand passengers in 2020.

VIA Rail also operates regional services in the rural areas of the country, including between Montreal and Senneterre, Montreal and Jonquière, and between Sudbury and White River.



EASTERN CANADA

The Atlantic Corridor is relatively less populated than other Canadian regions. It is home to 2.3 million people, concentrated in small and scattered urban areas. Nevertheless, its network plays an important role in facilitating domestic and international trade.

Key exports from Atlantic Canada include petroleum products and seafood products. In 2020, \$24 billion worth of exported merchandise for all transportation modes (excluding pipeline) moved from the region with 66% of the exported value destined to the US, 17% for Europe and 10% for Asia.

Connection to international and domestic markets is facilitated by a series of marine ports anchored by the Port of Halifax (8.3 million tonnes in 2020), the largest container handling port in Atlantic Canada and an important hub for petroleum products and motor vehicles. The Port of Halifax is also one of the few ports on the North American east coast that can handle fully laden post-Panamax container vessels and is also North America's closest point of ice-free access to Europe and Asia (via the Suez Canal).

The Port of Saint John in New Brunswick is Atlantic Canada's largest port in terms of tonnage (26.0 million tonnes in 2020). Saint John is an important port for processing, refining and shipping crude oil. Similarly, the Port of Come-by-Chance in Newfoundland and Labrador handles a large quantity of petroleum products from the province's offshore oil development project sites.

The highway network in Atlantic Canada is defined by the Trans-Canada Highway, the east-west backbone of the region running from the Quebec border to St. John's, Newfoundland and Labrador.

In 2020, a single Class I railway, CN, provided freight services to and from central Canada through to Halifax. A number of shortline railways also provided feeder services in Nova Scotia and New Brunswick.

On the passenger side, VIA Rail operates the Ocean train, a long-haul passenger route that operates between Montreal and Halifax. The Ocean transported 9 thousand passengers in 2020.

The region includes 26 airports, with the largest airports being located in Halifax and St John's.

Crown-owned Marine Atlantic Inc. provides ferry services linking the island of Newfoundland to Nova Scotia, transporting more than 311,499 passengers, while private operators, on behalf of Transport Canada, provide inter-provincial ferry services in Eastern Canada, including service between:

- Îles-de-la-Madeleine, Québec and Souris, PEI
- Saint John, New Brunswick and Digby, Nova Scotia, and
- Wood Islands, PEI and Caribou, Nova Scotia

In 2019, the Government announced its support for Marine Atlantic Inc. to modernize its fleet through the procurement of a new ferry and that it will procure 2 new ferries to replace the *MV Madeleine*, operating between Îles-de-la-Madeleine and Souris, PEI and the *MV Holiday Island*, operating between Wood Islands, PEI and Caribou, Nova Scotia. In 2020, the Government announced that it would acquire the *MV Villa de Teror* (renamed the *MV Madeleine II*) as an interim solution to replace the *MV Madeleine* until the new replacement ferry is ready for service.



NORTHERN CANADA

The Northern region of Canada comprises a vast and varying geography with the 3 territories alone accounting for around 40% of the total area of Canada and a very small percentage of the total population. The geographic contrasts include the taiga (boreal) forests of the subarctic region, to the tundra, permafrost and barren landscape of the Arctic.

Transportation is a lifeline for northern communities and enables economic development in Canada's Arctic, yet northern transportation infrastructure remains limited. This makes it difficult, time-consuming, and expensive to move passengers and goods in and out of remote northern communities. The mode of transportation that is feasible varies across the North; the unique geography of the North poses certain challenges to the transportation of passengers and cargo, requiring an equally unique transportation system.

Many northern communities are highly dependent on summer sealifts. Arctic sealift operations resupply coastal communities in Nunavut, Nunavik and the Northwest Territories with limited or no permanent road connection to southern Canada. The sealift is characterized by a system of tanker and dry cargo ships carrying out resupply activities at Baffin, Kivalliq and Kitikmeot. It also includes deep draft barges to Kitikmeot and the coastal Northwest Territories communities, and a barge system through the Mackenzie River.

Many northern communities receive only 1 sealift per year, and the shipping season is very limited, operating between July through mid-November, with heavy ice breaking required on the shoulders of the season. Sealift orders must be made about a year in advance for anything required the following season, including heavy equipment, construction materials, dry goods, fuel, and vehicles.

Air is the crucial form of transportation in the northern region for travel, essential services (e.g. medical emergencies), all-season resupply (including food and mail), tourism, and other economic development. The northern air system has scheduled air carriers which provide mainline service between southern Canada and 4 northern gateways – Whitehorse, Yellowknife, Rankin Inlet, and Iqaluit – supported by an extensive network of connecting or feeder services. The northern airport system supports the air service through a system of 80 airports operated by the territorial governments, as well as a number of other airports operated by resource companies, tourist operators, and federal government departments.



The development of surface transportation infrastructure varies greatly in the North. Yukon has the most extensive highway system in northern Canada, comprising of Alaska Highway, Klondike Highway, and Dempster Highway connections to both the Inside Passage and the Arctic coast. This system links most mineral production areas in the territory to tidewater at the Alaska Inside Passage Port of Skagway. It also provides direct trucking access from Watson Lake via Cassiar Highway 37 in British Columbia to the BC Inside Passage Ports of Stewart, Kitimat and Prince Rupert.

The Yukon highways carry the most northern surface traffic in terms of tonnage. Surface transportation in the Northwest Territories tends to vary, with people and cargo being transported by all-weather and winter roads in the west and along the Mackenzie Valley to a rail connection with the South (through Hay River). With climate change heavily impacting the North, winter road seasons are becoming more limited and unreliable. Nunavut and Nunavik have no road or rail linkages with southern Canada. Both have limited roads linking some communities, and are heavily reliant on the limited summer shipping season for bulk goods and fuel, and on air transportation year-round.

NATIONAL TRADE CORRIDORS FUND

Canada's trade-reliant economy depends on an efficient and reliable transportation system to move goods and people and to remain nationally and globally competitive. The National Trade Corridors Fund is a competitive, merit-based program that invests in projects that address capacity constraints and freight bottlenecks across all modes of transport along Canada's trade corridors to support economic growth across the country. Other key program objectives are to increase the resilience of the Canadian transportation system to a changing climate and ensure it adapts to new technologies and future innovation.

The fund was created in 2017 with a plan to invest \$1.9 billion over 11 years, including \$400 million allocated to projects that address critical transportation needs in the Northwest Territories, Nunavut, and Yukon. Budget 2019 provided an additional \$400 million for projects in Arctic and northern regions, increasing the total funding envelope to \$2.3 billion and the total dedicated funding for Arctic and northern regions to \$800 million.

On October 23, 2020, Transport Canada launched the fund's Arctic and Northern call for proposals to address the transportation needs of Arctic and Northern communities, including safety and economic development. This call will allocate up to \$400 million to transportation infrastructure projects in Canada's Arctic and Northern regions, which include the territories, the Nunatsiavut region in Labrador, the Nunavik region in Quebec, and the Port of Churchill and related assets in northern Manitoba.

By the end of 2020, nearly all of the fund's initial \$1.9 billion allocation was committed to 89 transportation infrastructure projects across the country, leveraging more than \$3.9 billion in total investments by all public and private sector partners. To date, strategic investments have been made to improve the fluidity of the movement of goods in all 4 regional transportation systems.

In **Western Canada**, 38 projects have been awarded \$860 million in funding, for a total investment of \$2.1 billion, to build stronger trade corridors to Asia-Pacific markets. This includes projects to:

- support more fluid gateways at our West Coast ports
- expand inland transportation connections
- better enable producers to reach export position, and
- improve north-south highway corridors

In 2020, Transport Canada announced funding for 5 of these projects, including:

- \$28 million in federal funding, leveraging \$86 million in total investments, for 3 projects to increase export capacity and efficiency of Canadian goods moving through the Port of Vancouver, including:
 - expanding the Ray-Mont Logistics off-dock transload facility in Richmond
 - doubling on-site rail capacity at the Fibreco terminal in North Vancouver
 - improving the Southern Railway of British Columbia's on Annacis Island to enable better access to auto terminals and off-dock facilities
- \$20 million in federal funding, leveraging \$109 million in total investments, for 2 projects at rail terminals in the Alberta Industrial Heartland, including the construction of Cando Rail Services Ltd.'s Sturgeon Terminal and the Alberta Midland Railway Terminal Ltd's Phase 2 expansion project

In **Central Canada**, 22 projects have been awarded more than \$318 million in funding, for a total investment of \$703 million. This includes projects to:

- support increased marine traffic through the Great Lakes and St. Lawrence Seaway System
- reduce delays at border crossings in Ontario, and
- improve fluidity at ports across Quebec and Ontario

In 2020, 2 of these projects were announced. The fund is investing \$40.4 million in federal funding, for a total investment of \$83.7 million towards:

- Trois-Rivières Port Authority's project to increase capacity to transport solid and liquid bulks goods and general cargo, improve the fluidity of current traffic and eliminate bottlenecks, and develop a multimodal platform to efficiently move goods between transportation modes at the Port, and
- City of Montreal's project to implement a traffic management and optimization system in the municipal road corridors adjacent to the Port of Montreal to reduce traffic congestion around Canada's second-largest port

In **Eastern Canada**, 14 projects have been awarded more than \$252 million in funding, for a total investment of \$627 million, to strengthen trade corridors through gateways to Europe, Africa and Asia. This includes projects to:

- improve fluidity at East Coast ports
- expand air cargo capacity at airports, and
- explore options for protecting and sustaining the critical Chignecto Isthmus corridor

In **Northern Canada**, 15 projects have been awarded with more than \$379 million in funding, leveraging total investments of \$528 million. The fund is investing to build resilient transportation corridors connecting Arctic communities and positioning the North for future trade opportunities. This includes projects to:

- support air transportation across Arctic and Northern communities and improve air navigation systems
- help modernize and strengthen the resiliency of highways
- develop climate adaptation studies and data optimization tools, and
- undertake feasibility work to establish an all-season road corridor through the Northwest Territories and Nunavut to the Arctic Ocean

Looking ahead, in 2021 Transport Canada will continue working with proponents to advance funded projects, including those announced in 2020, complete the fund's Arctic and Northern Call for proposals, and begin implementing projects selected under that call. Budget 2021 provided an additional \$1.9 billion in funding over 4 years, starting in 2021-22, to support much-needed enhancements in Canada's roads, rail, and shipping routes, build long-term resilience for the Canadian economy, and support internal trade. Of this new funding, 15 % will be dedicated to improving transportation networks in Canada's North.





ROAD TRANSPORTATION

HIGHLIGHTS

- At the February 2020 meeting of the Council of Ministers Responsible for Transportation and Highway Safety, Ministers approved the release of the new *Strengthening School Bus Safety in Canada* report from the federal, provincial and territorial Task Force on School Bus Safety, which confirms that school buses in Canada have an excellent safety record
- Ministers agreed to continue to work together to strengthen road safety in Canada, emphasizing a collaborative approach among jurisdictions including measures to strengthen commercial motor vehicle safety with electronic logging devices and entry level training in an effort to prevent driver fatigue

DEVELOPMENTS ENHANCING EFFICIENCY

Trucking is keeping Canada's supply chain flowing during this challenging time. The land border between Canada and the US remains closed for all non-essential travel in response to the COVID-19 pandemic. In this context, trucking establishments have been considered critical businesses and truck drivers have been considered essential workers helping to sustain food security, health care, and other critical sectors. Truck drivers are also exempt from the mandatory isolation requirements for individuals entering Canada, which apply to healthy workers providing essential services across the border. Transport Canada has been working with stakeholders and our provincial and territorial counterparts to ensure that truck operations can continue to operate safely and efficiently.

In the first few months of the pandemic, tighter economic conditions and social restrictions translated in reduced demand for goods and services, and hence reduced demand for trucking services, thereby increasing operating expenses and creating cash flow challenges for carriers.

Trucking companies were also reporting significant increases in costs and loss of revenues due to a spike in fore-haul and back-haul empty miles due to demand imbalances. According to the a 2020 survey by the Canadian Trucking Alliance, the industry norm for empty miles had increased from around 10-15% to 30% during the pandemic. Empty back hauls do not generate payload revenue for trucking companies and it results in increased supply chain costs, decreased trucking productivity and profitability and increased environmental impacts. This development may have been acute for northern communities where backhauls to the south were limited and for Canada-US movements.

Finance Canada announced a number of financial assistance programs that were also available to the trucking industry and drivers. These programs included, the Business Credit Availability Program, Canada Emergency Business Account, Canada Emergency Wage Subsidy, and measures to defer income tax payments for businesses. [Learn more about these programs](#)

DEVELOPMENTS ENHANCING SAFETY AND SECURITY

The motor vehicle transportation sector continues to undergo major transformation and Transport Canada's safety and security regime is keeping pace with this transformative change.

There has been a significant downward trend in motor vehicle casualties for a number of decades now in Canada. Since their peak in the mid-1970s, fatalities have decreased by over 2/3 while serious injuries have declined over 60%. This notable progress was achieved despite significant growth in Canada's population (+60%), number of licensed drivers (+122%) and number of registered vehicles (+124%). Safer vehicles, road infrastructure and road user behaviour have all contributed to this greater level of safety.

Over the years, Transport Canada has introduced or updated a significant number of vehicle safety standards and regulations. These include regulations touching on vehicle safety features such as electronic stability control, door lock and door retention, truck anti-lock brakes, steering control systems, head restraints, child restraints, seat anchorage strength, occupant protection in frontal collisions, tires, headlights, rear view mirror visibility, helmet and seatbelt use.

School bus safety

In February 2020, the Council of Ministers Responsible for Transportation and Highway Safety, approved the release of the [Strengthening School Bus Safety in Canada](#) report from the Task Force on School Bus Safety. The task force, comprised of federal, provincial and territorial governments, school bus manufacturers, school board representatives, school bus operators and safety associations, was mandated to review safety standards and operations, both inside and outside the school bus, with an emphasis on seatbelts.

The task force's report includes consensus-based recommendations, informed by existing evidence, and focuses on supporting the bus driver with the driving task and deterring illegally passing motorists. Specifically, the task force recommends that all jurisdictions explore the application of the following safety measures based on their assessed needs:

- extended stop arms and infraction cameras to deter illegally passing motorists
- 360-degree cameras to better detect and protect children around the exterior of the bus, and
- automatic emergency braking to help the driver avoid collisions

In response, Transport Canada committed to begin developing regulations to implement the task force recommendations. This work is underway, and involves research and testing at the Motor Vehicle Test Centre in Blainville, Quebec, on school buses equipped with stop-arm infraction cameras, extended stop arms, exterior 360-degree cameras, and automatic emergency braking. As a first step in the regulatory development process, informal consultations on *Let's Talk Transportation* took place in fall 2020.

In parallel, the department is working with the Government of British Columbia and the Sudbury Student Services Consortium in Ontario to carry out school bus seatbelt pilot projects. These pilots will run for around 1 year, and involve 3 buses per jurisdiction. The seatbelts will be installed in accordance with Transport Canada's 2018 federal safety standards.

Commercial motor vehicle safety

Under the *Motor Vehicle Transport Act*, Transport Canada is responsible for certain operational matters relating to commercial motor vehicle activity (like hours of service, safety ratings). Provinces and territories are responsible for the enforcement of federal motor carrier operational regulations (like hours of service regulations that mitigate risk of fatigue). To advance a cohesive national approach to commercial motor vehicle safety, Transport Canada worked closely with provinces and territories through the Canadian Council of Motor Transport Administrators on measures to strengthen commercial motor vehicle safety, and prevent fatigue.

In January 2019, federal, provincial and territorial governments agreed to finalize a *Technical Standard on Electronic Logging Devices* for commercial carriers, which replace paper-based daily logbooks to reduce the risk of fatigue-related collisions. The standard was initially completed in December 2019 and received formal approval at the February 2020 meeting of the Council of Ministers Responsible for Transportation and Highway Safety. It establishes minimum performance and design specifications for the electronic logging devices, which are largely based on US technical requirements, but adapted to accommodate the Canadian *Hours of Service Regulations*. A [revised version of the Technical Standard](#) was published on October 27, 2020 by the Canadian Council of Motor Transport Administrators.

In June 2019, Transport Canada published amendments to the [Commercial Vehicle Drivers Hours of Service Regulations in Canada Gazette Part II](#), to require the use of electronic logging devices by federally-regulated motor carriers and their drivers, with a coming into force date of June 12, 2021. Electronic logging devices are intended to strengthen road safety in Canada by mitigating the risk of fatigue-related collisions. Electronic logging devices will replace paper-based daily logs, which can be falsified or incomplete, and, in some cases, duplicated or missing. The amendments will yield a number of benefits including:

- better tracking of driver fatigue
- reduced administration costs
- improved compliance and
- greater harmonization with US regulatory requirements

As the regulatory amendments require motor carriers and drivers to only use electronic logging devices certified by accredited certification bodies, Transport Canada partnered with the Standards Council Canada for the implementation of the electronic logging device certification scheme. The council opened the accreditation process on March 18, 2020, and after a rigorous review, [FPInnovations was announced as the first Transport Canada accredited certification body](#) on October 26, 2020. Other organizations are undergoing the accreditation process. The FPInnovations certification process is now well underway, and devices are being tested for compliance with the technical standard.

To further improve commercial motor vehicle safety, Ministers Responsible for Transportation and Highway Safety agreed to build upon and leverage the work undertaken by several jurisdictions to develop a national standard for entry-level training for commercial drivers in Canada through the Canadian Council of Motor Transport Administrators. At their meeting of February 2020, Ministers approved the national standard for entry-level training of commercial motor vehicle drivers, specifically for Class 1 drivers (NSC 16 – Commercial Truck Driver Entry Level Training for Class 1 drivers) which serves as a basis for the entry level training rules and requirements.

Vulnerable road users

In the fall of 2016, the Council of Ministers Responsible for Transportation and Highway Safety mandated the creation of a task force to enable a collaborative process with provinces, territories and stakeholders to consider measures that could improve the safety of pedestrians and cyclists around heavy vehicles. The resulting summary report, [Safety Measures for Cyclists and Pedestrians around Heavy Vehicles – Summary Report](#), captured findings and evidence designed to protect both vulnerable road users and heavy vehicle drivers. The report was approved by the Council of Ministers and published on their website in 2018.

Transport Canada has continued to make significant progress achieving a number of milestones, including tracking best practices and lessons learned from jurisdictional pilot projects that support vulnerable road user safety. To encourage knowledge exchange and potential solutions, a central repository in the form of a website was developed in partnership with Parachute Canada, a well known injury prevention organization and champion of Vision Zero in Canada. This living website will be launched in 2021 and continue to grow as new initiatives, data, technologies become available, providing a resource for road safety stakeholders.

Further, Transport Canada continues to study new technologies such as advanced driver assistance systems and automatic emergency braking to evaluate their performance and determine their potential effectiveness in reducing fatalities, injuries and/or effects of collisions. This work will augment the evidence base, facilitating the development of a vulnerable road user safety regulatory package.

To that end, Transport Canada conducted consultations on these technologies via Transport Canada's *Let's Talk Transportation* portal in the fall of 2020.

The Enhanced Road Safety Transfer Payment Program

Budget 2019 included a new funding program called the Enhanced Road Safety Transfer Payment Program (\$30M over 3 years) to build capacity among provinces/territories and other organizations to support nationally consistent road safety objectives (like measures to address impaired and distracted driving).

The first call for proposals for the program (2019-2020) was launched on December 16, 2019. In total, 22 applications were received, and 22 multi-year projects were approved for a total funding request of around \$8M.

The second call for proposals (2020-2021) was originally planned to launch in March 2020; however, due to the COVID-19 pandemic, the launch was delayed until October 21, 2020. In addition to the provinces, territories, provincial or territorial-owned entities and Canadian Council of Motor Transport Administrators, the second call also included private and public sector organizations, non-profit road safety organizations, academia, and other organizations that take an active role in advancing road safety issues.

Under this call, 45 applications were received and 38 multi-year projects were approved for a total funding request of around \$10M. Approved projects focused on impaired driving due to consumption of drugs or alcohol, distracted driving, commercial drivers, and technological innovation.

Manufacturer's recalls

In 2020, Transport Canada received over 625 safety recall notices from companies, affecting more than 3.6 million vehicles. It is estimated that 25% of recalls go unrepaired, potentially leaving a large population of vehicles operating on Canadian roads with an unrepaired safety problem.

In an effort to provide Canadians with better safety recall information, and improve recall completions, the department conducted pre-regulatory consultations on an amendment to the [Motor Vehicle Safety Regulations](#) that would require companies to provide certain recall information on their websites. In October 2020, the [Recall Information for Canadians](#) consultation was published on Transport Canada's Let's Talk Transportation platform. Amongst other things, it seeks to require high-volume vehicle companies to provide a recall search service using a vehicle identification number (VIN) to provide a list of recalls affecting each vehicle.

The department also continued a pilot project which provides access to the [Transport Canada Vehicle Recalls Database](#) through the Amazon Alexa voice AI platform. This open-source project was initiated to explore innovative ways to communicate information about recalls to Canadians. The [Vehicle Recalls Canada](#) skill can be activated on any Alexa-enabled device.

Connected and automated vehicles

Recognizing that automated vehicles have significant potential to improve safety, in March 2018, Transport Canada amended the *Motor Vehicle Safety Act* to afford greater flexibility in the department's regulatory regime to keep pace with emerging technologies (like modernized or new authorities to grant exemptions, take enforcement action, and modify or suspend outdated regulations). Building on the strengths of a robust and agile safety regime, Transport Canada released a suite of guidance and tools to provide further clarity and direction on automated vehicles:

- [Canada's Safety Framework for Automated and Connected Vehicles](#) released in February 2019, articulates the department's vision for safety and provides access to a broad range of guidance and tools that support the safe testing and deployment of automated and connected vehicles in Canada
- [The Safety Assessment for Automated Driving Systems in Canada](#) also released in February 2019, assists industry in reviewing the safety of highly automated vehicles they intend to manufacture, import, operate or sell in Canada
- [Canada's Vehicle Cyber Security Guidance](#) released in May 2020, provides a set of technology-neutral guiding principles to support industry in strengthening their vehicle cyber resilience. The guidance offers best practices on managing cyber security risks and protecting the entire vehicle ecosystem with safeguards, as well as how to detect, monitor, respond to, and recover from vehicle cyber security events
- the [process for seeking exemptions](#) from the *Canada Motor Vehicle Safety Standards* to support the safe introduction of connected and automated vehicles while encouraging the development and use of innovative technologies

Transport Canada continues to examine opportunities to update its various connected and automated vehicle guidance materials. This includes examining best practices for the safe testing of low speed automated shuttles. Planned updates to our National testing guidelines are expected to discuss these vehicle types as well as other lessons learned from connected and automated vehicle testing in Canada to date, and additional guidance and tools in support of vehicle cyber security are forthcoming.

Transport Canada is also continuing to work with provinces and territories through the Canadian Council Motor Transport Administrators Automated Vehicle Working Group to consider updates to the *Canadian Jurisdictional Guidelines for the Safe Testing and Deployment of Highly Automated Vehicles*. This document outlines a number of administrative considerations for provinces and territories to support the safe testing and deployment of connected and automated vehicles.

These efforts were informed by ongoing research and testing by Transport Canada to assess the performance of connected and automated vehicle technologies. This includes driving simulator research to help develop methods for evaluating the safety of driver interactions with these features and track tests that examine how advanced collision avoidance systems on cars, trucks, and school buses can reduce crashes and help detect and protect vulnerable road users.

With respect to consumer awareness of connected and automated vehicle technologies, Transport Canada undertook a public opinion research study to better understand the Canadian public's attitudes towards, and confidence in emerging vehicle technologies.

Transport Canada has also undertaken a breadth of public outreach efforts on emerging technologies such as updating its web presence and carrying out paid and social media campaigns using, for example, animated videos to help inform Canadians about the benefits and safety considerations of emerging vehicle technologies, including driver assistance technologies currently available on the market ([What you need to know about driver assistance technologies](#)). The social media campaigns were considered a significant success, reaching over 2.4 million viewers, with over 50% of them viewing the entire video.

In September 2020, Transport Canada conducted pre-regulatory consultations to seek views on the inclusion of automatic emergency braking in new vehicles, and the creation of a standard for advanced driver assistance systems, many of which feature low level driving automation (like SAE 1 and 2). The feedback gathered from these consultations will serve to inform future regulations.

DEVELOPMENTS ENHANCING ENVIRONMENTAL PROTECTION

Zero-emission vehicles

In 2020 the Government of Canada continued to take action to accelerate zero-emission vehicle adoption and make progress towards the federal zero-emission vehicles targets of 10% of new light-duty vehicle sales by 2025, 30% by 2030 and 100% by 2040. The 2020 Fall Economic Statement provided further investments in zero-emission vehicles, including an additional \$287 million over 2 years, starting in 2020-21, for the Incentives for Zero-Emission Vehicles (iZEV) Program and an additional \$150 million over 3 years, starting in 2021-22, for infrastructure investments to support increased deployment of charging and hydrogen refuelling stations.



In 2020, the Government of Canada also announced an investment of \$295 million for the Ford Motor Company's Oakville Assembly Complex to be retooled for battery electric vehicle production mid-decade. This will help create economic opportunities for Canadians as the country transition towards widespread use of zero-emission vehicles.

Between the launch of the program in May 2019 and December 2020, over 72,000 Canadians and Canadian businesses benefitted from Transport Canada's iZEV Program. The COVID-19 pandemic slowed down light-duty vehicle sales, including zero-emission vehicle sales in 2020. As a result the program saw an 18% decline in uptake between May 2020 and December 2020, compared to the same period in 2019. Despite lower zero-emission vehicle sales in 2020, the program, along with other federal zero-emission vehicle investments, helped to increase the zero-emission vehicle market share of light-duty vehicles to 3.8%, up from 3.1% in 2019. This reflects the continued strength of zero-emission vehicle demand despite the pandemic.

Heavy-duty Vehicle and Engine Greenhouse Gas Emission Regulations

The Government of Canada continues to implement the *Heavy-duty Vehicle and Engine Greenhouse Gas Emission Regulations*. These regulations set performance-based greenhouse gas emission standards for new on-road heavy-duty vehicles (such as highway tractors, buses and dump trucks) and their engines made in 2014 and later years. In May 2018, the Phase 2 amendments to the regulations were published in the *Canada Gazette*, Part II. These amendments establish more stringent greenhouse gas emission standards that begin with the 2021 model year.

As the US Environmental Protection Agency's standards for trailers hauled by tractors continue to be legally stayed in the US, a first interim order was made on May 27, 2019, delaying the greenhouse gas emission standards for trailers in Canada by 1 year. This was followed by a second interim order made on May 18, 2020, delaying the greenhouse gas emission standards for trailers in Canada by another year, until May 18, 2021. As the second interim order will expire on May 18, 2021, Environment and Climate Change Canada will be proceeding with the development of a third interim order to further delay the trailer standards in Canada by up to 1 additional year.

Other initiatives

The Pan-Canadian Framework on Clean Growth and Climate Change also committed the federal government to work with provinces, territories and industry to explore options for retrofitting heavy-duty vehicles with fuel-saving technologies to reduce greenhouse gas emissions.

In 2018, a federal-provincial-territorial task force was created, which has agreed on a work plan to prepare a report describing the heavy-duty vehicle sector in Canada and the uptake of fuel-saving technologies that can be retrofitted to heavy-duty vehicles, and which are still outside the scope of the new heavy-duty vehicle regulations. In 2020, the task force continued to work together to produce their Phase 1 report. This report provides a detailed examination of the role of retrofits in the heavy duty vehicle sector, including describing the barriers to adoption. This report will be released in 2021.

In addition, under the Strengthened Climate Plan, released in December 2020, the Government of Canada made a number of additional commitments targeting emissions from on-road vehicles, including:

- investing an additional \$150 million over 3 years in charging and refueling stations across Canada, as announced in the 2020 Fall Economic Statement
- working to align Canada's Light-Duty Vehicle regulations with the most stringent performance standards in North America post-2025, whether at the US federal or state level

- working with partners in the year ahead on supply-side policy options to achieve additional reductions from Canada's light-duty vehicle fleet, including regulations and investments to accelerate and expand the consumer availability of zero-emission vehicles in Canada as demand grows
- developing a national active transportation strategy and working to deliver more active transportation options, such as walking trails, cycling paths and other forms of active mobility
- advancing the government's commitment to help procure 5,000 zero-emission public transit buses and school buses, including by leveraging the Canada Infrastructure Bank. To support this goal, the Canada Infrastructure Bank's Growth Plan has earmarked \$1.5 billion to expand and accelerate the adoption of zero emission buses
- improving the efficiency of heavy-duty vehicles standards for post-2025 by aligning with the most stringent standards in North America, whether at the US federal or state level
- conducting stakeholder consultations on measures to increase the supply of, and demand for, medium- and heavy-duty zero-emission vehicles in Canada, to ensure businesses have access to the types of zero-emission vehicles that meet their needs

COVID-19 AND ROAD TRANSPORTATION

Transport Canada, in collaboration with other government departments, industry representatives, provincial and territorial road safety administrators took concrete actions to support the safe movement of essential transportation workers and goods, and to protect Canadians required to travel by road. These actions included:

Coordination and engagement

- Transport Canada held regular calls with provinces and territories through the Canadian Council of Motor Transport Administrators, as well as industry associations and other government departments. These engagement efforts provided an opportunity to identify and work collaboratively to address issues pertaining to commercial motor vehicles as they emerged (for example, logistical challenges posed by the closure of restaurants and rest-stops, and access to personal protective equipment)
- Regular calls were held between Transport Canada and US Department of Transportation officials to identify and address cross-border issues, emphasizing the benefit of joint measures to combat COVID-19

Regulatory and enforcement actions

- When border measures were announced, including the restrictions of non-essential travel between the US and Canada, Transport Canada expedited the approval of Canadian's applications to return to Canada in their US registered vehicles, ensuring Canadians were able to travel home safely and as quickly as possible
- Guidance was also provided to stakeholders regarding potential non-compliance with motor vehicle safety requirements (like defect notification and repairs) due to COVID-19
- To alleviate pressures to the supply chain, Transport Canada issued a [regulatory exemption](#) under the [Commercial Vehicle Drivers Hours of Service Regulations](#), pursuant to the [Motor Vehicle Transport Act](#), to specifically support direct assistance efforts in response to COVID-19. A [Targeted Essential Freight Transport Exemption Template](#) was subsequently developed to support ongoing case-by-case exemptions related to COVID-19

Federal leadership and guidance

Working with other departments, provinces and territories, and industry stakeholders, Transport Canada developed guidance documents and tools outlining measures to help limit the spread of COVID-19 in road transportation, including as it relates to commercial vehicle operations and school bus safety, as well as the use of personal protective equipment in the sector. Notably, this included:

- issuing [Federal safety guidance to protect drivers and limit the spread of COVID-19 in commercial vehicle operations](#), which was first published in April 2020 and updated in August 2020 to reflect current public health guidance
- developing a [template employment confirmation letter](#) for the trucking and automotive industry to support the movement of essential road transportation workers within and across borders, and to facilitate their access to key facilities (like rest areas)
- issuing *Guidance: Considerations Relating to the Use of Face Coverings by Commercial Vehicle Drivers and Motor Carrier, and Intercommunity Bus Passengers* (April 17, 2020)
- issuing [Federal Guidance for School Bus Operations during the COVID-19 Pandemic](#) to protect both student and driver (May 2020)
- issuing [Joint Guidance from Transport Canada and the CSA D250 School Bus Technical Committee](#) for those considering the installation of a driver shield to protect against COVID-19 exposure (May 2020), and
- publishing [COVID-19 measures, updates, and guidance for road issues by Transport Canada](#) online to improve awareness of and accessibility to critical safety information (issued between April and September 2020)

RAIL TRANSPORTATION

HIGHLIGHTS

- Transport Canada launched consultations on its proposal for the regulations that would replace the transitional freight rail reporting provisions introduced by the *Transportation Modernization Act*
- Transport Canada completed the *Passenger Rail Transportation Security Regulations* to strengthen passenger rail transportation security. The regulations were registered on October 6, 2020, and will allow rail companies the flexibility to adopt practices in line with their operational and security risks
- Under a series of memoranda of understanding with the Railway Association of Canada, Transport Canada has been working with the rail industry to address greenhouse gas emissions



DEVELOPMENTS ENHANCING EFFICIENCY

Transportation Information Regulations

In 2020, Transport Canada continued work to develop amendments to the *Transportation Information Regulations* that would build upon the *Transportation Modernization Act's* significant improvements to the transparency of the rail sector, and further enhance the data being reported by Class 1 rail carriers.

Transport Canada has developed a proposal for the collection of enhanced weekly service and performance indicators, as well as detailed waybill, train, and traffic data. Minister Garneau participated in the launch of a round of consultations on this proposal during the Commodity Supply Chain Table meeting on Dec 11, 2020. Transport Canada is now considering the feedback received during those consultations to help finalize the draft regulation.

VIA high frequency rail

The government announced in June 2019 that \$71.1 million would be made available to continue to explore VIA Rail's high frequency rail proposal. In September, a joint project office was created by VIA Rail and the Canada Infrastructure Bank to further explore VIA Rail's proposal for dedicated tracks and high-frequency rail in the Toronto-Quebec City corridor. The work undertaken by the office is focusing on:

- finalizing legal and regulatory work related to safety and launching the environmental assessment
- consulting with stakeholders and Indigenous communities
- examining required land and track acquisition, and
- completing the technical, financial and commercial analysis required for an investment decision on high frequency rail

Since its creation in 2019, the office has significantly advanced its work in these key areas and outcomes will be integral to informing future government decisions on high frequency rail. In December 2018, a contract was awarded to build new trains, which are scheduled to enter into service between 2022 and 2024.

DEVELOPMENTS ENHANCING SAFETY AND SECURITY

Railways safety initiatives

Over the course of 2020, Transport Canada continued to advance a number of initiatives to enhance the safety of railway operations, employees and Canadians living near railways.

Following the derailment near Guernsey, Saskatchewan, Transport Canada issued a series of Ministerial Orders slowing down trains carrying large quantities of dangerous goods and ordered revisions to the *Rules respecting Key Trains and Key Routes and Rules respecting Track Safety* to improve their track maintenance and safety procedures.

Requirements were also strengthened around the securement of trains on mountain grades with the addition of Rule 66 to the *Canadian Rail Operating Rules*.

On September 2, 2020, the Minister of Transport announced the publication of the final *Locomotive Voice and Video Recorder Regulations* in *Canada Gazette*, Part II, that specify the technical requirements for rail companies to install these devices on board their locomotives by September 2, 2022. Locomotive voice and video recorders provide accident investigators with insight into the sequence of events leading up to a rail accident (like crew communications and actions).

The updated *Duty/Rest Rules for Operating Employees* were published in November 2020, setting new requirements to target railway operator fatigue, including for the length of duty period, total work hours, rest periods, time away from work, and the development of fatigue management plans. The *Duty/Rest Rules for Operating Employees* were developed by Transport Canada in consultation with industry and reflect the evolution of the scientific understanding of fatigue and its role in rail safety.

The department also continued its work with the provinces to renew and update the agreements to provide inspection services for provincially-regulated railways. By the end of 2020, renewed agreements had been signed with New Brunswick, Nova Scotia, Manitoba, Newfoundland and Labrador, and Quebec.

Budget 2019 provided \$85M over 4 years for the Rail Safety Improvement Program to:

- expand the list of eligible recipients and broaden the scope of projects that can be funded to enhance rail safety
- fund rail safety improvements that support measures to improve public safety at rail property and rail lines (both federally and provincially regulated)
- deliver a national public information and education campaign dedicated to the reduction of railway grade crossing collisions and trespassing incidents on railway property

Proposed Passenger Rail Transportation Security Regulations

In order to strengthen Canada's security posture for passenger rail transportation, Transport Canada developed the *Passenger Rail Transportation Security Regulations*, made pursuant to the *Railway Safety Act*. These regulations, developed in consultation with the railway industry and its association, were designed using a management-based approach that requires passenger and host railway companies to proactively engage in security planning processes and manage security risks. Moreover, the regulations were designed to provide regulated companies with the flexibility to adopt security practices and measures that are tailored to their operations and proportionate to their security risks. The Regulations were registered on October 6, 2020.

The department is employing a phased-in approach to allow railway companies the time to implement the regulations.

Transportation of Dangerous Goods by Rail Security Regulations

In order to enhance the security of the transportation of dangerous goods by rail in Canada, Transport Canada has introduced the *Transportation of Dangerous Goods by Rail Security Regulations*. These regulations were published in the *Canada Gazette*, Part II on May 15, 2019. Transport Canada has followed a phased-approach to implementation and as of May 15, 2019, all of the regulatory requirements have come into force.



These regulations apply to railway carriers and railway loaders that handle, offer for transport, or transport dangerous goods in a railway vehicle and require railway carriers and railway loaders to proactively engage in security planning processes and managing security risks.

Transport Canada has developed the Transportation of Dangerous Goods by Rail Security Oversight Program for these new regulations. The new oversight program was implemented at the beginning of the new fiscal year on April 1, 2020.

A key component of the new regulatory program is for railway carriers, and railway loaders to develop and implement a security plan as set out in Schedule 1. Between April 1, 2020 and December 31, 2020, the Intermodal Surface Security Oversight group reviewed 96 security plans of both railway carriers and railway loaders. The oversight program will continue to expand to further inspection types, particularly additional on-site oversight inspection activities throughout 2021.

[More on transporting dangerous goods by rail in this report](#)

DEVELOPMENTS ENHANCING ENVIRONMENTAL PROTECTION

Transportation by rail contributes to the efficiency of Canada's transportation network by reducing congestion and wear-and-tear on roads and highways. A 100-car freight train carrying 10,000 tonnes of goods can replace 300 trucks. Railways can also play an important role in supporting the Government's 2030 greenhouse gas emissions reduction goal.

Under a series of memoranda of understanding (MOU) with the Railway Association of Canada, Transport Canada has been working with the rail industry to address greenhouse gas emissions.

Over the 2011 to 2017 MOU period, greenhouse gas emission intensity (kg carbon dioxide per 1,000 revenue tonne kilometres) from Class 1 freight and intercity passenger operations fell by 17% and 20% respectively, compared to the 2010 baseline year. These reductions occurred despite an increase in both freight traffic (360 to 430 billion revenue tonne kilometers) and the number of intercity passengers (4.46 to 4.65 million). Over the same period, regional and shortline greenhouse gas emissions intensity decreased by 3.6% narrowly missing the 2017 target by 0.7%.

The Railway Association of Canada and Transport Canada signed a renewed MOU on March 20, 2019 to cover 2018-2022. This MOU ensures that emissions intensity levels will continue to be tracked through annual reporting. It includes new greenhouse gas emissions intensity reduction targets for the MOU period, including a 6% reduction for each of Class 1 freight and intercity passenger, and a 3% reduction for regional and shortlines. It also calls for the development of a pathway document for aligning government and industry efforts to reduce emissions produced by the railway sector.

COVID-19 AND INTERMODAL SURFACE SECURITY OVERSIGHT

At times of eased restrictions, on-site inspections of railway sites and facilities and inspections at international bridge and tunnel facilities were successfully completed. The combination of approaches resulted in striking a balance between Canada's rail and international bridge and tunnel facility security oversight requirements and the safety of both industry staff and the inspectorate working on the ground. As a result, despite the impact of COVID-19, an 80% completion rate of the group's oversight program was achieved.

MARINE TRANSPORTATION

HIGHLIGHTS

- Transport Canada repealed 9 existing regulations related to navigation safety and radio communications and consolidate them into 1 new regulation, the *Navigation Safety Regulations, 2020*
 - The Marine Electronic Document Validation tool was launched. The tool provides a new online method of verifying the validity of electronic documents issued to Canadian vessels, ports or facilities
 - For a 4th year, Transport Canada implemented vessel traffic management measures in the Gulf of St. Lawrence to reduce the risk of vessel collisions with North Atlantic right whales
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DEVELOPMENTS ENHANCING EFFICIENCY AND COMPETITIVENESS

Ports modernization review

Transport Canada continued to advance the ports modernization review, launched in spring 2018, with an aim to strengthen Canada's port system and improve the efficiency of Canada Port Authorities as key gateways and to support economic growth.

In fall 2020, Transport Canada released a *What We Heard Report* that summarized feedback collected during the review's engagement process. Transport Canada conducted detailed research and analysis, and is incorporating emerging impacts to the Canadian economy and supply chain, such as COVID-19. Once completed, the Review will help update governance structures that promote investments in ports.

In addition, Transport Canada continued its review of the St. Lawrence Seaway, first announced in 2017. This review examined the Seaway's competitiveness and sustainability, its management structure, and opportunities for further development. A *What We Heard Report* was released in October 2020, summarizing the feedback collected during the review process. The review's findings will help ensure the Seaway continues to be positioned as a critical transportation corridor for North America.

Marine liability

In response to a recommendation in the Canada Energy Regulator's Reconsideration Report on the Trans Mountain Expansion Project, in 2020 Transport Canada engaged with Indigenous and non-Indigenous communities across Canada to understand the non-economic impacts of oil spills at the community level. Engagement continued until March 31, 2021. Transport Canada sent information packages to over 280 Indigenous communities, over 65 Indigenous organizations and over 190 non-Indigenous communities, municipalities, and organizations to help facilitate their participation in the review. Transport Canada also participated in around 40 engagement sessions with communities from across Canada.

In addition, in 2020 Transport Canada consulted stakeholders in the maritime law, insurance, and shipping sectors regarding ways to clarify and modernize the legal liability rules that govern the carriage of marine cargo. The goal is to ensure that Canada is consistent with its major trading partners and keeps up with increasingly digital ways of working. In connection with these consultations, section 45 of the *Marine Liability Act*, which would have given force of law to the Hamburg Rules and was never brought into force was repealed as part of the annual *Statutes Repeal Act* process. This review will continue in 2021.

DEVELOPMENTS ENHANCING SAFETY AND SECURITY

Navigation Safety Regulations

In support of further enhancing marine safety, Transport Canada published the *Regulations Amending the Navigation Safety Regulations* on April 17, 2019 to demonstrate its commitment to enhancing marine safety. The objective of this regulatory initiative was to amend Transport Canada's existing *Navigation Safety Regulations* to expand the automatic identification system carriage requirements to a wider category of passenger vessels for the purpose of enhancing marine safety and supporting the protection and recovery of the Southern Resident killer whales. Additional vessels that did not previously carry an automatic identification system under the *Navigation Safety Regulations* are required to carry one as of April, 26 2021 with the recent publication of the *Navigation Safety Regulations, 2020*.

Another regulatory initiative, which is aimed at further enhancing marine safety, in terms of collision avoidance and search and rescue efforts, is the *Navigation Safety Regulations, 2020* initiative which was published in the *Canada Gazette*, Part II, on October, 28 2020. These Regulations repeal 9 existing regulations related to navigation safety and radio communications and consolidate them into one new regulation, the *Navigation Safety Regulations, 2020*. This also transfers most of the requirements relating to navigation safety from the *Steering Appliances and Equipment Regulations* to the new regulations.

Along with this consolidation, the new regulation:

- expanded carriage requirements for distress alerting and communication equipment
- expanded carriage requirements for equipment designed to improve the situational awareness of vessel operators
- incorporated by reference chapters IV and V of the *International Convention for the Safety of Life at Sea (SOLAS)*
- brought the regulatory regime in line with the *Canada Shipping Act, 2001*
- responded to recommendations made by the Transportation Safety Board, the Chief Cor1r for the *Leviathan II* marine incident, and the Auditor General, and
- addressed concerns raised by the Standing Joint Committee for the Scrutiny of Regulations regarding the *Charts and Nautical Publications, 1995*

Vessel Safety Certificates Regulations

Transport Canada is addressing various issues through the replacement of the *Vessel Certificates Regulations* with the *Vessel Safety Certificates Regulations*. The new regulations are aligned with statutory changes made when the *Canada Shipping Act, 2001* replaced the former *Canada Shipping Act*, and implement various practices which had been adopted by the industry before the introduction of the new regulations.

This regulatory project also follows through on the priorities of Transport Canada to modernize regulations and legislation relevant to the transportation sector, and to modernize the Canadian inspection regime. The new regulations clarify and update existing vessel safety certificate and details of inspection requirements and voyage classification definitions. They also update schedules for sheltered waters. In addition, as part of this regulatory project, consequential amendments aim to increase regulatory flexibility, harmonization and simplicity for stakeholders and government.

Pilotage Act

Since June 2019, Transport Canada has been implementing the amended provisions of the *Pilotage Act*, which are being brought into force in 4 stages. The first set of provisions came into force in August 2019, the second in March 2020, and the third in June 2020. Transport Canada continues to work with Pilotage Authorities and system users to develop the new pilotage regulatory framework, which are expected to be in place in early 2022.

Marine Safety Management System Regulations

Another effort to enhance marine safety is demonstrated in the proposed amendments to the *Safety Management Regulations* for the marine sector.

The objectives of this proposed regulatory initiative are:

- reducing the number of marine occurrences in the operation of the Canadian domestic fleet, therefore limiting the consequence of such accidents which may include deaths and injuries, marine pollution, repair costs, downtimes, business financial losses and serious consequences for the health and welfare of seafarers
- improving consistency in Canadian waters between vessels operating under international conventions and those operating under domestic requirements. Introducing the requirement to have a safety management system on the vast majority of the Canadian fleet will remove inconsistency, ensuring the majority of vessels operating in Canadian waters are subject to similar requirements regarding safety procedures and practices, helping reduce occurrences and their consequences
- creating a culture of safety in the marine industry by requiring that a company examine the risks related to its operations, analyze them, develop mitigating measures, and put these in place through procedures including verification and continuous improvement
- finally, these regulations will contribute to Transport Canada's mandate of making the Canadian transportation system safe, secure, efficient and environmentally responsible

Modernization initiative – Marine Electronic Document Validation Tool

In 2020, Transport Canada launched the Marine Electronic Document Validation tool. The tool provides a new online method of verifying the validity of electronic documents issued to Canadian vessels, ports or facilities by Transport Canada's Marine Safety and Security Directorate.

Seafarer Welfare Board

In November 2020 the National Seafarers' Welfare Board was created in partnership with Canadian marine industry stakeholders and seafarer organizations to facilitate and support appropriate seafarer welfare both at home and abroad. The board is comprised of ship owners, seafarer welfare and labour representatives, port representatives and government representatives.

Engaging Canadians

Transport Canada continues to improve Canada's marine safety and security system by engaging with people and organizations and receiving ongoing input through the [Let's Talk – Marine Safety and Security Consultations](#) webpage.

Developments to the Navigation Protection Program

In August 2019, amendments to the *Navigation Protection Act* came into force, which restored lost protections for navigable waters, incorporated modern safeguards, and renamed the legislation the *Canadian Navigable Waters Act*.

The *Canadian Navigable Waters Act* helps the Government of Canada better protect the public's right to travel Canada's navigable waters and restores

public trust while providing shared benefits to Canadians, including Indigenous peoples and businesses. A key purpose of the Act is to regulate "works" that may interfere with navigation in navigable waters. Works include any structure, device or thing — temporary or permanent — made by humans that is in, on, over, under, through or across any navigable water. They can be small works like docks or large works like dams.

Following the coming into force of the *Canadian Navigable Waters Act*, Transport Canada:

- published the Minister of Transport's [Major Works Order](#), which designates the types of works that are likely to substantially interfere with navigation, and for which owners must apply for an approval on any navigable water
- published the Minister of Transport's [Order Amending the Schedule to the Canadian Navigable Waters Act](#), which added 25 navigable waters to the schedule of the Act, including eligible heritage and wild and free-flowing rivers
- released a new tool, called the [Common Project Search](#), a registry where Canadians can access information and provide comments on proposed works on navigable waters in their communities
- released a new [project review tool](#) for owners of works to understand their obligations under the Act, and an [online submission site](#) for owners to submit applications for approval



In 2019, Transport Canada's Navigation Protection Program processed 1,798 applications for approval, conducted 1,119 compliance verifications, and took 131 enforcement actions pursuant to the Act.

Finally, as a core member of the Marine Security Operations Centres and chair of its oversight committees, Transport Canada continues to partner with other federal government departments and agencies to leverage our combined capacity and authority to enhance Canada's marine security.

DEVELOPMENTS ENHANCING ENVIRONMENTAL PROTECTION

Reducing sulphur emissions

Since January 1 2015, vessels in Canadian waters and within the North American Emission Control Area must use fuel with a maximum sulphur content of 0.1%, or technology that results in equivalent sulphur emissions, to reduce air pollutants (for example, exhaust gas cleaning systems). In the Great Lakes-St. Lawrence Seaway system, progress continued under the Fleet Averaging Regulatory Regime to reduce sulphur emissions from domestic vessels. The fleet averaging regulatory regime program concluded on December 31, 2020.

Ballast Water Regulations

Ballast water, which is important for the safety and stability of vessels, can also introduce aquatic invasive species (like zebra mussels) into receiving waters. In 2010, Canada acceded to *the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004*.

In 2019, new ballast water regulations were published for public comment in the *Canada Gazette*. These regulations, which are intended to give effect to Canada's obligations under the Convention and further protect Canadian waters from the introduction and spread of aquatic invasive species and pathogens, would apply to Canadian vessels and vessels in waters under Canadian jurisdiction.

Vessels subject to the regulations would be required to comply with a number of new provisions, including a performance standard that would limit the concentration of discharged organisms and the development and implementation of a ballast water management plan. In 2020, the department continued to assess the input received through the public consultation process, and submitted public comments to the US Environmental Protection Agency and Federal Maritime Commission regarding regulatory compatibility on the Great Lakes.

Environmental Response Regulations

In addition, Transport Canada published the *Environmental Response Regulations in Canada Gazette Part II* on July 10, 2019. These regulations were developed to include additional measures for prescribed oil handling facilities. The objective is to improve the effectiveness of Canada's Oil Spill Preparedness and Response Regime for prescribed vessels and oil handling facilities while transferring oil to and from vessels. Enhanced prevention and planning activities by the oil handling facilities, in conjunction with increased compliance and enforcement by Transport Canada, provides a state of readiness.

The regime's improvements will better prepare oil handling facilities of prescribed classes during an oil spill incident with new Oceans Protection Plan requirements, which will mitigate the risks of polluting shorelines and sensitive areas, fundamental for Indigenous and local coastal communities.

DEVELOPMENTS ADDRESSING THE RECOVERY OF CANADA'S WHALE POPULATIONS

Southern Resident killer whales

Adapting seasonal measures introduced in 2019, Transport Canada implemented a suite of enhanced management measures to lessen the impacts of acoustic and physical disturbance from vessels on Southern Resident killer whales through the issuance of an interim order under the *Canada Shipping Act, 2001*. These measures included ([see map below](#)):

- The implementation of 3 mandatory Interim Sanctuary Zones from June 1 to November 30, prohibiting vessels from entering designated zones at Swiftsure Bank and off Pender and Saturna Islands, areas identified as important for Southern Resident killer whales
- A mandatory approach distance of 400m for all killer whales in Southern Resident killer whales critical habitat year-round. Whale watching and ecotourism companies that entered into a sustainable whale watching agreement were authorized by the Minister of Transport to view non-Southern Resident killer whales at a distance up to 200m, and agreed to not offer or promote whale watching tours of Southern Resident killer whales.

Map of South Coast of Vancouver Island, British Columbia



In addition to these mandatory measures, voluntary measures to protect Southern Resident killer whales were implemented, including a 7 knot go-slow zone within 1 km of Southern Resident killer whales, turning off echosounders when not in use, and turning engines to neutral idle when within 400 m of a killer whale. Transport Canada increased public awareness of risks to Southern Resident killer whales and best practices when boating around whales through social media marketing, partnerships with outreach and education organizations, and other public engagement activities.

Transport Canada also continues to partner with the Vancouver Fraser Port Authority's ECHO Program to identify and implement measures to reduce underwater noise from large commercial vessel traffic. Voluntary commercial vessel slowdowns first implemented in 2017 now include both Haro Strait and Boundary Pass and, new in 2020, a trial slowdown at Swiftsure Bank. The voluntary lateral displacement of inshore vessel traffic in the Strait of Juan de Fuca was implemented for a second year to move traffic away from key foraging areas.

Transport Canada and Fisheries and Oceans Canada continued implementation of a Conservation Agreement under the *Species at Risk Act* with the various industry partners involved in the ECHO Program. Participation of industry partners continued to increase and the ECHO Program advanced research, development, and monitoring of measures to reduce the contribution of large commercial vessels to the threat of acoustic and physical disturbance to Southern Resident killer whales. Of the 36 measures and sub-measures outlined in the agreement:

- 26 measures (81%) were completed
- work on 5 measures (18%) is continues into year 2 and
- 1 measure (3%) is ongoing throughout the duration of the agreement

In 2020, Transport Canada laid the groundwork to launch a National Working Group to examine the issue of underwater vessel noise reduction targets. Subject-matter experts and marine stakeholders from across Canada, as well as the international community, will provide advice to the Government of Canada on a feasible target for source-noise reductions from a range of vessel classes.

As part of the Government of Canada's commitment to address underwater vessel noise and protect the marine environment, the Quiet Vessel Initiative is continuing to develop scientific evidence about the most effective approaches to quieting vessels as part of a long-term solution to underwater radiated noise.

The Quiet Vessel Initiative is enabling Transport Canada to address knowledge gaps on underwater noise by funding the assessment of the most promising technologies, vessel designs, retrofits and operational practices to test "quiet" vessels. The results generated through the Quiet Vessel Initiative will support Canada's efforts to influence the development of international quiet vessel design standards through the International Maritime Organization.

Globally, Canada is leading on the issue of underwater noise from shipping by spearheading underwater vessel noise efforts at the International Maritime Organization, including through hosting workshops and participating in international conferences. A policy workshop held in Vancouver in November 2019 resulted in the submission of a new work output proposal to the Marine Environment Protection Committee of the International Maritime Organization.

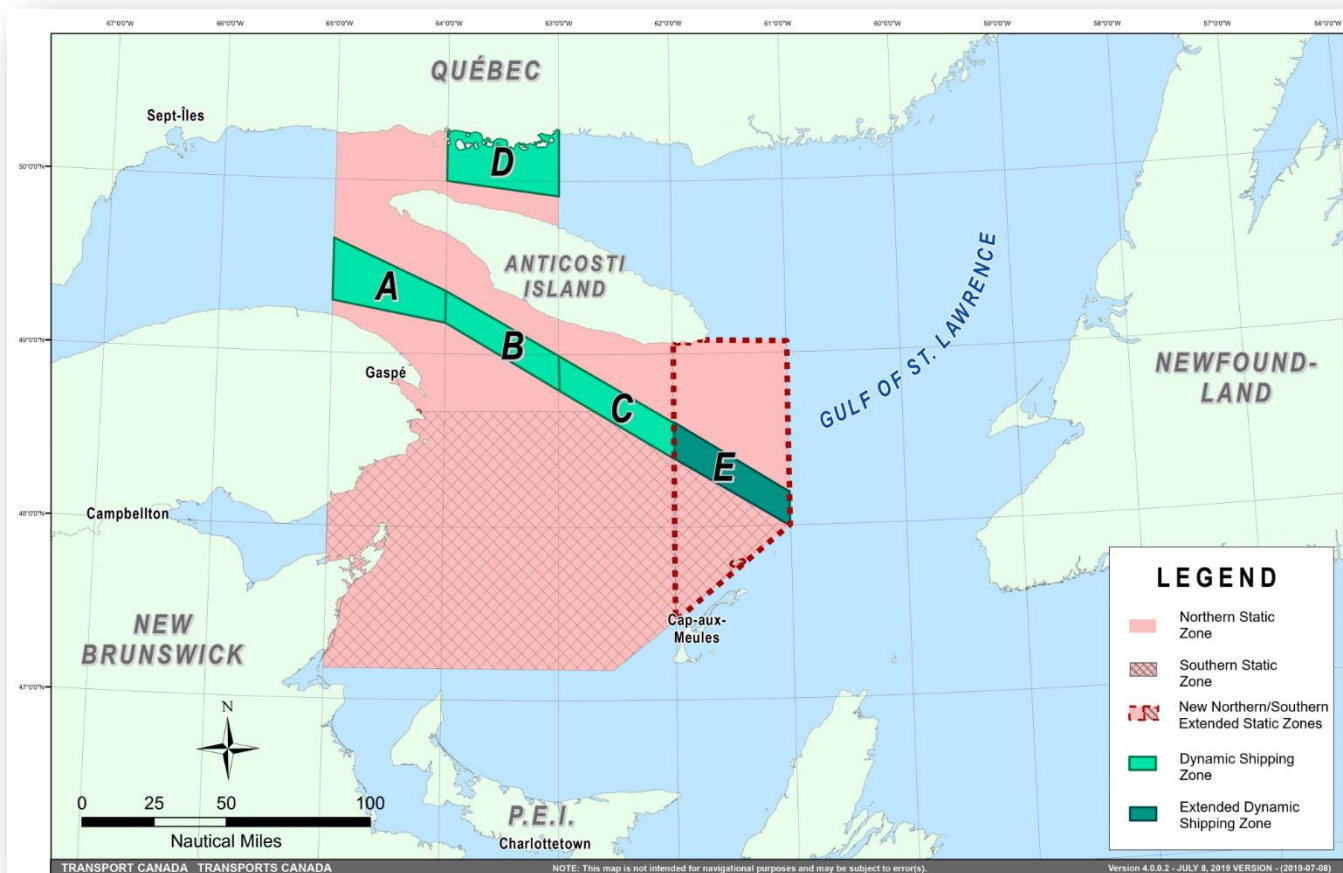
The new work output proposal, co-sponsored by Australia and the US, is set to be considered at the spring 2021 meeting of the Committee. The proposal asks the committee to review the existing International Maritime Organization guidelines on underwater noise and propose next steps to improving actions to reduce underwater noise from shipping. Canada is also leading and inputting into various international research projects focused on quiet ship technologies, understanding barriers to the implementation of measures and the impact of underwater noise in the Arctic.

North Atlantic right whales

For a 4th year, from April 28 to November 15, Transport Canada implemented vessel traffic management measures in the Gulf of St. Lawrence to reduce the risk of vessel collisions with North Atlantic right whales. The Department put a speed restriction in place for vessels greater than 13 m in length travelling through much of the Gulf of St. Lawrence. To minimize impact on the marine industry, vessels were allowed to travel at safe operational speeds in the shipping lanes north and south of Anticosti Island when no North Atlantic right whales were detected. The department also introduced in 2020:

- A trial voluntary slowdown in the Cabot Strait in the spring and fall when larger numbers of North Atlantic right whales are migrating in or out of the Gulf
- A mandatory restricted area to protect larger numbers of North Atlantic right whales gathering in and near the Shediac Valley in the summer months. In this restricted area navigation was prohibited for all vessels greater than 13m in length with certain exemptions

To monitor for North Atlantic right whales, Transport Canada also introduced a drone and an acoustic underwater glider to support the National Aerial Surveillance Program aircraft. In 2020, the program flew a total of 304.1 flight hours and the drone flew a total of 72 hours in support of North Atlantic right whales monitoring. With 8,784 vessel movements through the vessel traffic management areas, only 4 penalties were issued, resulting in a compliance rate of greater than 99.9%.



Ongoing work with other government departments, industry, non-governmental organizations, academia, Indigenous groups, and international partners is key to the continued success of measures under the Whales Initiative.

COVID-19 AND THE MARINE INDUSTRY

Transport Canada has implemented a series of measures to minimize the risk of COVID-19 spread, and to maintain the essential movement of goods and people, while balancing the safety of the marine sector, including:

- extending the ban on pleasure craft in Canadian Arctic waters and on cruise vessels in all Canadian waters until February 28, 2022
- prohibiting passenger vessels certified to carry more than 12 passengers performing non-essential activities from entering Arctic coastal waters, including Nunatsiavut, Nunavik and the Labrador Coast until February 28, 2022
- requiring essential passenger vessels and ferries to follow local public health guidance and protocols, and follow mitigation measures to reduce the spread of COVID-19 and prevent future outbreaks
- also requiring essential passenger vessels and ferries to either reduce their carriage capacity by 50% or implement alternative measures, outlined by the Public Health Agency of Canada, to prevent the spread of COVID-19 among passengers and crew
- extending the validity period of certain marine personnel certificates, to accommodate workers who may not have access to renewal processes, or refresher training due to mitigation measures surrounding COVID-19
- issuing a Ship Safety Bulletin that provides guidance regarding the mobility of asymptomatic marine sector workers as it pertains to crew changes and shore leave during the COVID-19 pandemic
- adapting the procedure for inspection of domestic vessel to reduce the risk of inspectors contracting COVID-19 and introducing remote inspections when possible to extend validity of certificates or renew certificates
- issuing a special Marine Security Notification that provides guidance regarding the reporting of travelers on board vessels that report having symptoms of COVID-19
- through the Marine Security Operations Centres, facilitating the reporting of travelers on board vessels that report having symptoms of COVID-19
- in collaboration with core marine security partners and federal public health officials, drafting the national Maritime Strategic Plan that became part of the broader Government of Canada Plan
- hosting a series of stakeholder engagement opportunities with industry stakeholders and federal partners to advise the marine industry of emerging public health issues affecting the marine transportation system and leading a Tiger Team to synchronize processes for the reporting and responding to potential COVID-19 incidents on board vessels arriving in Canada

OCEANS PROTECTION PLAN

The Government of Canada continues to deliver initiatives under the \$1.5 billion national Oceans Protection Plan to protect Canada's coasts for future generations while growing the economy. In partnership with Indigenous and coastal communities, this initiative is developing a world-leading marine safety system to meet Canada's unique needs, and enhance our ability to prevent and improve response to marine pollution incidents, from coast to coast to coast.

BUILDING MEANINGFUL PARTNERSHIPS

Transport Canada continued to engage and partner with Indigenous Peoples, coastal communities, marine stakeholders, and provinces and territories. Even though the pandemic and the working environment resulted in challenges for everyone, remote engagement still occurred when possible. As of December 2020 there have been over 1,450 engagement sessions held including over 1,075 with multiple Indigenous groups, since 2017.

Transport Canada's Oceans Protection Plan Dialogue Forum took place in January 2020 in Vancouver. It was the seventh dialogue forum held since 2017 and included 200 registrants. Forum participants were largely external to the federal government, with 115 representing 85 organizations. These included environmental non-governmental organizations, local government, and the marine and shipping industries.

Additionally, Transport Canada has been providing funding to support Indigenous and local communities through programs, such as the [Indigenous and Local Communities Engagement and Partnership Program](#) for long-term activities and the [Community Participation Funding Program](#) for short term activities.

Throughout 2020, the Oceans Protection Plan relied on virtual platforms to continue engagement with Indigenous communities and organizations and marine stakeholders. The success of Oceans Protection Plan virtual engagement has been in the ability to respond to the needs of Indigenous partners and other stakeholders, especially in remote locations with limited capacity and digital support, by adjusting and being flexible in our engagement approaches, especially as many Indigenous communities are dealing with pressing COVID health concerns.

ENHANCED MARITIME SITUATIONAL AWARENESS

Transport Canada has partnered with 13 Indigenous communities and organizations across Canada for a [pilot project](#) to test a new user-friendly, web-based system that increases access to a range of maritime information, including accurate near real-time marine traffic information. Transport Canada is currently expanding the system user base to other marine partners (for example: non-governmental organizations, academia, science organizations, other government departments, etc.) in order to support maritime awareness needs and seek perspectives on system functionality.

Contribution funding was also provided to support these pilots with Indigenous communities through the Program to Enhance Situational Awareness.

MARINE SAFETY EQUIPMENT AND TRAINING PROGRAM

The [Marine Safety Equipment and Training](#) is part of the Government of Canada's commitment to improve safety for Indigenous vessels that are active along the Trans Mountain Expansion Project marine shipping route in British Columbia. The program responds to the concerns raised regarding the safety of Indigenous mariners who may face increased interactions with larger vessels, including interactions faced while pursuing traditional activities such as fishing and harvesting. The program will provide funding for equipment and training to 29 eligible Indigenous communities to improve vessel safety and build an understanding of safety on the water.

NORTHERN LOW-IMPACT SHIPPING CORRIDORS

This initiative aims to develop a governance framework to address socio-economic impacts related to shipping in the Arctic, identify priority areas in order to minimize potential effects to wildlife, and respect culturally and ecologically sensitive areas in the North.

In 2019, Transport Canada, and the Canadian Coast Guard completed the first round of engagement sessions with territorial, provincial, Inuit and Indigenous governments, land-claim organizations, industry, academic and non-governmental organizations. The focus of these sessions was to establish partnerships and have preliminary discussions on governance and priority geographic areas along corridor routes.

Phase II engagement activities will include in-depth discussions about what a governance framework could look like, and the Canadian Hydrographic Service will be involved in targeted discussions on sensitive geographic areas. The outcomes of these engagement sessions will help inform policy development.

ANCHORAGES INITIATIVE

The goal for managing marine traffic and anchorages in particular is one where commercial shipping is conducted safely for the benefit of all Canadians, while seeking to minimize the impact to the marine environment and surrounding communities. The Anchorages Initiative is creating a framework to manage anchorages outside of public ports to reduce anchorage use and transits by commercial vessels as well as to ensure compliance with a formal code of conduct.

The *Interim Protocol for the Use of Southern British Columbia Anchorages* was introduced in 2018 to address stakeholder concerns and remains in effect, as work on this complex issue continues. The Interim Protocol includes voluntary measures to balance the use of anchorage locations outside of ports and mitigate disturbances to residents from the light and noise of ships at anchor. A key part of this work includes continuing to engage with Indigenous peoples, coastal communities and marine stakeholders on managing anchorages outside of public ports in southern British Columbia.

OIL TANKER MORATORIUM ACT

The *Oil Tanker Moratorium Act* (2019) continues to provide an unprecedented level of coastal protection in northern British Columbia. The Act prohibits oil tankers carrying more than 12,500 metric tons of crude oil or persistent oil products as cargo from stopping, loading or unloading at ports or marine installations in the moratorium area, which covers the area from the Canada/US border in the north, down to the point on British Columbia's mainland across from the northern tip of Vancouver Island, including Haida Gwaii.

CUMULATIVE EFFECTS OF MARINE SHIPPING

Transport Canada collaborated with Indigenous Nations to identify valued components for cumulative effects assessments in 4 pilot sites under the [Cumulative Effects of Marine Shipping initiative](#). Transport Canada initiated development of a draft national framework for cumulative effects assessments, after collaborating with Indigenous partners, academic experts, and stakeholders.

Transport Canada has initiated regional cumulative effects of marine shipping assessments in six pilot sites across the country, while working with Indigenous peoples, local stakeholders and coastal communities. This work will inform a National Framework for Assessing the Cumulative Effects of Marine Shipping; a draft version of this Framework was posted for public comment through Fall 2020, Winter 2021. Through 3 years of engagement, much information has been gathered, including marine vessel activities and resulting stressors of concern.

PROACTIVE VESSEL MANAGEMENT

Partnerships with a number of Indigenous Nations and organizations in British Columbia and the Arctic to launch 5 pilot projects for the [Proactive Vessel Management](#) initiative were developed. Through these projects, voluntary measures are being developed to address vessel traffic issues and conflicts through collaboration with the marine industry and other stakeholders. Lessons learned from the pilot projects will feed into the ongoing co-development of a draft national framework.

IMPROVING DRIFT PREDICTION AND NEAR-SHORE MODELLING

The Government of Canada is developing and refining new high resolution hydrodynamic models for accurate prediction of ocean characteristics, including surface currents, water level, temperature, and salinity within six high priority ports. These ocean models will allow the Government of Canada to accurately track spills and predict their path and fate, enhancing the protection of coastal communities.

Natural Resources Canada's oil spill science program has progressed our understanding of oil fate and behaviour, as well as natural degradation pathways, by developing new methodologies and conducting tests jointly with national and international partners.

SAFETY EQUIPMENT AND BASIC MARINE INFRASTRUCTURE FOR NORTHERN COMMUNITIES INITIATIVE

This initiative had up to \$94.3M over 5 years (from 2017-18 to 2021-22) to improve the safety and efficiency of resupply operations in northern communities. Two calls for proposals were conducted respectively in 2018 and 2020, committing \$91M in funding for projects in the Northwest Territories, Nunavut, Nunavik and Nunatsiavut. Projects include warehouses to secure cargo, sealift ramps, mooring bollards, and new infrastructure to improve petroleum resupply operations.

MARINE TRAINING PROGRAM

The [Marine Training Program](#) is a contribution program that aims to facilitate access to marine training for underrepresented groups such as women, Northerners, and Inuit and Indigenous Peoples, by supporting the expansion of traditional learning, e-learning and blended learning programs, and enhance the infrastructure of Canada's marine training schools. The funding also promotes public awareness of marine training and career opportunities to encourage underrepresented groups to participate in the marine industry. The 3 funded schools under the program have increased accessibility and flexibility to suit unique learner needs by:

- strengthening course offerings
- adding community-based training
- developing marine training programs that reflect Traditional Knowledge, culturally appropriate material, and the learning needs of isolated and remote coastal communities, and
- offering bursaries

Due to the COVID-19 situation, the Northern component project's training has been suspended since the start of March 2020. For the other 2 projects under the Southern component, a number of courses have continued online but all the practical training was postponed. Some practical training was able to resume in late fall 2020 by reducing class sizes. Transport Canada continues to monitor the situation as it evolves and will adjust the activities and funding accordingly.

NATIONAL AERIAL SURVEILLANCE PROGRAM

Under the [National Aerial Surveillance Program \(NASP\)](#), Transport Canada conducted 305.3 hours of aerial surveillance between April 2019 and March 2020 over Canadian Arctic waters to monitor shipping activities. There were 384 vessels overflowed and zero ship source oil spills observed in this region during this period.

VESSELS OF CONCERN

Preserving and restoring marine ecosystems by taking measures to address wrecked, abandoned or hazardous vessels, have been key components of the Oceans Protection Plan. This has included:

- enhancing the pleasure craft-licensing and vessel registration systems to better identify vessel ownership
- assessing options to create a long term vessel-owner financed remediation fund
- developing a national inventory of abandoned or wrecked vessels and a risk assessment methodology to prioritize these vessels for removal
- bringing the [Wrecked, Abandoned or Hazardous Vessels Act](#) into force in July 2019. Since then, over 275 vessels have been addressed using the new authorities under the act, and
- supporting communities in the removal of smaller, high-priority wrecked or abandoned vessels via the Department of Fisheries and Oceans's [Small Craft Harbours Abandoned and Wrecked Vessels Removal Program](#) and Transport Canada's [Abandoned Boats Program](#). To date, over 200 vessels have been addressed under these 2 programs

Combined, these actions are helping to restore marine habitats and ecosystems in key strategic areas. Under the Oceans Protection Plan, in partnership with the Department of Fisheries and Oceans and the Canadian Coast Guard, the federal objective of addressing at least 275 abandoned and wrecked vessels by March 31, 2022 has been met - 2 years ahead of schedule.

INCREASED INTERNATIONAL REPRESENTATION

Canada has continued to strengthen its ability to follow, influence and lead internationally on marine safety, security and environmental issues following the creation of a permanent Canadian mission at the International Maritime Organization in 2017. Related initiatives in 2020 have included the ongoing funding of the Canadian Chair at the World Maritime University to promote and advance international marine environmental protection and Canada's coastal and ocean agenda, as well as the increased participation at the International Maritime Organization by Indigenous groups.

ENGAGING CANADIANS

Transport Canada continues to raise awareness about the Oceans Protection Plan and marine safety, including engaging and receiving ongoing input from Canadians through the [Let's Talk - Oceans Protection Plan Portal](#).



AIR TRANSPORTATION

HIGHLIGHTS

- The Government announced a total of \$129.9 million to help with the health-care system's response to COVID-19, including up to \$17.3 million to maintain air services supporting the movement of essential goods and services to remote and fly-in communities within the Territories
 - Amendments to the *Secure Air Travel Act* and *Secure Air Travel Regulations* came into force and passengers are now screened by the Government of Canada up to 72 hours prior to flight departure. This offers a more standardized, equitable, and efficient screening process
 - To kickstart the regulatory development for low-risk beyond the visual line-of-sight drone use, Transport Canada published a Notice of Proposed Amendment on April 23, 2020. This allows routine lower-risk beyond the visual line-of-sight drone use in Canada without the need for a Special Flight Operation Certificate, and expand the existing Part IX visual line of sight framework
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BROAD LEGISLATIVE, REGULATORY AND PROGRAM DEVELOPMENTS

During 2020, the pandemic led to a systemic contraction in air services due to the collapse in demand by users. This collapse had ramifications that cascaded throughout the entire air transportation supply chain, creating an unprecedented situation. Air carriers reduced the size and scope of their networks; airport authorities, which operate on a not-for-profit, user-pay basis, sought relief from their debt obligations; and NAV CANADA, also operating on a not-for-profit basis, had to raise its fees.

Since the onset of the pandemic, the Government of Canada has put in place a number of financial support measures, such as the Canada Emergency Wage Subsidy (CEWS), the Business Credit Availability Program and the Large Employer Emergency Financing Facility, to assist all sectors of the economy.

The pandemic created particular challenges for Northern and remote communities, given their higher reliance on the air transportation industry due to their remoteness for the essential delivery of goods, services and connectivity. On April 14, 2020, the Prime Minister announced the Government of Canada was providing a total of \$129.9 million, specifically, for Yukon (\$18.4 million), Nunavut (\$30.8 million) and the Northwest Territories (\$23.4 million) to help with their health-care systems' response to COVID-19, including up to \$17.3 million to maintain air services supporting the movement of essential goods and services to remote and fly-in communities within the territories.

That aid was augmented on August 6, 2020, when the Minister, along with the Ministers of Northern Affairs and Indigenous Services, announced measures that became known as the Remote Air Services Program. The program works on the basis of bilateral agreements with the provinces and territories, the agreement establishes that it is the responsibilities of the provinces and territories to decide which air services receive funding to enable remote communities to receive continued access to essential services. The program's support period began in July 2020, and was developed to be renewable every six months, until its scheduled expiry at the end of December 2021. The program has a total federal contribution value of up to \$173.1 million over 18 months, with a \$75 million federal contribution created for July to December 2020.

For the air sector, in March 2020, the Government announced rent relief from March to December 2020 for the 21 airport authorities that have ground leases with the federal government, as well as comparable treatment for Ports Toronto, which operates Billy Bishop Toronto City Airport.

On November 8, 2020, the former Minister of Transport announced that the Government of Canada would develop a package of assistance for Canadian air carriers, airports and the aerospace sector, contingent on strict conditions to protect Canadians and the public interest, including air carriers issuing refunds for flights cancelled and the restoration of regional air services suspended as a result of the COVID-19 pandemic.

This commitment was repeated on November 30, 2020 in the Fall Economic Statement, which included a number of specific funding commitments, including those related to airports and regional service, as follows:

- Up to \$206 million over 2 years, starting in 2020-21, to the Regional Development Agencies for a new Regional Air Transportation Initiative to support regional air transportation
- Additional funding of \$186 million over 2 years, starting in 2021-22, for the Airports Capital Assistance Program to support small and regional airports in making critical investments in health and safety
- Up to \$500 million over 6 years, starting in 2020-21, to support large airports in making critical investments in safety, security and transit infrastructure
- Extension of \$229 million in additional rent relief to the 21 airport authorities that pay rent to the federal government, with comparable treatment for Ports Toronto, which operates Billy Bishop Toronto City Airport to support continued operations of Canada's major airports, and
- \$65 million in additional financial support to airport authorities in 2021-22 to help manage the financial implications of reduced air travel on airports

The year 2020 began on the heels of the second of the 2-phase implementation of the Air Passenger Protection Regulations coming into full force and effect.⁵ The regulations are directed at enhancing consumer protection, one of the key priorities of Transportation 2030, the long-term federal policy vision for Canada's transportation future that was announced in November 2016.

The onset of the COVID-19 pandemic in March 2020 placed an unforeseeable burden on that system as flights were delayed or cancelled as the demand for passenger air services collapsed in response to government imposed public health measures, including travel restrictions and mandatory isolation periods aimed at mitigating the deadly threat of the virus. Given the scope of the flight cancellations, air carriers offered vouchers instead of cash refunds in many cases.

On December 18, 2020, the Minister directed the agency to develop a new regulation on the issue of refunds to passengers. This regulation is to apply to future flights that are cancelled for reasons outside an air carrier's control (such as a pandemic) and where it is not possible for the carrier to complete the passenger's itinerary within a reasonable timeframe. The Minister indicated that the regulation should be fair and reasonable to passengers, and to the extent possible not impose an undue financial burden on air carriers that could lead to their insolvency. On December 21, 2020, the Agency launched a consultation to develop this regulation.

⁵ Phase 1 of the Air Passenger Protection Regulations, which related to communication, tarmac delays, denied boarding, lost and damaged luggage, and transporting musical instruments, came into effect on July 15, 2019. Phase 2, which relates to flight delays and cancellations, and the seating of children, came into effect on December 15, 2019.

DEVELOPMENTS ENHANCING EFFICIENCY AND COMPETITIVENESS

Under the Marketplace Frameworks Program, Transport Canada works to encourage transportation efficiency by fostering a competitive and viable air transportation industry, including its primary actors: air carriers, airports and NAV CANADA.

The department actively monitors to ensure market conditions are conducive to allowing opportunities for Canadian air carriers to be viable and to grow and compete in order to have domestic and international success, and for all of the airports that host them to promote the communities they serve, all on the basis of user pay. Occasions do arise, however, when public intervention is necessary, such as during 2020 with the onset of the COVID-19 pandemic.

For example, in June 2019, the Governor in Council had authorized the acquisition and merger of Canadian North Inc. by Bradley Air Services, then doing business as First Air, on public interest considerations upon recommendation of the Minister. Now operating under the trade name Canadian North, the merged entity carried on business during 2020 as the dominant provider of air services to, from and within northern Canada albeit under certain terms and conditions with accountability to the Minister.

But as the pandemic ensued, Canadian North found it increasingly difficult to adhere to them and so sought temporary relief from some of them, which the Minister granted. At year end Canadian North was still operating under the exceptional relief granted by the Minister because of the poor demand conditions arising from the pandemic.

Also, in July 2019, Air Canada had proposed to acquire Transat A.T. Inc., subject to authorization from Canada, the European Commission and Mexico. In October 2019, the Minister deemed the proposed acquisition to have public interest impacts that warranted further consideration, including but not limited to an assessment of potential competition impacts by the federal Competition Bureau. In February 2020, the Commissioner of Competition presented the Minister with the bureau's assessment.

The bureau's competition assessment informed a broader public interest review that was undertaken and delivered by Transport Canada to the Minister in May 2020. At year end, Air Canada's proposed acquisition of Transat was still being considered by the Minister, who under the merger provisions of the *Canada Transportation Act* is tasked with making a recommendation to the Governor in Council, which decides such matters for Canada.

In 2020, due to the COVID-19 pandemic, Transport Canada worked closely with the International Civil Aviation Organization (ICAO), fellow member states, aviation industry stakeholders and other international organizations in the context of the ICAO Council's Aviation Recovery Task Force, which aims to provide global guidance for a safe, secure and sustainable restart and recovery of the aviation sector.

DEVELOPMENTS ENHANCING SAFETY AND SECURITY

Transport Canada processes around 120,000 Civil Aviation services per year. In 2019, the department delivered:

- 28,894 pilot or flight engineer licensing services
- 955 air operator certificates
- 7,790 aircraft registration requests
- 101 air traffic controller licensing requests
- 40,970 medical assessments

- 32,436 drone pilot certificates issued
- 3178 surveillance events
- A total of 89 Canadian Aviation Documents were issued to new air cargo secure supply chain participants in 2020:
 - new companies or sites: 58
 - address changes: 14
 - CAD type changes: 8
 - company name changes: 9

DRONES

To kick start the regulatory development for low-risk beyond the visual line-of-sight drone use, Transport Canada published a notice of proposed amendment on April 23, 2020. The objective of the notice is to enable routine lower-risk beyond the visual line-of-sight drones use in Canada without the need for a special flight operation certificate, and expand the existing Part IX visual line of sight framework. The scope of the notice covers lower risk operations, including:

- delivering supplies to remote communities
- first responder operations
- natural resources, and
- wildlife surveys and infrastructure inspection

The notice received about 230 comments from stakeholders following the written submission period. During the consultation period, Transport Canada also organized a series of targeted stakeholder presentations with groups of manufacturers, training providers, commercial and recreational users as well as the broader aviation community. Overall, the notice was received positively by stakeholders in the drone industry and generated discussion with the broader aviation community. These comments will be used to inform regulatory development with a fee proposal by early 2021 and a target pre-publication of the regulations in *Canada Gazette*, Part I in fall 2021.

Transport Canada, NAV CANADA, and industry stakeholders have been working together since 2019 to develop a multi-year plan to develop a drone traffic management system in Canada. This involves launching specific trials to produce information that will help determine:

- what Canada's drone traffic management system will look like
- what the minimum requirements for each part of the system will be, and
- the equipment drones in Canada may need to carry for them to function safely within the overall system

The first phase of the airspace management trials, which includes exploring options to remotely identify drones to ensure accountability of drone operators, was launched in 2020. The data gathered from these trials will help develop performance standards and future regulations.

UKRAINE INTERNATIONAL AIRLINES FLIGHT PS752 AND THE SAFER SKIES INITIATIVE

On January 8, 2020, Ukraine International Airlines Flight 752 was shot down shortly after takeoff in Tehran, Iran. There were 176 passengers and crew on board. All were fatally injured and the aircraft was destroyed. Of the passengers who died in this tragedy, 55 were Canadian and many others had ties to Canada.

Following this tragedy, the Minister of Transport appeared before the International Civil Aviation Organization Council in March, June and November, to reiterate Canada's expectations in regards to Iran's Annex 13 Investigation Report, to request that Iran follow up on its commitment to transfer the flight and voice data recorders from Flight PS752, and to present the Safer Skies Initiative, calling for more action by the Council with a proposal for a concerted effort to further mitigate risks to civil aviation operations over or near conflict zones. This proposal was adopted by the Council.

Transport Canada is committed to implementing recommendations and lessons learned from the report of the special advisor for Canada's ongoing response to the Ukraine International Airlines tragedy, including commemorating the lives of the victims and supporting their families, pursuing truth and accountability from Iran, and preventing future disasters through the Safer Skies Initiative. This includes creating a 24/7 Conflict Zone Information Office, an international consultative committee and an annual global forum to prevent future tragedies like PS752.

CENTRALIZED SCREENING AND COMING INTO FORCE OF AMENDMENTS TO THE *SECURE AIR TRAVEL ACT*

The Passenger Protect Program prevents people who could be a threat to national security from boarding a plane. The Program currently works with air carriers to screen passengers travelling to, from and within Canada.

On November 4, 2020, amendments to the *Secure Air Travel Act* and *Secure Air Travel Regulations* came into force for the Government of Canada to take over from air carriers the responsibility of screening passengers against the *Secure Air Travel Act* list. Passengers are now screened by the Government of Canada up to 72 hours prior to flight departure. This offers a more standardized, equitable, and efficient screening process.

Transport Canada is currently working with Public Safety Canada and the Canada Border Services Agency to implement a phased approach to onboard over 100 commercial air carriers to the new and enhanced centralized screening model.

BOEING 737 MAX-8

Throughout the year, Transport Canada has continued their independent review of the Boeing 737 MAX, while working extensively with the US Federal Aviation Administration, as state of design of the aircraft, and other key certifying authorities, including the European Union Aviation Safety Agency, the National Civil Aviation Agency of Brazil, as well as the 3 Canadian operators of the Boeing 737 MAX aircraft, and their pilot unions. The aircraft was involved in 2 tragic accidents:

- the Lion Air crash in Indonesia in October 29, 2018, and
- the Ethiopian Airlines accident on March 10, 2018

The aircraft has been grounded in Canadian airspace since March 13, 2018.

Transport Canada continued an extensive review of the proposed design changes to the 737 MAX throughout 2020, accumulating in excess of 16,000 hours of review, which included extensive engineering evaluations as well as flight testing performed in late August. Canada was the first international regulator to complete validation flight testing of the 737 MAX incorporating the design changes implemented to address the causes of the 2 tragic accidents.

From September 14 to 22, 2020, Transport Canada participated in a Joint Operational Evaluation Board (JOEB), which is made up of representatives from global certification authorities. The board evaluated all proposed pilot training in support of B-737 MAX design changes and created harmonized training/operational findings among authorities. As a result of the JOEB, Transport Canada determined Canadian-unique training requirements that go beyond those of the FAA.

On November 18, 2020, the US Federal Aviation Administration released an airworthiness directive for the Boeing 737 MAX aircraft. Through this directive, the administration mandated its approved changes be made to the Boeing 737 MAX aircraft, and confirmed it could return to service in US airspace.

On December 17, 2020, Transport Canada aviation safety experts completed their independent review that involved a 22-month investigation, resulting in the validation of the design changes to the Boeing 737 MAX aircraft. Validation of these changes means that these modifications can be incorporated on Canadian registered aircraft.

Transport Canada approved the revised training program for the 3 Canadian operators on December 21, 2020 and these airlines have trained their pilots accordingly for the return to service of the aircraft.

AVIATION SAFETY COLLABORATION FORUM

The Canadian Aviation Safety Collaboration Forum took place on January 14 and January 15, 2020. This annual event provides a platform for a range of aviation safety leaders to address challenges and opportunities facing the aviation industry and build on the previous year's progress to increase safety collaboration.

The concept of a Transport Canada and industry sector level collaborative analysis groups was introduced at the event as a potential mechanism to work collaboratively through a Strategic Safety Risk Management process in the context of existing data protection limitations. Industry stakeholders at the forum supported undertaking a trial of the CAG concept which will focus on 705 operators. Formal structures and processes created as part of a groups are expected to facilitate transition to collaborative data sharing when appropriate regulatory protections are in place.

Transport Canada also hosted a breakout session on safety management systems, with industry stakeholders encouraged to participate and voice their thoughts and opinions on the current state of safety management systems in their industry. The session included 4 key parts:

- a briefing on the evaluation of safety management systems in civil aviation
- a briefing on the policy review by Civil Aviation
- an introduction to the Safety Management International Collaboration Group, and
- a Q&A session with all participants

GENERAL AVIATION SAFETY CAMPAIGN

In June 2017, Transport Canada launched the 3-year general aviation safety campaign to enhance aviation safety and reduce the number of accidents by sharing safety information with the recreational aviation community. With the end of the 3-year campaign, the general aviation safety campaign officially transitioned to a general aviation safety program in June 2020.

Transport Canada is in the process of establishing a Canadian General Aviation Joint Steering Committee to provide guidance and oversight to the general aviation safety program.



It will allow the committee to better align with our US counterpart working on a similar endeavor and with whom we collaborate on a regular basis. The committee's tasks include:

- guiding and overseeing the Canadian Safety Analysis Team
- linking and aligning with the Federal Administration Aviation committee, and
- approving a prioritized safety plan

Draft terms of reference for the program and committee have been developed with the intent to table these at the first meeting of the committee, which is scheduled for March 10, 2021.

AIR-TAXI CAMPAIGN

The air-taxi sector has more accidents and more fatalities than all other sectors of commercial aviation in Canada.

In January 2020, Transport Canada engaged with key stakeholders in the air taxi sector at the Aviation Safety Collaboration Forum to discuss potential safety pillars of the initiative and the need for industry collaboration. It was determined that the reinforcement of a positive safety culture, the management of operational risk, and the empowerment of pilots will be the areas of focus. These areas may evolve based on the feedback and progress of the initial year of the campaign.

The air-taxi safety campaign, scheduled to launch in spring 2020 as part of Transport Canada's response to the Transportation Safety Board of Canada's recommendations A19-02 and A19-03, was postponed to Winter 2021. This 4-year safety campaign has the goal of identifying strategies that would lead to the reduction of accidents and incidents in the air-taxi industry by promoting a positive safety culture through safety promotion and awareness initiatives.

COMMERCIALIZATION OF AVIATION SECURITY SCREENING SERVICES

Budget 2019 announced the intention to transfer the delivery of airport security screening services that are currently provided by the Canadian Air Transport Security Authority, a Crown corporation, to an independent, not-for-profit entity. The federal government would continue to play an exclusive regulatory and oversight role for security screening services at Canadian airports. The enabling legislation, the *Security Screening Services Commercialization Act*, received royal assent on June 21, 2019.

Prior to COVID-19, the government was negotiating the sale of Canadian Air Transport Security Authority (CATSA) to the designated screening authority, a not-for-profit entity made up of representatives from airports and airlines. In March 2020, Transport Canada officials and the members of the designated screening authority agreed to put the sale on hold to allow both parties to respond to the impacts of COVID-19 on the air sector.

PRECLEARANCE

In 2020, the total level of US-bound passengers precleared by US Customs and Border Protection was down by over 90% compared to the previous year's total (around 15 million).

The new bilateral agreement on *Land, Rail, Marine and Air Transport Preclearance* (2019) expanded preclearance to surface, rail and marine modes, and to new locations for the air mode. Expanding preclearance across all modes will facilitate faster travel between Canada and the US, provide access to more destinations, bolster trade, better protect rights, and increase border security. In addition to having significant impact on the air preclearance passenger numbers, COVID-19 related border restrictions stalled preclearance expansion efforts. Discussions with the US Customs and Border Protection are on-going to ensure both countries remain positioned to advance preclearance implementation while facilitating sector recovery efforts, when appropriate and safe.

DEVELOPMENTS ENHANCING ENVIRONMENTAL PROTECTION

Transport Canada has been actively involved in the International Civil Aviation Organization's (ICAO) development of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), which is a carbon offsetting scheme that addresses the increase in international aviation emissions from 2020 onwards by requiring aircraft operators to acquire emission units on the open market to offset a portion of their greenhouse gas emissions on international flights. This applies to all types of operators (commercial, business, and private) that emit more than 10,000 tonnes of carbon dioxide emissions on international flights from 2019 to 2035.

Transport Canada published in November 2018 regulations under the *Aeronautics Act* that set out monitoring, recording and verification requirements for all Canadian operators with regards to CO₂e emissions. The data from operators would establish sector and individual emissions baselines to help determine offsetting obligations during the offsetting phase. In December 2020 Transport Canada published an update to the regulations under the *Aeronautics Act* to set out the offsetting and alternative fuels requirements of CORSIA, thus finalizing full implementation in Canada.

Transport Canada has also been supporting ICAO's ACT-CORSIA program, which is the assistance capacity building and training program to support the global implementation of CORSIA. Transport Canada delivers capacity building sessions in requesting nations, focusing on the delivery of the program in French to Francophonie African states and in English to Caribbean states.

Transport Canada continues to work closely with Canadian air carriers to improve their environmental performance through Canada's 2012-2020 Action Plan to Reduce Greenhouse Gas Emissions from Aviation. The sector's progress towards improving fuel efficiency is reported annually under this Action Plan. The 2018 report was released in early 2020, and shows that Canadian air carriers have improved their fuel efficiency by 18 % between 2008 and 2018.

OTHER DEVELOPMENTS IN THE SECTOR

Commercial space launches

On March 6, 2019, the Government of Canada announced *Exploration, Imagination, Innovation: A New Space Strategy for Canada*. The strategy commits the Government of Canada to review Canada's legislative and regulatory framework for space activities to ensure they provide timely responses for industry, maintain strategic oversight for national security and enable commercial growth.

Transport Canada continues to work with Innovation Science and Economic Development Canada, the Canadian Space Agency, Global Affairs Canada, the Department of National Defence and other relevant government departments, to enable commercial space launch in Canada, and further advance the Strategy's objectives.

Transport Canada has the authority through the *Aeronautics Act* and the *Canadian Aviation Regulations* (CARs) to regulate rockets and launch vehicles destined for space from Canada, the use of domestic Canadian airspace, and the certification of aerodromes and spaceports. Transport Canada will continue to collaborate with our partners across government and engage with space industry proponents and stakeholders to ensure the compliance with licensing requirements, safety and security standards, and sustainability of this growing industry in Canada.

Runway end safety area

The Regulations Amending the Canadian Aviation Regulations (Parts I, III and VI — RESA) were pre-published in the Canada Gazette, Part I, on March 7, 2020 for consultation.

The amendments would require Canadian airports with an annual passenger volume of at least 325,000 passengers to extend their current runway end safety area from 60m to 150m at both ends of runways that serve scheduled commercial passenger-carrying flights. The proposal to extend to 150m was built on Canadian data demonstrating that 90% of excursions at Canadian airports are stopped within 150m. The amendments take into consideration the International Civil Aviation Organization's standards, while addressing the intent of the recommendation made by the Transportation Safety Board of Canada.

A total of 31 comments from 9 stakeholders were received and the main themes raised in the comments reflected:

- the financial challenges faced by airports due to the pandemic, and
- the time constraints for the implementation

As a way forward, the comments received, the impacts of COVID-19, and the realities of reduced passenger volumes at Canadian airports will be considered for the final regulations.

NAV CANADA level of service changes

Transport Canada has been communicating with NAV CANADA regarding their proposed level of service changes at several sites.

This proposal is part of NAV CANADA's efforts to review its level of service to some sites and adjust to traffic changes – efforts accelerated as a result of the major challenges brought on by the global COVID-19 pandemic.

Prior to any implementation of proposed level of service changes by NAV CANADA, Transport Canada must ensure that any reduction or termination of service proposed would not unacceptably increase the risk to aviation safety. As such, NAV CANADA is expected to submit aeronautical studies in 2021 to support their proposal.

At the conclusion of these studies, Transport Canada Civil Aviation experts will review each study to ensure that any reduction or termination of service proposed does not increase unnecessary risk to aviation safety.

Looking ahead, Canada plans to collaborate with other aviation authorities and safety and security partners to leverage their expertise, exchange best practices, and keep pace with innovation and technology. Transport Canada will continue to promote and strengthen the safety and security of the aviation system by enhancing domestic and international engagement and partnerships to modernize the air travel process and minimize technical barriers to trade.

COVID-19 AND THE AVIATION INDUSTRY

Since the start of the pandemic, Transport Canada has worked closely with the Public Health Agency of Canada, other government departments and agencies, and with industry to mitigate the spread of COVID-19 and to ensure the health and safety of the traveling public. This includes the publication of 34 Interim Orders respecting COVID-19 in the air sector during 2020, as well as guidance material to support industry in the implementation of various health measures. The mitigations introduced in the air sector include mandatory health checks, temperature screening and face masks for passengers and airport workers, as well as pre-departure COVID-19 testing for all travelers coming to Canada. A notice was also issued to funnel all inbound commercial and private flights carrying passengers to 4 airports in Canada.

Ongoing consultations with industry have shaped Transport Canada's multi-layered approach to keep travelers, crew members and airport employees safe. As part of a national response effort, industry moved forward with implementing new cleaning and disinfection protocols, and improved air conditioning and filtration systems where necessary. Airports have also created new and enhanced facility practices to encourage physical distancing, such as installing plexiglas barriers at check-in and customer service counters, and clear signage and floor markings throughout the terminal. All this work has been done in alignment with the recommendations from the International Civil Aviation Organization and other initiatives from like-minded states.

Following the implementation of Interim Orders beginning in April 2020, Transport Canada put in place a task force with the mandate to undertake administrative investigation and, if required, to take enforcement action against individuals and/or air carriers who do not respect their obligations under the Interim Orders. This task force is composed of existing Aviation Security Inspectors located in each region of the country.

In 2021, the federal Government will be working with the air sector to create protocols and conditions that would allow the sector to renew itself and return to being able to grow air services. In that regard, work announced by the Minister on November 8, 2020 to complete a package of assistance to the air carrier industry, including financial aid, will continue in 2021.

The federal Government will continue with the provinces and territories under the *Remote Air Services Program* to fund essential air services to small and remote communities that are reliant on air transportation for resupply, and which during the pandemic have not been able to independently support the economics for air services on a strict user pay basis.

Canada's flight plan for navigating COVID-19

On August 14, 2020, the Minister of Transport released *Canada's Flight Plan for Navigating COVID-19*.

Canada's plan is the foundation for aligning Canada's current and future efforts to address the safety impacts of COVID-19 on the aviation industry. It is a collaborative whole-of-government and industry action plan, which demonstrates the multi-layered system of measures that have been implemented to support public health, and align with international standards and best practices in aviation.

This means that travelers can expect to see multiple layers of protective and preventative measures while travelling to, from and within Canada including temperature checks, health checks, and face coverings. Knowing that every aspect of the travel journey, from departure to arrival, is being managed and considered carefully, should give the public confidence that aviation has strong mitigation measures to support public health.



It has also supported Canada's aviation industry by setting a benchmark for all other measures implemented in the sector to ensure the safe and efficient movement of passengers and crew. Stakeholders can turn to Canada's Flight Plan to align their public health measures with those being implemented across the country, as well as those recommended and required by the Government of Canada.

Canada's Flight Plan uses the International Civil Aviation Organization's Council Aviation Recovery Taskforce report and take-off guidance as a reference point to identify touch points, considerations and recommended practices to maximize the safety and biosecurity of air travel both in Canada and across the world.

Canada's plan will be refined as Transport Canada learns more about COVID-19, and as guidance evolves at the local, provincial, national and international level.

COVID-19 regulatory exemptions

During 2020, around 120 COVID-related exemptions and about 80 non-COVID global and regional exemptions have been issued to provide relief to the aviation industry where it was assessed that these exemptions are in the public interest and are not likely to adversely affect aviation safety or security. Some examples of COVID-related exemptions that have been issued by Transport Canada during the COVID-19 pandemic, include:

- providing on-duty uniformed Canada Border Service Agency officers at certain Canadian aerodromes with an alternate means of compliance from the requirement to be temperature screened each time they enter a restricted area, in order to avoid a down-fall within operational efficiency relating to officers having to go through temperature screening multiple times per shift
- providing a Canadian air operator with the temporary authority to extend the valid-to date of a pilot proficiency check and the annual training of any company pilot or person assigned to perform duties on-board an aircraft for an additional 90 consecutive days
- allowing Canadian airport operators to extend the frequency period for recurrent live-fire drill training from every 12 months to a maximum of 30 months, and
- allowing Canadian air carriers operating international medical evacuation flights to board persons without having to meet the requirements in the *Interim Order Respecting Certain Requirements for Civil Aviation Due to COVID-19* when operating international medical evacuation flights (MEDEVAC) flights as defined in the *Canadian Aviation Regulations*

COVID-19 testing

The use of COVID-19 testing as a means to potentially shorten quarantine requirements and improve public confidence in the safety of travel, while protecting public health, is a critical step towards a gradual re-opening of borders.

Within Canada, both government and industry have taken proactive roles in establishing testing pilots at major airports and land crossings in order to collect evidence to assess the efficacy of testing for the eventual re-opening of borders.

These pilot projects examine the role of COVID-19 testing at various phases of the traveler's journey, including pre-departure, on arrival, and post-arrival, to minimize the transmission of COVID-19 while travelling and after arrival.

Transport Canada is also involved with the International Civil Aviation Organization to develop standardized methods of reporting valid COVID-19 test results and vaccination status in order to facilitate restoration of air travel.

On December 31, 2020, the Minister of Transport announced that as of January 6, 2021, all air passengers, 5 years of age and older, are required to present a negative molecular COVID-19 test prior to boarding any international flight to Canada.

Travelers are required to provide written or electronic documentation showing they received a negative result from a COVID-19 test conducted within 72 hours prior to their scheduled boarding.

TRANSPORTATION OF DANGEROUS GOODS

HIGHLIGHTS

- Launched new research projects aimed at improving the safety of the transportation of dangerous goods in Canada.
 - Published the [Regulations Amending the *Transportation of Dangerous Goods Regulations \(Formatting Changes\)*](#) in the *Canada Gazette, Part II*
 - Developed the standard “Transportation of dangerous goods training, assessment and competency” in collaboration with the Canadian General Standards Board and industry
 - Developed and distributed the [Emergency Response Guidebook](#) in collaboration with the US, Mexico and Argentina
-

SAFETY AND SECURITY MEASURES

Regulation making

In accordance with the approach taken across the Government of Canada following the increasing pressures of the COVID-19 pandemic, Transport Canada temporarily deferred seeking Governor in Council approval of its regulatory proposals in the spring of 2020 unless they fell into any of these categories:

- proposals that could mitigate the risks associated with COVID-19
- proposals that could provide relief from COVID-19 impacts, and
- time-sensitive proposals related to safety, security, or the environment

Looking forward, Transport Canada is re-examining its Forward Regulatory Plan to consider how best to prioritize the advancement of regulatory initiatives. In all cases, due regard will be given to the potential impacts that proposed regulations could place on Canadians and the Canadian economy.

Enhancing oversight of transporting dangerous goods

Transport Canada maintained a strong oversight program, with over 90 inspectors conducting 4,600 inspections during the year and employing 3,145⁶ enforcement actions and risk reduction measures. Specialized training for inspectors continues to be updated, developed, and delivered to meet the needs of the program. Transport Canada strives to continuously improve its risk-based oversight regime by identifying, researching, and addressing emerging risks.

As a result of the restrictions in place following the declaration of the COVID-19 pandemic, Transport Canada has taken the following actions to improve dangerous goods oversight:

- issued guidance on alternative oversight activities: Remote oversight to inspectorate on conducting remote oversight activities as a result of the COVID-19 pandemic
- issued 13 temporary certificates, pursuant to subsection 31(2.1) of the *Transportation of Dangerous Goods Act, 1992*, to facilitate the transportation of dangerous goods and support the pandemic relief efforts
- issued 1 equivalency certificate pursuant to subsection 31(2.1) of the *Transportation of Dangerous Goods Act, 1992*, to facilitate the transportation of dangerous goods and support the pandemic relief efforts

Launching new research projects

Research is underway through 23 new projects involving the transportation of dangerous goods, to be initiated from 2020 to 2023. A total of \$3.6 million has been allocated to the 23 research projects. Funding for the projects was provided through court settlements paid largely by Irving Oil in connection with the Lac-Mégantic disaster.

The projects were carefully selected from numerous ideas resulting from a research symposium held in 2019, which brought together more than 200 transportation of dangerous goods partners, including emergency responders, industry representatives, academia, and experts on the transportation of dangerous goods.

The selected projects cover topics such as: tools for emergency response, dangerous goods containers, lithium batteries and other energy storage systems, risk assessment and analysis, as well as other emerging issues.

Six projects have been initiated in 2020, namely:

- validation of recommended emergency actions for liquefied natural gas in the [Emergency Response Guidebook](#);
- comprehensive review of the criteria and thresholds for [emergency response assistance plans](#) in the *Transportation of Dangerous Goods Regulation*
- evaluation of any increased risks resulting from greater amounts of hydrogen being transported to hydrogen-vehicle fueling stations
- hazard assessment of energy storage systems being transported in enclosed vessels for marine transport
- development of a geographic-information-system based risk assessment methodology for moving dangerous goods by road, and
- development of a smart package for lithium battery transportation that indicates a warning about an issue inside the package

⁶ Transport Canada's Centre for Enforcement Expertise (CEE) recently made a significant change to how enforcement actions are counted. Previously, non-compliances were not considered enforcement actions. Based on CEE's new guidance, as of late 2019, most of TDG's non-compliances are now considered "verbal warnings". As such, the number of enforcement actions undertaken by TDG has increased significantly compared with previous years.

Response to Standing Committee on Public Accounts

In November 2020, the Commissioner for the Environment and Sustainable Development released its follow-up audit of the Transportation of Dangerous Goods Program and the Canada Energy Regulator. The objective of this audit was to assess the extent to which each organization had implemented the recommendations from previous audits, which in the case of program took place in 2011⁷ - with respect to their compliance and enforcement responsibilities, and to determine whether each organization had followed up with companies that had been in non-compliance with regulations to ensure a return to compliance.

Overall, the commissioner concluded that the program has made improvements, but further work remained to be done. For example, it founds that program had not followed up on some violations, or had not granted formal approval to a number of Emergency Response Assistance Plans that had been approved on an “interim” basis for some time. It was also found that although a national risk-based system for prioritizing inspections had been implemented, the underlying data was incomplete.

That being said, the commissioner recommended that the program:

- improve and update its tools and database to have more complete and accurate information on regulated companies and their compliance status and to better inform risk-based planning
- systematically track and document its verification that companies have returned to compliance after violations are found
- ensure that means of containment facilities with expired certificates are not conducting the activities for which the certificates were issued
- strengthen its processes for collecting data from its partners to better identify the national rate of regulatory compliance in the transportation of dangerous goods, and
- finalize its approval of the interim ERAPs by completing the necessary investigations and by developing national guidance and criteria for assessing firefighting capacity for plans related to flammable liquids. The program should ensure that approvals for all future plans are finalized within its prescribed timelines



⁷ For reference, the CESD had found that Transport Canada had not developed a national, risk-based inspection plan with the necessary guidance for inspectors; that in many instances the nature and extent of inspections were not documented; and there was insufficient evidence of follow-up when non-compliance was discovered to verify that corrective actions had been undertaken. The CESD also noted that Emergency Response Assistance Plans (ERAPs) were inadequately reviewed and approved when submitted by regulated entities.

On December 10, 2020, the House of Commons Standing Committee on Public Accounts issued a report that reaffirmed the commissioner's finding, and also sets out deadlines for program to submit progress reports. The first such reports are due to the PACP in June 2021. In response, the program led the drafting of a Memorandum to Cabinet for PACP, in which it committed to address the findings within the created schedule. The program developed a management action plan to guide ongoing and future activities in response to the 2 reports.

UPDATING THE TRANSPORTATION OF DANGEROUS GOODS REGULATIONS

Transportation of dangerous goods regulatory initiatives

Transport Canada continued to make progress in reviewing and amending several parts of the *Transportation of Dangerous Goods Regulations*, consistent with the Government of Canada's Forward Regulatory Plan: 2019-2021. The amendments will enhance current regulations to increase compliance and contribute to improving the safety of Canadians.

These initiatives are:

- The [Regulations Amending the Transportation of Dangerous Goods Regulations \(formatting changes\)](#) were published in the *Canada Gazette*, Part II
 - Proposed changes included updating the format of the Transportation of Dangerous Goods Regulations so they are now consistent with the Department of Justice's formatting standards.
- The *Regulations Amending the Transportation of Dangerous Goods Regulations* (International Harmonization Update and Air, Part 12). Proposed changes included:
 - aligning with the most recent changes in the UN Recommendations (21st Revised Edition), ICAO TI (2019-2020) and IMDG Code (2018)
 - reducing regulatory barriers on cross-border trade with the US, and
 - reducing the compliance burden on industry
- The *Regulations amending the Transportation of Dangerous Goods Regulations (fee modernization)*. Proposed changes include introducing new fees and service standards for the Means of Containment Facilities Registration Program
- Part 6 of the *Transportation of Dangerous Goods Regulations* is being amended to introduce new training requirements to increase compliance and enhance public safety. Proposed changes include making sure that the regulations incorporate the recently published [Standard for the Transportation of Dangerous Goods Training](#), Assessment and Competency, which sets out the requirements for training, assessment and competency of persons performing dangerous goods-related occupational functions
- A Dangerous Goods Client Identification Database is being developed, which will require amendments to the *Transportation of Dangerous Goods Act* and regulations. Proposed changes include: Creating new requirements for those who handle, offer for transport, transport and import dangerous goods in Canada to register with Transport Canada. Knowledge of site locations and up-to-date stakeholder data will improve Transport Canada's ability to identify areas of risk and enable rigorous risk-based assessment of dangerous goods sites

Regulatory sandbox on electronic shipping documents

As the transportation sector evolves, Transport Canada is looking at how it can address regulatory barriers that could be hindering innovation and investment. As part of the [Transportation Sector Regulatory Review Roadmap](#), Transport Canada launched a regulatory sandbox on electronic shipping documents. This exciting pilot project looks at the feasibility and effectiveness of allowing electronic shipping documents in the regulations.

More precisely, the purpose of this project is to do a thorough analysis of the impacts, costs and benefits related to using electronic shipping documents instead of paper ones. This project will allow businesses to replace paper shipping documents with electronic documents, as long as they meet specific safety and information sharing criteria.

Transportation of Dangerous Goods Transformation Roadmap

Transport Canada recognizes the need to grow and adapt to rapidly evolving challenges and obstacles in an ever-changing transportation environment. To maintain its reputation as a modern and agile regulator, Transport Canada has developed a transformation vision for the Transportation of Dangerous Goods Program, comprised of a suite of initiatives.

These initiatives will help enable innovation of the program alongside industry and improve upon the program's ability to effectively and efficiently oversee the safe and secure transportation of dangerous goods. These initiatives include:

- a policy framework for a Client Identification Database, which was recently completed and will allow us to identify our regulated community
- a policy framework for remote inspections, which helped provide guidance on oversight during the COVID-19 pandemic, which will be used to further integrate remote inspections into the program's oversight regime post pandemic
- a Surface Indigenous Engagement Strategy, which is currently being implemented in conjunction with Transport Canada Rail Safety to enhance communications with indigenous communities and address the concerns raised regarding the transport of dangerous goods through or near communities by rail, and
- a policy to address reverse logistics activities involving dangerous goods, a framework for the grants and contributions program, and a policy on transporting dangerous goods by remotely piloted aircraft systems – all of which are currently under development

STAKEHOLDER ENGAGEMENT AND AWARENESS

Increased engagement and communication

Transport Canada continued to engage with first responders across Canada in a number of ways, including through the Transportation of Dangerous Goods General Policy Advisory Council Sub-Committee on Emergency Response. This sub-committee will continue to oversee the maintenance and updates of the Canadian emergency response to flammable liquid incidents in transport training curriculum (for railways and roads) stemming from the Steering Committee on First Responder Training.

The Transportation of Dangerous Goods Program also continued joint work with external stakeholders through regular engagement with the General Policy Advisory Council and its sub-committees on topics, such as policy and regulatory files, research, oversight, compliance and emergency response.

In addition, the program continued to engage with the National Compliance Working Group, a forum for provinces and territories to work with Transport Canada on inspection and enforcement issues related to the transportation of dangerous goods.

TRANSPORTATION OF DANGEROUS GOODS SAFETY AWARENESS

To promote public safety, the Transport Canada continued to enhance its Transportation of Dangerous Goods Safety Awareness Program by developing publications, such as the following bulletins:

- [New requirements for nurse tanks transporting anhydrous ammonia in Canada](#)
- [Volumetric capacity on Transport Canada highway tanks](#)
- [New requirements for tank testers, tank inspectors and training organizations](#)
- [Thickness testing on highway and portable tanks](#)
- [Structural inspections of Transport Canada 423 highway tank trailers](#)
- [Pneumatic pressure testing requirements](#), and
- [Welding requirements for highway tanks and Transport Canada portable tanks](#)

A practical tool for planning and responding to dangerous goods incidents titled “[You’re Not Alone!](#)” has also been prepared to assist first responders in planning and responding to dangerous goods incidents. It presents 3 types of practical worksheets that can be adapted to fit local needs.

EMERGENCY RESPONSE

The 2020 Emergency Response Guidebook

The [Emergency Response Guidebook](#) was developed jointly by Transport Canada, the US Department of Transportation and the Secretariat of Transport and Communications of Mexico, with assistance of the Centro de Información Química para Emergencias of Argentina. This guide, designed for incidents involving dangerous goods on a highway or rail line, assists first responders:

- identify hazards based on the material involved in a transportation incident, and
- protect themselves and the public during the initial response to an incident

PUBLIC TRANSPORTATION

INVESTING IN CANADA INFRASTRUCTURE PLAN

Starting in 2016, the 12-year *Investing in Canada Infrastructure Plan* (ICIP) will invest over \$180 billion into infrastructure projects across the nation. The plan will take place in 2 phases, the first of which includes a focus on repairing and upgrading public transportation systems. The plan has allocated \$28.7 billion to public transportation, broken down as such:

- \$3.4 billion over 3 years from the Budget 2016
- \$20.1 billion from the public transit stream of the ICIP
- \$5 billion allocated to the Canada Infrastructure Bank
- \$100 million allocated to the Smart Cities Challenge

Through bilateral agreements with provinces and territories, these funds will be distributed to address the construction, improvement, rehabilitation and expansion of existing public transit infrastructure and to support new projects.

Over \$13 billion of funding has been provided to more than 1,300 public transit projects across Canada. These investments have helped build more than 240 kilometers of new public transit, subway, and light rail line. It has also aided in the purchase of over 300 zero-emission buses and create nearly 500 kilometers of active transportation trails, bike and pedestrian lanes, and recreational paths.

In addition, the Government of Canada is committed to providing ICIP funding to projects which support small cities and rural and northern communities, such as:

- nearly \$700,000 of federal funding towards improving Cape Breton Regional Municipalities traditional and para-transportation bus fleet
- enhancing the public transportation system in Brandon, Manitoba through investments into an improved para-transportation route mapping and automated notification system. Funding will also go towards safety enhancements, such fencing along high pedestrian-use areas, and connecting stations to the cities high-speed network
- the purchase of 12 new buses in the city of St. Catherine's, Ontario to increase the reliability of the transit system
- on September 30, 2020, funding for 30 projects across central, northern, and southern Ontario were announced, with federal funding totaling over \$23 million. Projects include expanded bus fleets, improving station amenities, and improving pedestrian and cyclist access to transit services

Municipalities across the nation are utilizing these funds to improve shorten commutes, improve efficiency, reduce emissions, grow Canada's economy, and improve the overall lives of Canadians.

Major public transit projects

As our urban centers continue to grow, the need for diversified, reliable, and efficient public transportation follows suit. Although the COVID-19 pandemic has resulted in a short-term decrease in public transportation ridership, the long-term importance of investments into public transit projects is recognized. Work on such projects continues to move forward, some of which are highlighted below:

The Réseau express métropolitain

The largest public transit project witnessed in Quebec over the last 50 years, the Réseau express métropolitain is an automatic light rail network which spans across 67 km of tracks, stopping at 26 stations. Integrated into existing transit systems, the network will nearly double length of Montreal's rail systems and connect to hot-spots such as the Montreal-Trudeau Airport. The system is also low-emission, utilizing 100% electric power.

OC Transpo LRT Stage 2

On September 14, 2019, the first phase of the Confederation Line opened for business in Ottawa. Stage 2 is now underway, with work already commencing on all 3 planned O-Train extensions. In total, stage 2 will add 44 km of rail, 24 stations, and bring 77% of Ottawa residents within 5 kilometers of rail access. The total cost is projected at \$4.657 billion, with \$1 billion coming from the federal government.

Kingston Public Transportation Project

On August 10, 2020, the Government of Canada approved 8 new public transportation projects in Kingston, Ontario. These projects total to over \$47 million, with funding coming from all 3 levels of government. Over \$17 million will be provided through the *Investing in Canada Infrastructure Plan*. Projects include enhanced pedestrian and cyclist access to transit systems, as well as 7 new buses for the fleet. The project aims to improve the reliability and quality of the transit system while also reducing emissions.



HIGHLIGHTS

- In 2020, many events, such as rail blockades, a pandemic and a labour dispute at one of Canada's major ports, contributed to a challenging year for the transportation system. Despite these events, freight volumes remained relatively strong, recovering most of the beginning of year's loss.
 - In response to the travel restrictions imposed nationally and internationally to control the spread of the COVID-19, the passenger sector did not recover significantly, with passenger counts remaining well below 2019 levels for the air sector
 - Canada continues to showcase one of the most safe and secure transportation systems in the world. The number of accidents remained lower or close to the ten-year average for all modes
 - Advancements in fuel efficiency for all modes transportations are showing promising results, despite an overall increase in greenhouse gas emissions of 4% from 2008-2017. This increase is largely attributed to a large increase in motor vehicles on the road
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PERFORMANCE MEASUREMENT

A number of data and metrics are used to monitor and assess the performance of Canada's transportation system. Merchandise and traffic volumes indicate how busy the system is from a national and regional perspectives. Time-based indicators, such as end-to-end transit time and travel time index, are used to assess the system's fluidity and supply chain competitiveness.

In addition to efficiency measures, this chapter also presents Canada's environmental performance measures, such as greenhouse gas emissions. It also presents safety and security performance measures, such as accident rates.

While this chapter presents an overview of the performance of the Canadian transportation system over 2020, the [Transportation Data and Information Hub of the Canadian Centre on Transportation Data](#) publishes a large number of traffic and performance indicators, updated on a monthly basis.

FREIGHT TRANSPORTATION: OVERVIEW OF CHALLENGES

The transportation system faced unprecedented challenges in 2020. Following a difficult start of the year with railway blockades, a global pandemic and a recession, the system was then taxed by additional challenges such as a labour dispute at one of Canada's top ports and blockades.

Despite these disruptions, the system was resilient and was able to swiftly recover and adjust to spike in demand as well as new safety protocols and operational procedures. By the end of the year, freight volume was back to 2019 levels in some regions of the country and for some modes.

Ministerial order and blockades

January 2020 was marked by periods of extreme cold across Western Canada which forced railways to impose speed and train length restrictions to ensure safety. In early February, following a crude oil derailment in Saskatchewan, which was the second one in the same area in 2 months, the Minister of Transport, the Honourable Marc Garneau, ensued a ministerial order on speed limits for trains carrying dangerous goods.

Cycle time for shipments of dangerous goods such as crude oil and propane increased by an estimated 30 to 50%. The capacity of the network was reduced by an estimated 15 to 20 % with significant regional and commodity differences as the speed reduction indirectly impacted the movement of other commodities. Additionally, it impacted the movement of passengers, as VIA Rail operates on the same corridor.

In early February, railway blockades started erupting in different locations across Canada and challenged an already fragile transportation system. The blockades lasted for around a month and their impact on the system was exacerbated by their randomness which prevented stakeholders from developing a coordinated response. The blockades had a major impact on passenger movements, freight logistics and trade corridors.

CN was forced to shut down its eastern network with major consequences for multiple economic sectors, such as agricultural, oil and mining. Additionally, the blockades halted rail shipments of perishable food, chlorine for water treatment, propane and raw materials for manufacturers.

Port operations on both coasts were also impacted due to the limited ability to move goods across the network. VIA Rail and CN had to temporary layoff around 1,000 and 450 workers, respectively.

COVID-19 pandemic

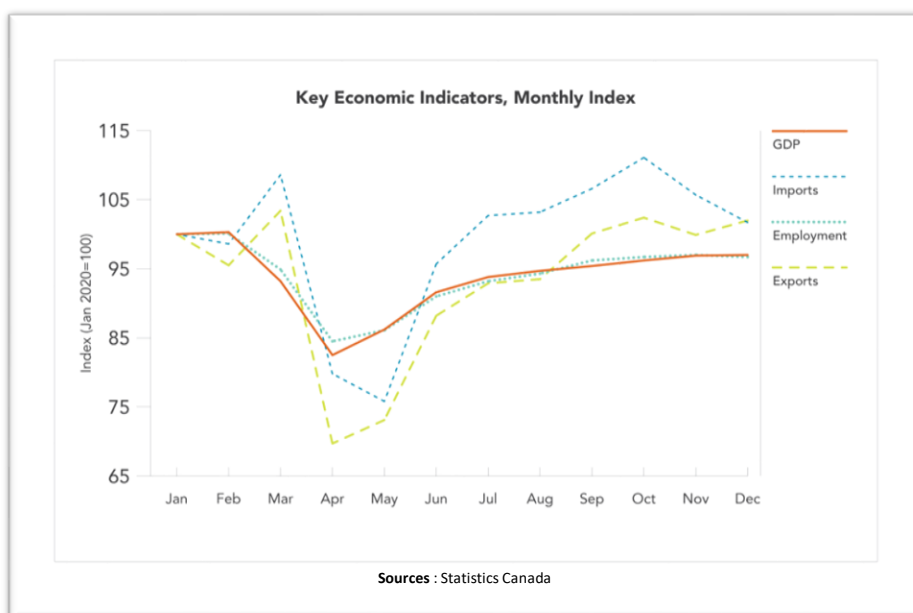
In March and April, the imposition of public health measures across the country to limit the spread of COVID-19 resulted in dramatic disruptions of economic activities, with real GDP dropping 11.3% in Q2 – the largest quarterly decline since the series started in 1961.

This decline reflected sharp decreases in household spending, business investment, and international trade owing to widespread shutdowns of non-essential businesses, border closures, and restrictions on travel and tourism. Exports fell 29.7% to \$32.7 billion in April, the lowest level in more than 10 years. Imports were down 25.1% to \$35.9 billion, a value not seen since February 2011.

The fragile economic situation led to lower demand for transportation across the network, notably for non-essential goods and energy products. In contrast, demand for bulk commodities including grain, and potash remained robust.

In the spring, the reemergence of China from initial lockdowns as well as the increase in consumer demand for durable goods and medical supplies led to a surge in inbound container volumes, specifically through western ports. This led to a global container imbalance in a period of high demand for containers. Canadian exporters faced challenges obtaining empty containers to be stuffed with cargo such as forest products and grain. This situation continued well into 2020 with container freight rates increasing to a point where some ocean carriers opted to export the containers empty, for more timely returns of containers back to Asia.

Over the summer, the Canadian economy started recovering. In Q3, Canada's gross domestic product increased 8.9%. Exports of key essential sectors (like grain, lumber, potash) and some imports (like machinery, electronics, home furnishings) experienced a robust recovery. Rebound in demand in the summer and into fall led to mismatches between demand and access to transportation services, particularly in the northern regions of western provinces, as railways brought capacity back online to meet the needs of shippers.



Strike at the Port of Montreal

The system faced different disruptions in the late summer and early fall. A longshoremen strike at the Port of Montreal in August significantly impacted fluidity of the eastern and central gateway. The 12-day labour dispute caused disruptions to container movements with vessels diverting containers away from Montreal to be unloaded in Halifax. This had a significant negative impact on cargo volumes handled at the port of Montreal.

Container imports and grain shipments

In the fall, container volumes on the west coast were higher than usual for this time of the year. This situation resulted in some congestion at container terminals, with ports having to adapt to this new reality. The grain supply chain performed well with rail grain shipments up 18% compared to last year for the beginning of the crop year (August-December).

A multimodal transportation system that is productive, competitive and connected can better provide fast shipment times, lower costs and more reliable transportation for freight and passengers. In 2019, Transport Canada launched a study of the impacts of transportation regulations on Canadian supply chains.

With this study, Transport Canada is taking a comprehensive approach to identifying freight bottlenecks and seizing future opportunities along Canada's major trade corridors. This initiative is one of the 24 initiatives announced as part of the Regulatory Review Roadmap on Innovation for the transportation sector.

FREIGHT TRANSPORTATION

PORT VOLUMES AND PERFORMANCE

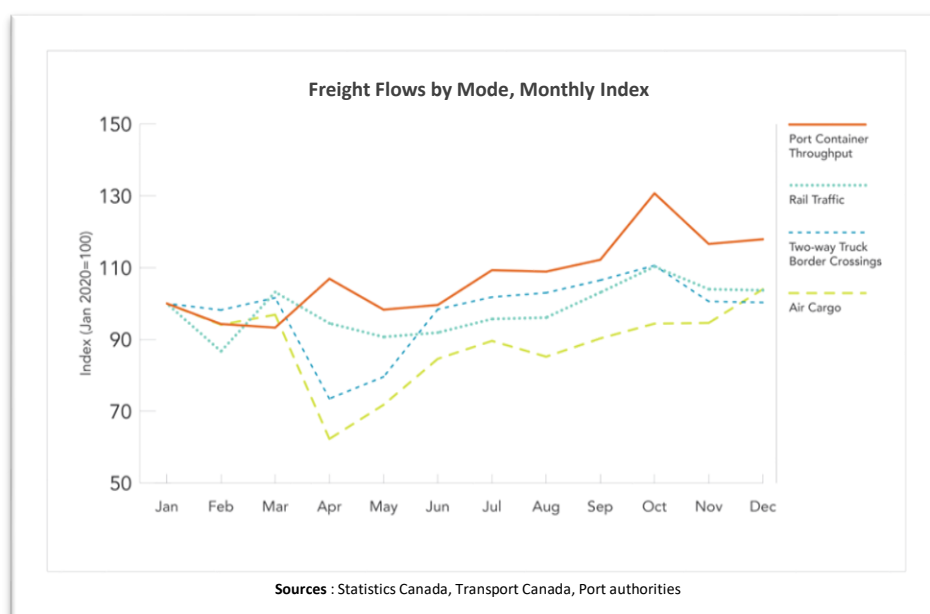
Despite a global pandemic, ensuing recession and a ramp up in demand, the total cargo volumes handled at the 17 Canada Port Authorities decreased by 0.5% in 2020, from 348.1 million tonnes in 2019 to 346.3 million tonnes in 2020 (see chart 4 below and Map 6 in the [Annex A](#)).

In Western Canada, the Port of Vancouver, Canada's busiest port, handled 0.9% more tonnes of freight in 2020 (145.5 million tonnes). In the first quarter of 2020, container and bulk volumes handled saw a large drop due to the railway

blockades, the economic slowdown in Asian countries as measures were implemented to control the spread of COVID-19 as well as the decline in North American demand for consumer goods. Following the initial decline, higher volumes than usual in the fall and winter allowed for a complete recovery led by large rises in grain products, potash and fertilizers as well as petroleum products.

The Port of Prince Rupert, which experienced similar challenges in the beginning of the year as the Port of Vancouver, recovered more sizably and handled 9% more tonnes of freight in 2020 (32.4 million tonnes), with significant increases of coal, wood products and grain. Demand for coal to generate energy in Asia gave rise to mine developments in western Canada and increased rail flows to Prince Rupert, which saw its thermal coal shipments increase 67% in 2020.

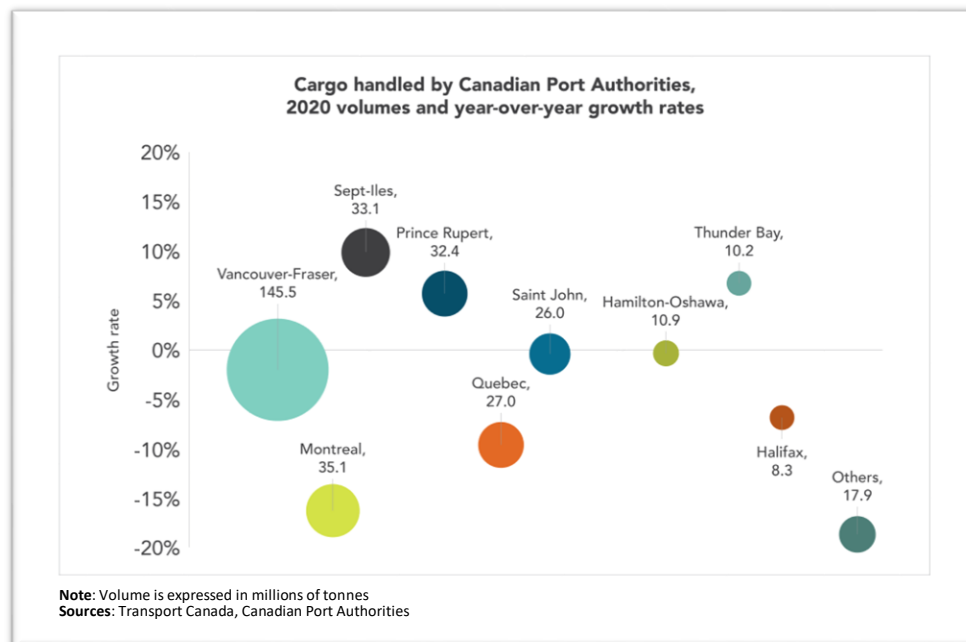
In Central Canada, the Port of Montreal handled 13.5% less tonnes in 2020 (35.1 million tonnes). This significant annual decline can be explained by different events and factors. In the beginning of the year, the rail blockades as well as the drop in global consumption and production due to COVID impacted negatively cargo volumes handled at the port. In the summer, as the economy started recovering, the strike at the Port of Montreal hit and led to further declines.



In the St. Lawrence Seaway, both the amount of cargo and the number of vessel transit decreased in 2020, by 1.7% and 6.8% respectively, which followed declines in 2019. The drop in total cargo was led by large decreases of liquid and dry bulk as well as iron ore.

In Eastern Canada, a decrease of 4% in tonnes handled was recorded in 2020 at the Port of Halifax (8.3 million tonnes). The decline was mostly driven by containerized cargo exports as well as non-containerized imports.

Volumes were soft in the first half of the year with large year-over-year declines because of softer economic conditions and railway blockades but were higher than usual in the last quarter of the year, which allowed for a partial recovery.



RAIL TRAFFIC AND PERFORMANCE

In 2020, railways moved a total of 324.7 million tonnes, a 1.7% decrease from 2019 (see rail flows in Canada at Map 6 in the [Annex A](#)).⁸ Rail traffic was impacted early in the year by the blockades and the COVID-19 pandemic but volumes recovered over the summer and the fall and allowed for a partial recovery.

The overall yearly decline in rail traffic was led by large decreases in shipments of specific commodities.

- The decline in shipments of motor vehicles and equipment (-22.0%) is attributable to the decline in consumption at the beginning of the year as well as public health measures and travel restrictions which reduced the need for personal vehicles
- For petroleum products and crude oil, large drops (-11.9% and -44.7%, respectively) are mostly due to the imposition of restrictions on air travel, the closure of the US-Canada border to non-essential travel as well as the shift from commuting to telework
- Shipments of coal fell (-7.5%) as a result of the long-term trend of phasing out coal fired power plants in Canada. Additionally, exports of coal suffered from the impact of the pandemic. Finally, the closure of the Neptune terminal at the port of Vancouver also led to a decrease of coal shipments
- Production and exports of forest products both increased which indicate that the decline in rail shipments of forest products (-5.7%) would likely be explained by a mode shift from rail to trucking

⁸ Including both federally regulated and provincially regulated railways that interchange with a federally regulated railway.

Shipments of containerized goods made a strong recovery from the initial decline, with consumers substituting from services to goods after the initial shock experienced in March and April, and ended the year slightly above 2019 levels (+0.4%).

Specific sectors (like grain, potash) were able to operate well throughout the different limitations this year brought, and took advantage of the improved utilization of assets and supply chain performance. Rail shipments of grain, fertilizers and potash were significantly higher than in 2019 (+17.9%, +11.1% and +8.5%, respectively). This large increase of grain movements can be attributed to a large Canadian harvest as well as lower harvests in competitor markets. Potash shipments benefited from contract settlements with China and efforts to make up for reduced applications in previous years.

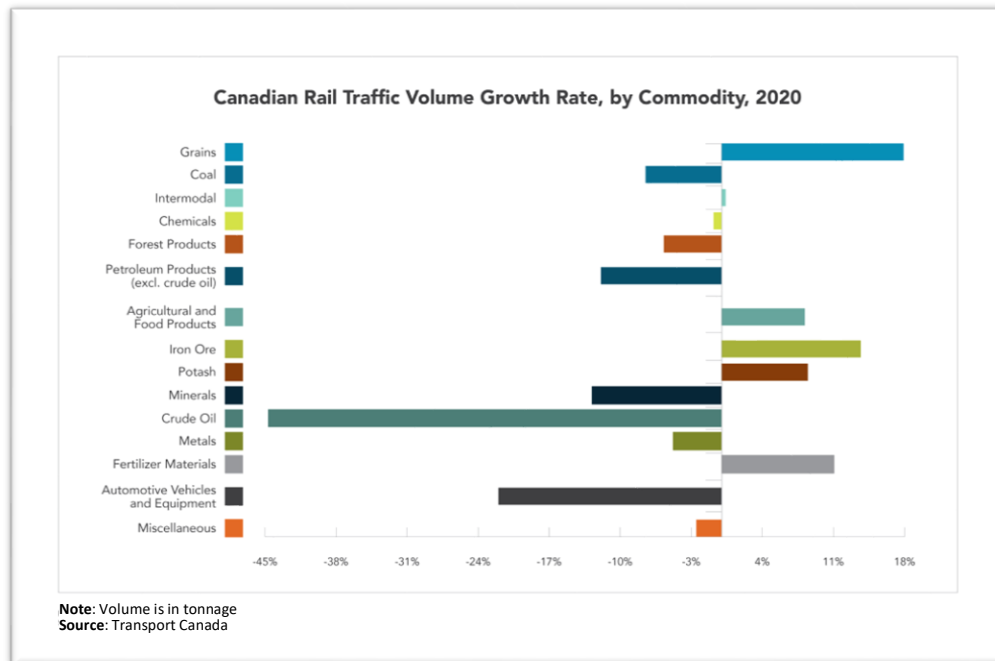
Regional differences were observed. Total rail shipments in Western Canada were 1.4% lower than in 2019, supported by the strong recovery in import containers and export bulk, while they were 4% lower in Eastern Canada owing to the large drop in domestic manufacturing due to COVID-19 and blockades on the rail network.

CONTAINER SUPPLY CHAIN PERFORMANCE

Despite the global pandemic, total container traffic handled at West coast ports remained steady compared to 2019. The Port of Vancouver recorded an increase in total container volumes (+2.0%), while volumes at the Port of Prince Rupert decreased by 5.7%.

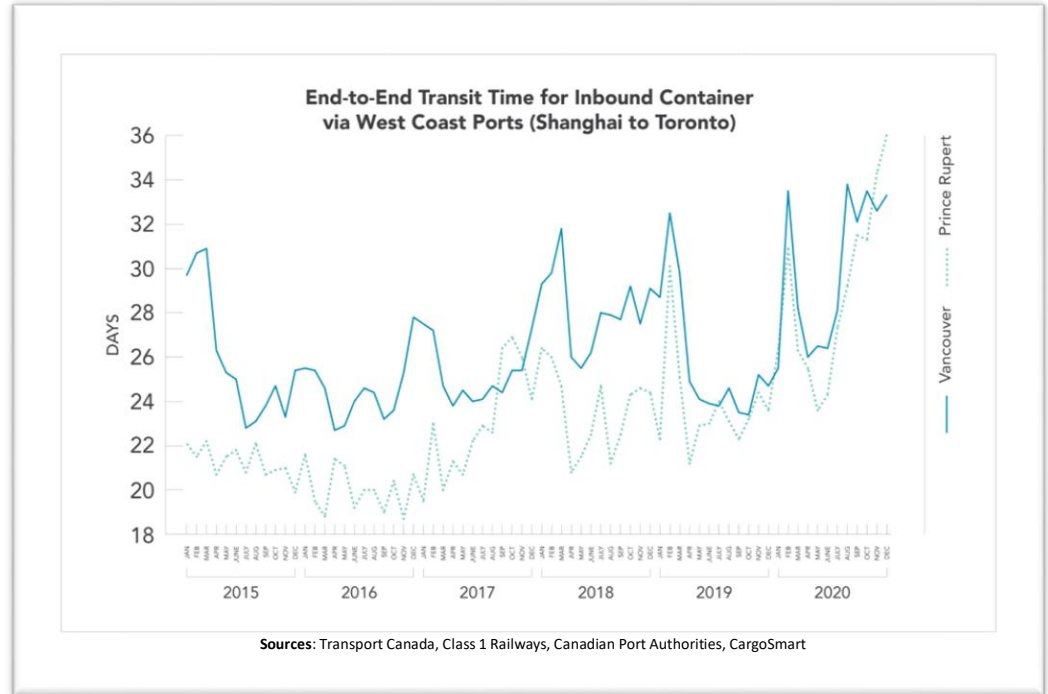
Due to an increase in demand for consumer goods in North America, inbound container volumes rebounded in the spring which led to an imbalance of inbound and outbound containers. In a period of high demand for containers, this led to challenges getting empty containers to be stuffed with export cargo such as forest products and grains. Moreover, the surge of inbound containers at the end of 2020 was much higher than usual which impacted the fluidity of the supply chain.

Transit time to ship a container from Shanghai to Toronto via West Coast ports⁹ in the first half of 2020 was slightly above the three-year average benchmark, averaging 27.3 days. However, transit time reached 32.0 days in the second half of the year, 6.5 days above the three year average, as the transportation system was impacted by the ramp up in demand for consumer goods, higher than normal container throughput at Western Canada ports, and poor performance of ocean container carriers. Despite the volatile year, transit time for Western Canada ports remained competitive throughout the year compared to other U.S. ports, like Los Angeles/Long Beach and Seattle/Tacoma.



⁹ Transport Canada's measure of end-to-end transit times encompasses ocean transit from origin in Asian and European ports, dwell at the Canadian port, and in-land (rail and truck) transit to major inland North American hubs like Toronto and Chicago.

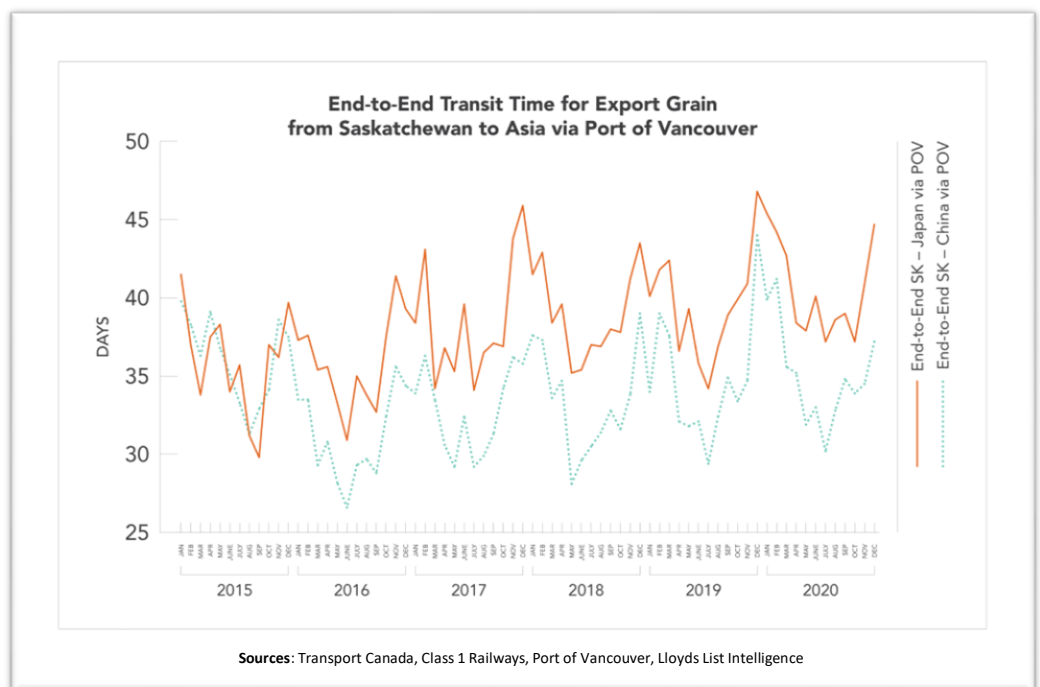
On Canada’s East coast, total container volumes decreased by 7.1% compared to 2019. This was led by declines at the Port of Halifax (-7.2%) and the Port of Montreal (-7.9%) which is likely attributable to the decline in economic activity due to the pandemic as well as the strike that paralyzed the Port of Montreal in August. On the other hand, total container volumes increased at the Port of Saint John - +14.9%), which benefited from some diverted vessels from the Port of Montreal during the strike.



The supply chain was relatively fluid over the first half of 2020 with end-to-end transit time of containers from Antwerp to Toronto through the ports of Montréal and Halifax at 18.9 days, only slightly above the three year average of 18.2 days. However, the strike at the port of Montreal caused significant fluidity challenges, with transit time reaching 23.1 days in the second half of the year, 5.5 days above the three year average.

WESTERN GRAIN SUPPLY CHAIN PERFORMANCE

In Western Canada, crop supply (production and carry-forward) reached 85.7 million tonnes for the 2020-21 crop year. This is slightly higher than the supply in 2019-20 of 85.1 million tonnes. The current crop year recorded higher than expected yield (production increased by 3.6%) and smaller carry forward stocks (-20.7%) compared to 2019-20. Large crop supply continued to lead to significant seasonal demand on the transportation system going into the fall and winter months.



From August (start of the crop year) to December 2020, there were large increases in volumes of grain shipped from the prairies (+18%), as well as exports from Western ports (+36%) compared to the same period last year. Those increases are explained in part by earlier than usual harvest as well as strong global demand for Canadian agri-products. Rail carriers also had more capacity to move grain due to a reduction in shipping demand for other commodities.

At the beginning of the crop year, vessel anchoring on the west coast was low, indicating the supply chain was fluid on the West Coast. However, in November 2020, there was a spike in vessel anchoring at the Port of Vancouver and in the Gulf Islands with up to 87% of anchorages occupied, and over 30 grain vessels anchored. This aligned with a softening of cargo export arriving by rail at the port and an increase in vessel arrivals. Following this spike, occupancy came down to 53% in late December, and less than 20 grain vessels anchored.

Overall, the grain supply chain was relatively fluid through the beginning of the 2020-21 crop year (August to December) despite significantly higher volumes of grain moved across Western Canada over that period. End-to-end transit time to ship grain from Saskatchewan to Asia through the Port of Vancouver remained on par with the three-year average. From Saskatchewan to China, the average transit time was 40.1 days while it took 34.6 days to ship grain from Saskatchewan to Japan. Transit times peaked in December 2020, but remained lower than the three-year average for both China and Japan.

AIR CARGO PERFORMANCE

In 2020, airports in Canada handled 1.18 million tonnes of cargo loaded and unloaded from domestic and foreign carriers, a 17.4% decrease from 2019.

The 3 busiest airports for air cargo were the Toronto Pearson International Airport (302.7 thousand tonnes or 35% less than in 2019), the Vancouver International Airport (230.1 thousand tonnes or 21.3% less than in 2019) and the Hamilton International Airport (123.4 thousand tonnes or 24.9% more than in 2019).

While the sector saw an overall decline in 2020, the import of certain goods witnessed unprecedented growth. Those which saw large increases related directly to the global pandemic, such as pharmaceuticals (including vaccines); which saw an increase of 4.9%; and textiles (including masks), which witnessed a staggering increase of 6604%.

CROSS BORDER TRAFFIC AND PERFORMANCE

Truck traffic declined in 2020 (-7.8%), with 10.1 million 2-way trucking movements at Canada-US border points compared to 10.9 million 2-way trucking movements in 2019 (See Map 8 in [Annex A](#)). It was also below the 3-year average (-8.7%). Despite stricter public health measures, truck border crossings had almost fully recovered by the end of the year, hovering close to 2019 levels. Trucking was deemed an essential service by governments which allowed the industry to continue to operate. Moreover, the consumer shift from services to goods had a positive impact on the demand for freight transportation.

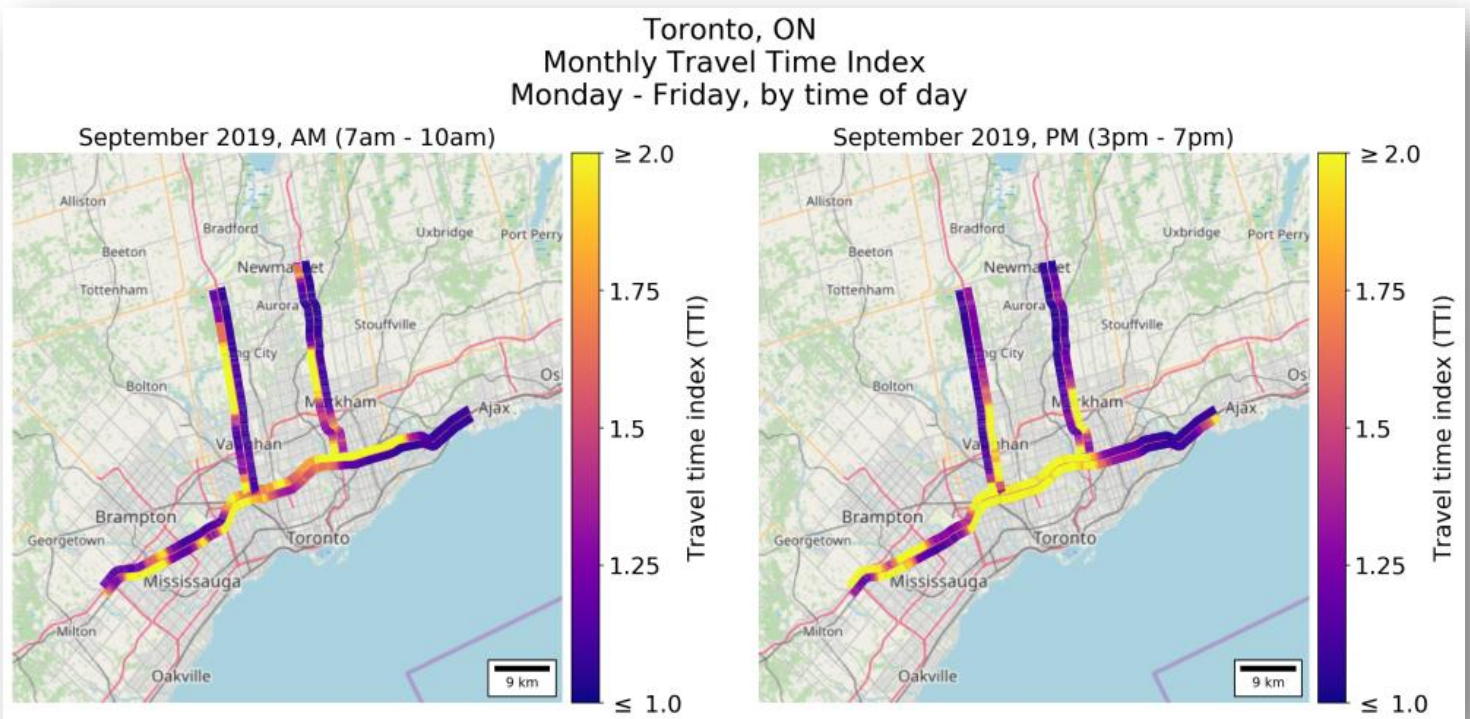
Amid lower truck traffic at each of the top 15 border crossings monitored, the majority of border wait times for southbound trucks also declined in 2020. The average median wait time of southbound trucks at the 15 border crossings monitored was 10.1 minutes, a 15.3% decrease in wait times over the 3-year average, or 1.9 minutes faster.

Only Fort Erie, Ontario; St. Stephen, New Brunswick; and Pacific Highway, British Columbia displayed an average median wait time for southbound trucks which was higher than the historical 3-year average. Pacific Highway, British Columbia, and Lansdowne, Ontario had the longest southbound truck border wait times in 2020.

URBAN MOBILITY

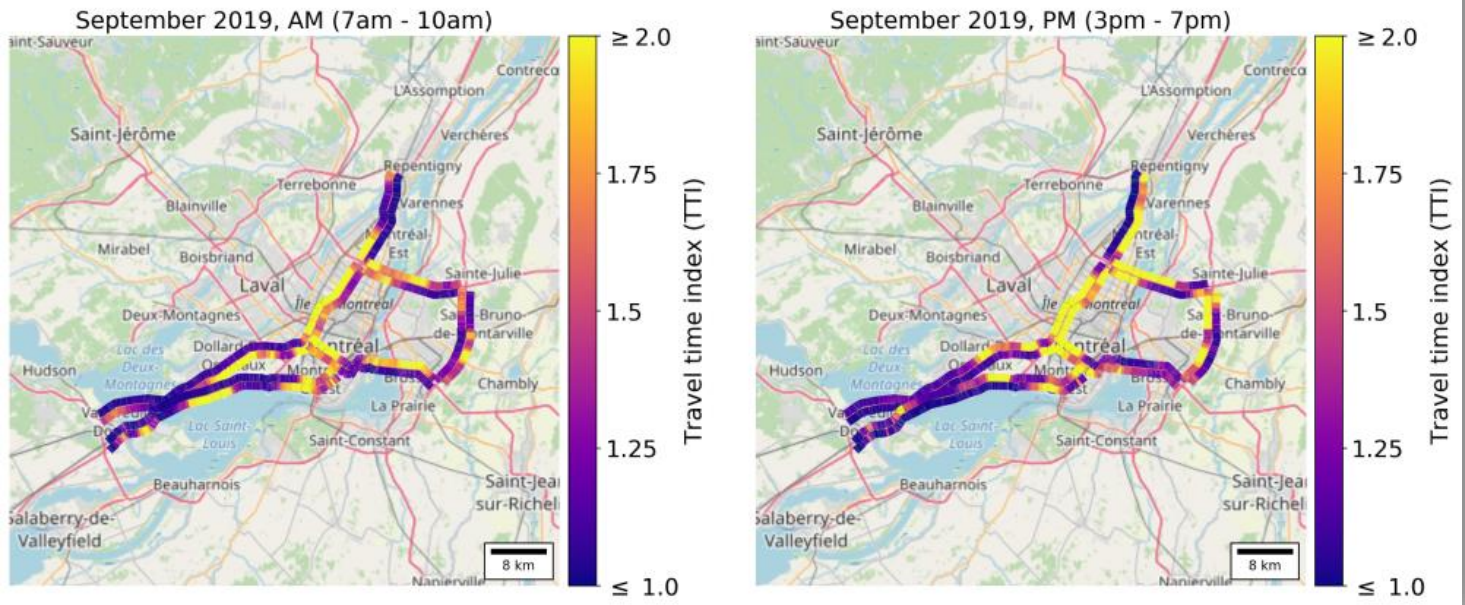
Beginning in March 2020, due to COVID-19 stay-at-home measures, traffic in urban areas across the country was significantly reduced. April 2020 saw so little traffic that conditions were essentially free-flow on all major urban roads and highways in the country. By September, with partial reopening taking place at different rates across Canada, some traffic congestion had returned albeit at lower levels than the previous year.

In 2019, Highway 401 in Toronto was among the most congested urban corridors in Canada with up to 275% longer average peak period travel times on some segments in comparison to free-flow conditions. In September 2020, peak period travel times had decreased by 26% on average compared to 2019, and the average congestion remained below levels considered “severe”.



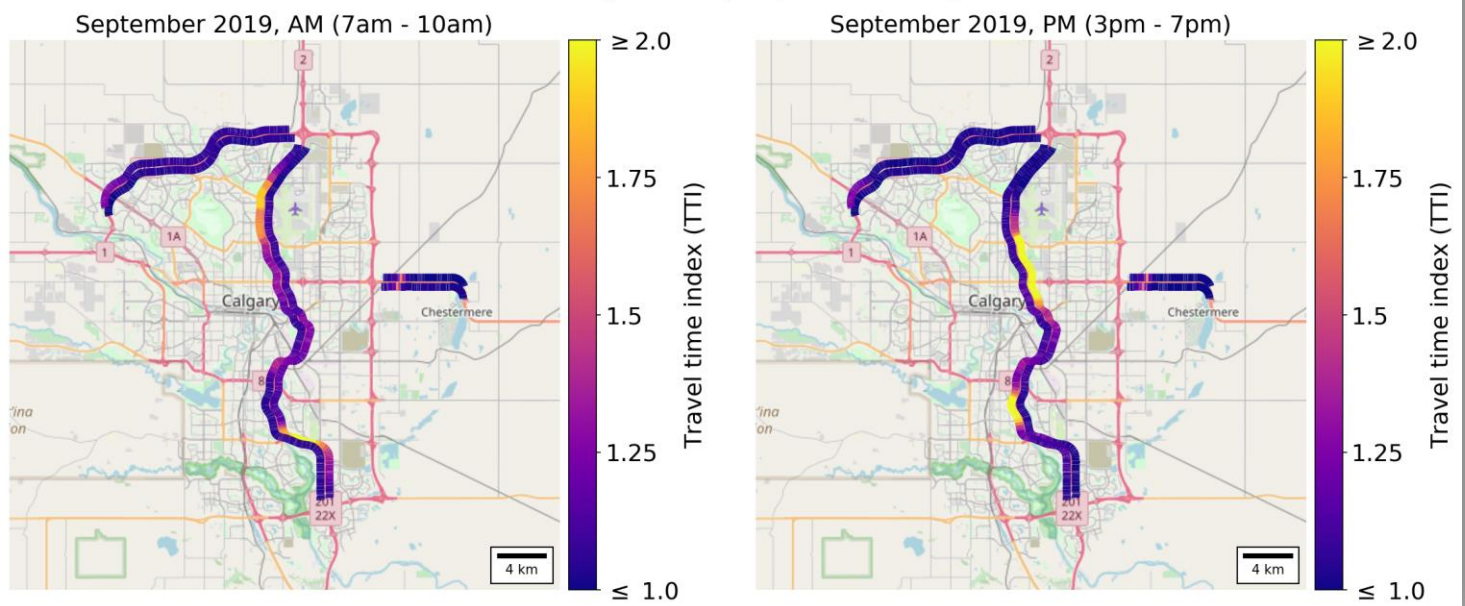
In Montreal, the westbound highway A-40 saw an average 33% decrease in travel time between Blvd. Décarie and A-25 from September 2019 to September 2020. Despite the pandemic, peak period urban traffic in Montreal had twice the average travel time on some highways in September 2020 compared to free-flow conditions.

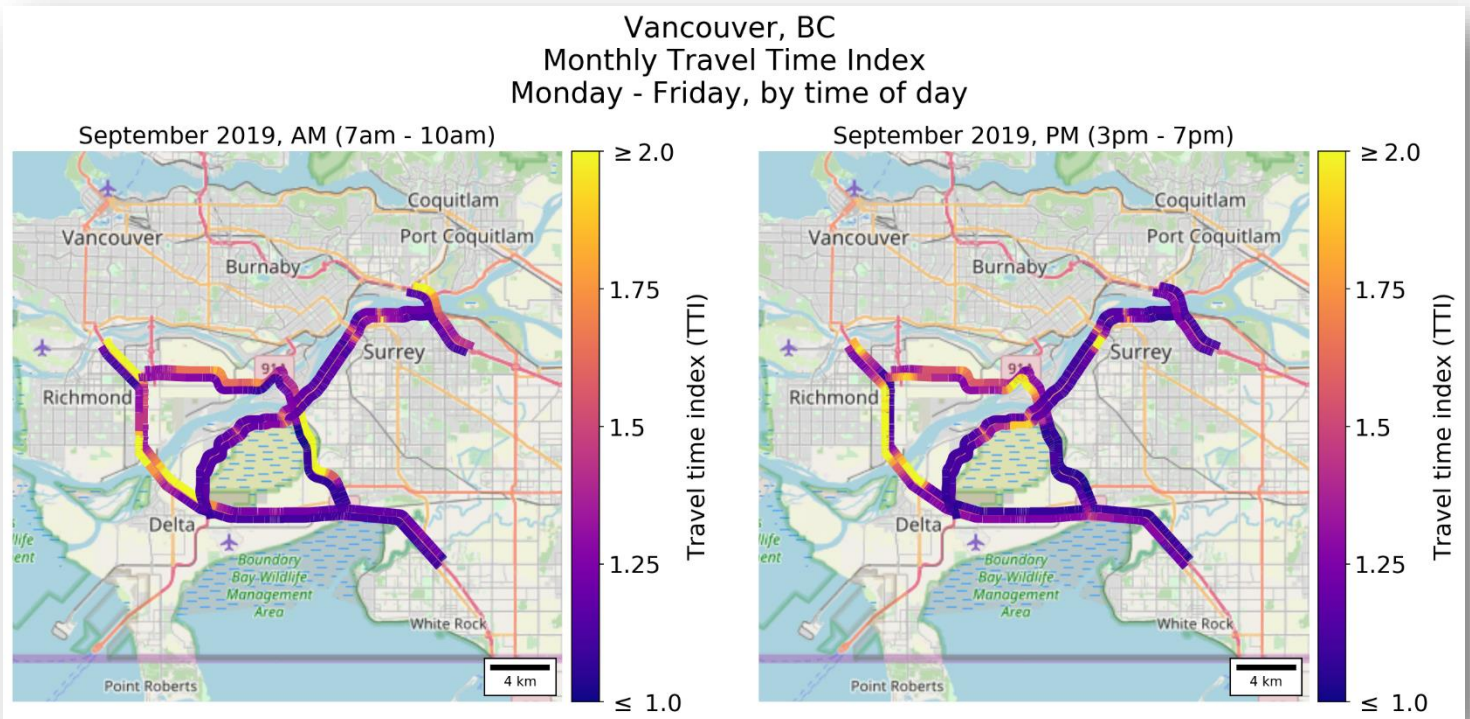
Montréal, QC
 Monthly Travel Time Index
 Monday - Friday, by time of day



In Western Canada, the Calgary-Edmonton corridor continues to be 1 of the most heavily used by passenger and commercial traffic. In Calgary, peak period travel times in September on northbound Highway 2 decreased by 26% compared with the same month of the previous year. In Vancouver, the peak period travel time on southbound Highway 99 decreased by an average of 33% from September 2019 to September 2020.

Calgary, AB
 Monthly Travel Time Index
 Monday - Friday, by time of day





In the 4th quarter of 2020, travel time index across the country began to decline again as the COVID-19 pandemic situation worsened with the second wave. A return of stay-at-home orders and business closures caused a reduction in the traffic congestion in major urban areas to levels previously seen in the spring-summer of 2020. Highway-401 westbound across Toronto saw an afternoon TTI of 1.4 in December of 2020, a 24% reduction compared to 2019. Autoroute-40 eastbound through downtown Montreal saw an afternoon TTI of 2.0 in December of 2020, a 20% decrease relative to 2019.

PARTNERSHIPS AND COLLABORATION

Transport Canada invests in multi-stakeholder partnership projects on data gathering and supply chain visibility to foster regional evidence-based dialogue, promote optimization of existing capacity, and support planning and coordination of private/public investments. Over the last decade, Transport Canada has been collaborating with government and industry partners, including Canadian Port Authorities, railways, and shippers to enhance data visibility and knowledge about supply chain fluidity and reliability.

For example, Transport Canada supports ports, railways, and other partners to plan their operations and manage fluidity by sharing the Canadian Border Services Agency advanced arrival information for inbound containerized cargo destined for select Canadian ports.

SUPPLY CHAIN VISIBILITY PROJECTS

Building on the success of the pilot project developed at the Port of Vancouver, Transport Canada invested an additional \$6 million through the National Trade Corridor Fund to support the Port of Vancouver, the Port of Prince Rupert and other Pacific Gateway Partners to develop visibility for additional modes and commodities through the West Coast Supply Chain Visibility Program. The program will provide insight to inform decisions for infrastructure investments, policy decisions and day-to-day operations.

Transport Canada also recognizes the need to help support productivity, competitiveness and trade corridor fluidity in the urban context, and to this end is working with partners on supply chain visibility initiatives in Ontario's Greater Toronto and Hamilton region. Using a mix of public and private data sets, the Smart Freight Centre, the Toronto Region Board of Trade, and the Hamilton Oshawa Port Authority and the McMaster Institute of Transportation and Logistics (Fluid Intelligence) have each launched individual projects (in collaboration with multiple partners) that focus on urban mobility, air cargo and marine trade and transportation.

The Ontario supply chain visibility initiatives are unique in that each of the 3 key organizations have responsibilities for specific sets of public or private transportation data, relevant to their distinct areas of research, analysis and collaboration, and undertaking initiatives that will serve to improve supply chains in the region and also contribute to the Canadian Centre for Transportation Data at Statistics Canada.

COMMODITY SUPPLY CHAIN TABLE

Collaboration among industry stakeholders is critical to ensure an efficient transportation system. To that end, the Commodity Supply Chain Table (the Table) brings together over 150 stakeholders from the freight rail industry such as producers, shippers, service providers and other supply chain partners involved in moving commodities by rail to identify and address transportation system issues. The Table is national and is an inclusive discussion forum that focuses on the resiliency, efficiency, effectiveness of Canada's freight rail-base transportation system. Although facilitated by Transport Canada, participants are very active in the development of meeting agendas, presentations made during the meetings, etc. The Table focuses on the needs of the transportation stakeholders.

Although the Table meets twice a year since 2014, in 2020 Transport Canada organized 5 (5) meetings, all held virtually, in response to the needs of participants as the supply chain adjusted to the impacts of COVID, and other disruptions and challenges that occurred in parallel to the pandemic, such as shortage of containers for exports, winter challenges, blockades and strikes.

Among other things, Transport Canada, railways, shippers and marine stakeholders presented on and exchanged on the performance and challenges of their supply chains, economic projections and upcoming demand for transportation service, and/or mitigating actions for disruptions. In 2020, the Minister of Transport, the Deputy Minister and the Associate Deputy Minister of Transport Canada each individually attended 1 meeting and exchanged with the participants. Such collaboration and open dialogue between participants and with Transport Canada have helped improve monitoring, planning and coordination among supply chain partners and in turn, supported the timely delivery of essential goods and consumers' freight, as well as exports of Canadian goods, supporting the Canadian economy and response to COVID.

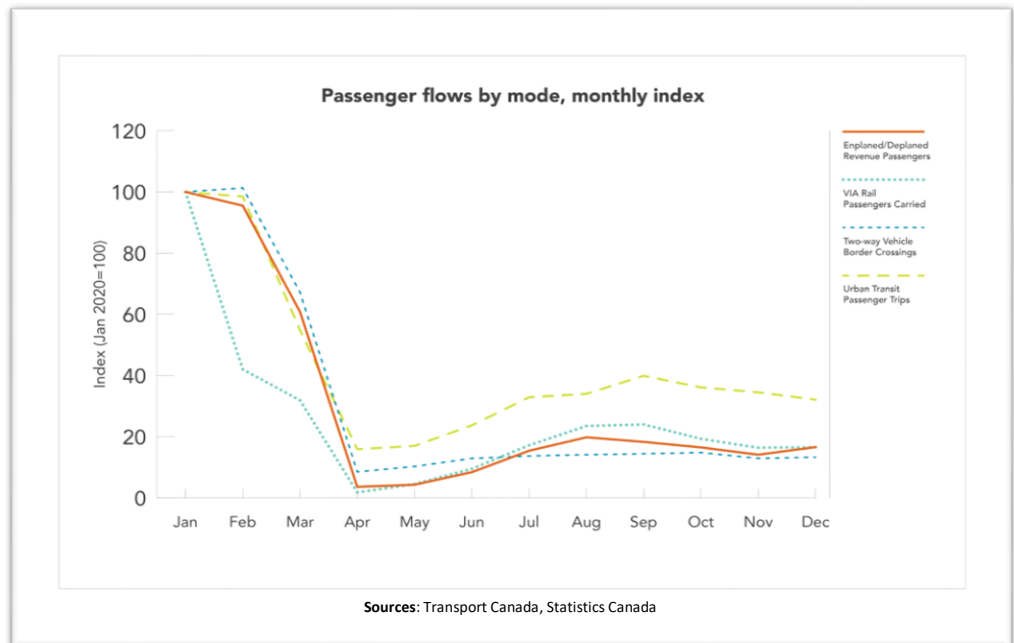
PASSENGER TRAFFIC FLOWS

In 2020, all modes of passenger transportation faced tremendous challenges leading to drastic reductions of passenger flows and no meaningful recovery. The COVID-19 pandemic, but more specifically the restrictions put in place from various levels of governments to limit its spread have profoundly altered travel patterns. Air transportation was the most affected sector, along with the cruise industry which suffered from a ban in 2020. In contrast, public transportation, which is necessary for many of Canada's essential workers, succeed in recovering a significant share of its lost ridership in the second half of 2020.

AIR PASSENGER FLOWS AND PERFORMANCE

The air passenger industry has been hit hard by the COVID-19 pandemic. Small gains were made throughout the year, but the recovery of Canada's air passenger sector has been slow. In comparison, recovery in the US has been more significant, mainly driven by their larger market for domestic travel.

Overall, the pandemic, along with the restrictions put in place to control it, have resulted in Canadian airports reporting an estimate of 45.6 million air passengers. This represents a stark decrease of 71.8% over 2019 (see passenger flows for main Canadian airports on map 8 in Annex A).



This reduced demand has left operators in a precarious position, having to resort to cost cutting tactics which only mildly softened the blow. Many airlines have had to cut back on services across the board, which has the potential to disconnect communities that lack other methods of travel to larger cities. Over 140 remote communities currently rely on air transportation to connect them to larger hubs.

In 2020, the air sector served:

- 28.4 million passengers on domestic services (69.3% less than in 2019)
- 7 million passengers on services between Canada and the US (78.1% less than in 2019)
- 10 million passengers on other international services (72.8% less than in 2019)

Around 89.4% (40.7 million) of the total air passenger traffic was handled at Canada's Top 20 airports.

- Toronto Pearson International served 12.9 million passengers (73.7% annual decline), representing 28.3% of national air passenger traffic
- Vancouver International served 7 million passengers (72.2% annual decline), representing 15.5% of national air passenger traffic
- Montreal-Trudeau International served 5.1 million passengers (73.3% annual decline), representing 11.3% of national air passenger traffic

The *Air Travel Performance Data Regulations* came into force in December 2019 to accomplish 3 goals:

- assist in assessing and monitoring the effectiveness of the Canadian Transportation Agency's *Air Passenger Protection Regulations*
- assess and monitor air passengers' experience, and make evidence-based policy decisions, and
- monitor industry performance trends and inform consumers' decision-making by publishing certain performance statistics via the Canadian Center for Transportation Data

These regulations require air carriers to report on operational performance: including on-time performance data (departures, arrivals, cancellations, and the causes of delay), data on tarmac delays, denied boarding, baggage data, and complaints data.

MARINE SECTOR

During the onset of the pandemic, the world bore witness to COVID-19 outbreaks on a number of cruise ships around the world, ultimately leading to the cessation of the cruise industry in Canada. In response, there was no cruise ship traffic at Canada's major ports over 2020. The ban on cruise ships entering Canadian ports is currently extended to February 28, 2022.

Ferries have also been effected by restrictions put in place by multiple levels of government. While the majority of domestic ferries are still operational, traffic levels have declined significantly as they adjust to accommodate physical distancing measures, passenger limits, and service level adjustments.

In 2020, BC Ferries transported 13,972,264 passengers, 37.4% fewer than 2019. Looking at passenger numbers from April 1-December 31 shows an even larger reduction in ridership of 42.1%.

International ferries face more complex issues in their recovery, and while some remained operational in the first quarter of 2020, most ceased operations when additional restrictions limiting border crossings to essential travel came into effect. However, 1 international ferry remained in operation throughout 2020, though at a greatly reduced service rate. This is the ferry route between St-Pierre-et-Miquelon, France and Newport, Newfoundland and Labrador.

RAIL SECTOR

The volume of passengers traveling by rail was significantly impacted by the COVID-19 pandemic. VIA Rail's annual passenger traffic declined 76.8% to around 1.2 million in 2020. The Quebec City - Windsor corridor, historically the busiest part of VIA Rail's network, witnessed a decrease of 77.1% from 2019, at just 1.1 million passengers.

The pandemic also resulted in the suspension of many important routes throughout Canada. Suspended routes ranged from popular routes such as Vancouver-Toronto, to less frequented routes such as Windsor-Churchill. In light of this, VIA Rail opted to use this downtime to accelerate inspection and repair programs.

In 2020, 13 thousands passengers used rail carriers to cross Canada-US border points, down 93.6% from 2019. The number of travelers entering or returning to Canada by rail in January 2020 was 11.7% higher than in January 2019. For February and March 2020, the number of travelers had fallen by 51.1% compared to the same period in 2019. Over the remaining of the year, there were no travelers entering or returning to Canada by rail.

ROAD SECTOR

Unlike commercial vehicle movements, the number of 2-way passenger vehicle movements recorded at Canada-US border crossings in 2020 was down 76% compared to 2019, at 12.9 million. The imposition of restrictions on non-essential services explain this decline and the lack of significant recovery. In December 2020, the number of 2-way passenger vehicle movements was still 89% lower than in December 2019.

The travel time index presented in the freight section is also a good indicator of passenger travel performance, with higher values indicating more traffic and congestion on the urban road network, which is used by both freight and passenger vehicles.

PUBLIC TRANSPORTATION SECTOR

There was a drastic reduction in public transportation ridership throughout 2020. In 2020, public transit systems carried around 849 million passengers, a 55% decrease from 2019.

During the early stages of the pandemic the loss of ridership was much larger, reaching upwards of 90%. The sector began a period of recovery during the summer months, when daily COVID-19 cases were low, with consecutive months of growth from June-September. Following this rebound, ridership declined again as the country entered the second wave of cases. December marked the tenth month of decline year-over-year, with networks carrying 52.5 million passengers, down 65.8% from December 2019.

Recovery has differed across Canada's regions. In Quebec and Ontario, ridership declined 79% from 161 million passengers in February to 26 million in April. The region finished the year with 33 million riders in December, a decline of 69% year-over-year.

The western provinces and territories followed a similar path as Quebec and Ontario, with ridership also declining by 79% during the onset of the pandemic. December saw a 60% decline in passengers versus the same period in 2019.

Atlantic Canada saw ridership levels drop 77% from 2.6 million passenger trips in February to 600,000 in April. Since then, ridership increased to 1.3 million trips in December, 48% of their pre-pandemic levels. The Atlantic region has experienced the highest levels of recovery throughout the country.

Transit Agencies have been taking steps to adapt to the situation. For example, in Ontario, the Metrolinx Go Transit system has faced ridership declines of more than 90%. It has responded by reducing frequency – such as the express line which connects Toronto's Union Station to Toronto-Pearson Airport – and replacing some of the more heavily effected routes with buses.

SAFETY AND SECURITY TRANSPORTATION

Canada continued to have a safe and secure transportation system.

AIR SECTOR

In 2020, 144 aviation accidents (under the *Canadian Aviation Regulations*) involving Canadian-registered aircraft were recorded, down 28% from the average of the previous ten years. These accidents caused 13 fatalities, a significant decrease compared to 54 fatalities in 2019.

In 2020, Canada continued to take steps to facilitate the flow of legitimate air travellers and goods while maintaining its high level of aviation security. The Canadian Air Transport Security Authority screened over 65 million passengers and their belongings at Canadian airports.

MARINE SECTOR

Canada has a strong record of safe and secure marine shipping. Given the thousands of ships that operate in Canadian waters, there are relatively few accidents. In 2020, there were 215 reportable accidents involving at least 1 Canadian registered vessel, down from the ten-year average of 234.¹⁰

¹⁰ Statistical information provided by the Transportation Safety Board.

RAIL SECTOR

In 2020, there were an estimated 965 recorded railway accidents, down 23.2% from 2019. These accidents resulted in 59 fatalities, down 19.2% relative to the average for the previous ten years.¹¹ Accidents relating to dangerous goods decreased 52.1% to 81.

ROAD SECTOR

In 2019, road casualty collisions were around 9% lower compared to 2014, despite significant growth in the number of licensed drivers, vehicles registered and vehicle kilometers driven. Canada's fatality rate per 10,000 registered motor vehicles was 0.69 in 2019, a rate that has been relatively stable in recent years but significantly lower (-35%) than a decade earlier.¹²

GREEN TRANSPORTATION

Overall, domestic transport-related greenhouse gas emissions have increased by 15% over the past decade (2009 to 2018). Canada's National Inventory Report 1990-2018 indicates decreased emissions for marine transportation, and increased emissions for aviation, rail and road transportation (see chart next page). For the latest historical emissions estimates for Canada, including for transportation, please consult <https://www.canada.ca/en/environment-climate-change/services/climate-change/greenhouse-gas-emissions/inventory.html>.

AIR SECTOR

In 2018, domestic aviation emitted 8.1 megatonnes of CO₂e. This accounts for 4.4% of domestic transportation-related greenhouse gas emissions. While emissions from air travel have increased since 2005 owing to increased air traffic, reporting under *Canada's Action Plan to Reduce greenhouse gas Emissions from Aviation* identifies a steady improvement in air carrier emission intensity performance, specifically a 2% average annual improvement or a cumulative improvement of 18.4% from 2008 to 2018¹³. Between 2017 and 2018 Canadian air carriers improved their overall fuel efficiency by 3.3%.

MARINE SECTOR

In 2018, the domestic marine sector emitted 4.1 megatonnes of CO₂e. This is 2.2% of domestic transportation-related greenhouse gas emissions. Over the 2005 to 2018 period, domestic marine greenhouse gas emissions decreased by 15%, in part as shippers have shifted to other modes such as trucks and rail.

In calendar year 2020, the National Aerial Surveillance Program flew a total of 3765 hours of surveillance over Canada's 3 coasts, including 304 to monitor the North Atlantic right whale. During these patrols, 673 pollution incidents were detected and the quantity of oil observed in the marine environment was estimated at around 17,319 litres. Regular aerial surveillance flights contribute significantly to the decrease in oil discharges from commercial vessels at sea, as ships are increasingly aware their illegal polluting activities can be detected.

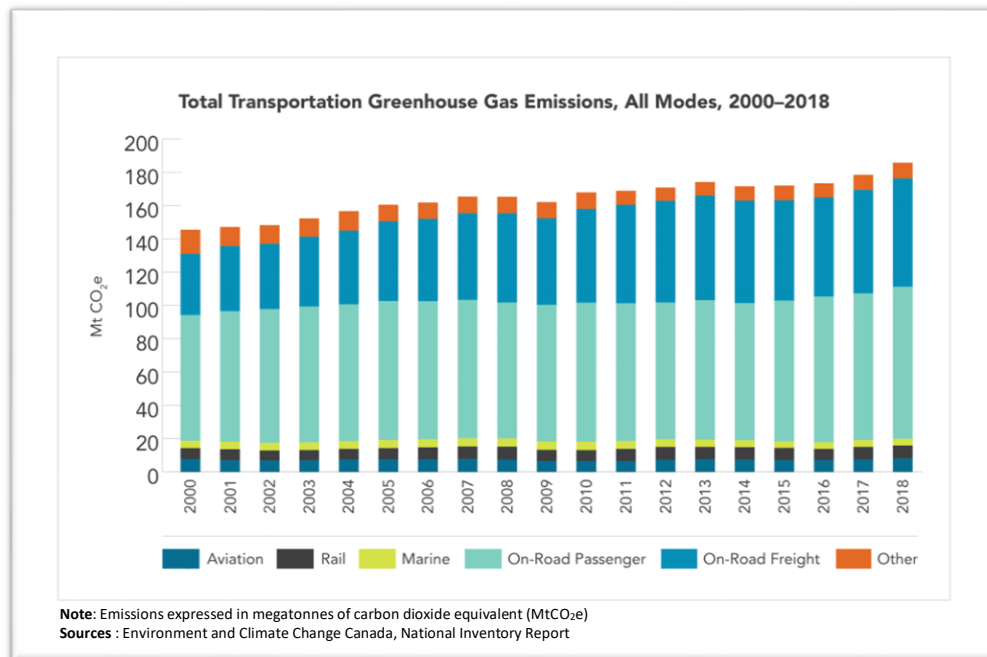
¹¹ Data is from the Transportation Safety Board website. Occurrences where investigations are ongoing are not included.

¹² Collisions with deaths and injuries.

¹³ The annual report on Canada's Action Plan to Reduce GHG Emissions from Aviation provides information on energy use and emissions by Canada's air carriers. It differs in scope and methodology from the official emissions accounts reported in Canada's national inventory for aviation.

RAIL SECTOR

In 2018, the rail sector emitted 7.8 megatonnes of CO₂e. This is 4.2% of domestic transportation-related greenhouse gas emissions. Freight operations accounted for 98% of rail greenhouse gas emissions. According to the latest annual *Locomotive Emissions Monitoring Report (2017)*, Canadian railways have reduced their greenhouse gas emission intensity by 2.45 kg CO₂e per 1,000 revenue tonne kilometres compared to 2010¹⁴. This has limited the net growth of greenhouse gas emissions in this sector to 0.2 MT CO₂e from 2011 to 2017, despite freight traffic increasing by 19.4% (revenue tonne kilometres) and intercity passenger traffic increasing by 4.1% (passengers).



ROAD SECTOR

In 2018, the road transportation sector emitted 156 megatonnes of CO₂e, or 84% of transportation-related greenhouse gas emissions and 21% of total Canadian greenhouse gas emissions.

From 2005 to 2018, road transportation greenhouse gas emissions grew by 19%. Despite fuel efficiency improvements across all vehicle classes, this increase stems from:

- growth in passenger and freight activity
- a shift towards more greenhouse gas-intensive transportation, including heavy duty trucks and larger passenger vehicles (for example, SUVs and light trucks)

Greenhouse gas emissions from on-road freight vehicles increased by 35.8% between 2005 and 2018, from 48 to 65 megatonnes. Over the same period, road freight activity, measured in tonne-kilometres, also increased by around 35%.

Greenhouse gas emissions from on-road passenger vehicles increased by 9.3% between 2005 and 2018, from 84 to 91 megatonnes. Over the same period, road passenger activity measured in vehicle passenger-kilometres increased by about 17%.

Federal regulations have set progressively stricter greenhouse gas emission standards for both new passenger automobiles and light trucks of model years 2017 and beyond, and new heavy-duty vehicles and engines of model years 2021 to 2027. This builds on existing standards covering earlier model years.

¹⁴ The latest annual Locomotive Emissions Monitoring Report produced by the Railway Association of Canada provides information on energy use and emissions by Canada's railways, and differs in scope and methodology from the official emissions reported in Canada's National Inventory Report for rail.



TRENDS IN INNOVATION

Remarkable advances in information, communication, and other technologies and innovations took place over the past 2 decades. The application of these technologies has brought considerable change to nearly every sector of the economy, including transportation. New technologies are being applied to transportation infrastructure, equipment, and supply chain management in an effort to make them smarter and more efficient. For example, technological changes, such as ride sharing and “last-mile” delivery services have altered both how and where transportation occurs and will continue to disrupt transportation in the future.

This trend shows no sign of slowing down, and in fact, is likely to accelerate as the public and private sector adjust to new operational environments. Technological changes and innovation will continue to impact both demand for and supply of transportation equipment and services. Major disruptions are expected from technologies in 3 categories of operational readiness, from those past the operational tipping point (cloud logistics, internet of things, etc.); to technologies on the cusp of widespread operationalization (AI, advanced analytics, blockchain, etc.); and finally with advanced technologies (electric vehicles, automation and robotics, etc.), which are at varying levels of operational readiness across jurisdictions, industries and modes.

Such innovations in the transportation sector have the potential to optimize corridor flows, reduce costs, improve safety and reduce environmental impacts, and alter the origins and destinations of shipments and the nature of transportation services. In the freight sector, technologies can enable supply chain stakeholders to optimize their existing infrastructure and work technology-driven efficiencies into new infrastructure as it is built. Supply chain visibility and transparency also promises to be further enhanced by new technology, fostering greater cooperation across fragmented supply chains. Writ large, technologies carry the potential to drive better decisions, increase productivity, streamline freight and intermodal processes, develop new data-driven business models, and harness economic and trade benefits.

Innovation is often mentioned as a key contributor to productivity gains and therefore to economic growth. According to Statistics Canada's Survey of Innovation and Business Strategy data, the percentage of innovative businesses in the transportation and warehousing industry increased from 62.5% for the 2007-2009 period to 70.2% for the 2015-2017 period. However, despite the fact that the transportation industry introduced more innovative practices, it still lagged behind the national average of 79.3% in 2015-2017.

As the pace of transportation innovation accelerates, it is critical that the Canadian transportation sector readies itself for the continual arrival of emerging and disruptive transportation technologies, including connected and automated vehicles (CAVs). If integrated properly into existing transportation system, CAVs have the potential to help address many urban transportation challenges in Canada's largest cities, including congestion, urban movement of freight, affordability, and accessibility. However, the potential risks associated with mass CAV deployment will need to be mitigated through sound planning processes and effective policy tools to prevent unintended consequences such as increased congestion, a modal shift away from mass transit, and increased socio-economic inequity.

To further examine the potential risks and benefits associated with mass connected and automated vehicle use in Canada, Transport Canada and Innovation, Science and Economic Development Canada created the Advisory Group on the Vehicle of the Future (connected, automated, clean, shared) in 2018. The group included representation from senior members of government, industry, academia and non-government organizations. The findings of the group are included in a comprehensive report currently under review by Transport Canada and senior officials from Innovation, Science and Economic Development Canada.

Transport Canada was also a member of the Task Force on Urban Mobility, which was created in 2019 by the Council of Ministers Responsible for Transportation and Highway Safety. The task force provided a regular forum to engage with provincial counterparts on the mobility issues affecting passenger and freight transportation in Canadian cities. The task force's final report considers a number of policy areas of relevance to urban mobility, for example, complete communities and congestion management, and provides jurisdictional examples of mobility policy implementation. The report also considers how COVID-19 has impacted urban mobility in Canada. The final report was approved by the Council of Ministers Responsible for Transportation and Highway Safety at their February 2021 meeting.

With funding under the Trade and Transportation Corridor Initiative, Transport Canada launched the [Program to Advance Connectivity and Automation](#) in the Transportation System in 2017. This program is helping Canadian jurisdictions prepare for the array of technical, regulatory and policy issues emerging as a result of connected and automated vehicles. The Program undertakes and supports research, and technical studies in areas such as the security, integrity, and privacy of connected and automated vehicle communications – security credential management systems, road infrastructure cybersecurity, and talent development for road authorities.

The program is also providing \$2.9 million in grant and contribution funding over 4 years, to support 15 projects that assist Canadian jurisdictions prepare for these new technologies. Funded projects include:

- testing vehicle-to-infrastructure communication technologies and applications to reduce fuel consumption at the City of Ottawa, and for emergency vehicle signal pre-emption at the City of Calgary
- updating the Intelligent Transportation System Architecture, which is a common framework for planning, defining, and integrating intelligent transportation systems
- studying the impacts of automated and connected vehicles for pedestrians with sight loss
- supporting testing of connected and automated vehicle technologies, such as low-speed automated shuttle trials in Calgary and Toronto, establishing a connected vehicle test bed in Calgary, and exploring the fuel reduction potential of providing fleet vehicles with traffic signal timing information in Ottawa
- helping Canada take part in developing standards for connected and automated vehicles, and
- supporting capacity-building activities with road authorities

Recognizing the need for early leadership and guidance on connected and automated vehicles in Canada, Transport Canada published [Testing Highly Automated Vehicles in Canada: Guidelines for Trial Organizations](#). This guidance was developed in collaboration with the provinces and territories. It offers practical, Canada-wide guidelines for the safe testing of connected and automated vehicles. Its flexible and responsive policy approach will make connected and automated vehicle testing consistent across jurisdictions, which in turn will support safety, competitiveness and economic growth.

In 2019, Transport Canada launched the [Enhanced Road Safety Transfer Payment Program](#), which funds projects to help create nationally consistent tools that address road safety challenges, and new opportunities to invest in Canadian projects to promote the innovative design, testing, and integration of connected and automated vehicles and other safety enhancing technologies. The results of these projects will support the development of national and global safety standards, regulations, and requirements.

Transport Canada is also working to enable bold and innovative transportation solutions through research and evaluation including the [ecoTECHNOLOGY for Vehicles \(eTV\) Program](#) which tests and evaluates the safety and environmental performance of innovative vehicle technologies to advance key Government of Canada priorities. Results from RD&D projects support the development of codes and standards, which ultimately lead to the safe and timely introduction of these technologies, for example, cooperative truck platooning system for heavy-duty vehicles, electric and alternative fuel vehicles and connected and automated vehicle.

Notably, as part of the [Transportation Sector Regulatory Roadmap](#), Transport Canada launched a pilot project to test fuel saving truck platooning technology beginning in 2019-2020, including trials on Canadian public highways. Through this initiative, Transport Canada is working with industry, academia, and provincial, territorial and municipal governments to gather evidence informing the potential development of regulations, policies, and programs that provide a modernized approach for safe and effective deployment on Canadian roads and in Canadian climate conditions. A [scoping paper on considerations for safely deploying platooning in Canada](#) was published in fall 2020, and a pilot deployment is planned on public road, beginning in summer 2021.

Additionally, Transport Canada's Rail RD&D program supports the development of technologies that have the potential to increase safety, optimize efficiency and reduce emissions associated with transporting people and freight by rail. It emphasizes technologies that are on the pathway to commercialization and for which key barriers are inhibiting their uptake. These barriers include uncertainty relating to technological readiness, lack of understanding about the capability of technologies, concern over the impact of new technologies on existing equipment and gaps in codes and standards. As such, industry collaboration plays a key role in guiding the research agenda.

Projects of note in 2019 include:

- advancing the technology readiness levels (TRL) of automated and semi-automated inspection systems
- assessment of opportunities, challenges and technological options for hydrogen locomotives (like hydrail)
- development of advanced emission control technologies and lignin derived drop-in fuel blends for locomotives
- feasibility assessment of hyperloop technologies and automated intercity rail technologies;
- research relating to the impacts of climate change on railways built on permafrost
- viability study of wearable technology to increase rail worker safety, and
- use of satellites and drones to monitor landslides and water levels

As aging, deterioration, and climate change threaten the integrity and longevity of transportation infrastructure, Transport Canada is exploring new technologies that can identify and monitor performance issues at early stages. One such technology includes Canada's Radarsat Constellation Mission Synthetic Aperture Radar satellites that can detect bridge movements developing over time which may be due to excessive loads, soil settlement, truck or ship impacts, and extreme climatic events. This is made possible due to today's advanced computing algorithms and the frequent availability of high-resolution satellite images.

Currently, data is being gathered for a few pilot bridges in Canada and development is underway to advance and implement a data-driven decision-support tool that can provide bridge authorities with performance indicators on bridge condition and assist them in the challenging decision making process of bridge maintenance and rehabilitation. Most recently due to the innovative nature of this research, our National Research Council of Canada partners have initiated collaborative work with the UK's Satellite Applications Catapult Program to co-develop a decision-support tool for asset maintenance decision makers. The pilot study tool, named BRIGITAL, visualizes data on key bridges in Canada (and eventually the UK) to deliver indicators on their overall condition.

Furthermore, Transport Canada continues to help Canadian small and medium size businesses develop and commercialize innovations. In 2018, Transport Canada launched 2 challenges through Innovation, Science and Economic Development Canada's Innovative Solutions Canada Program with the intention to find solutions for specific challenges in the transportation industry where solutions do not exist.

As a result of those challenges, 5 recipients were awarded funding to develop proof of concepts for economically viable and environmentally sustainable methods for recycling glass fiber-reinforced plastic used in vessel hulls to avert disposing vessels in landfills and for affordable after-market technology solutions for commercial vehicles to aid in the detection of vulnerable road users (like cyclists, pedestrians) and alert the driver of potential collisions.

In 2020, Transport Canada launched a new round of challenges, including an innovative solution to reduce underwater-radiated noise from marine tugs that escort large commercial vessels through the critical habitat of the Southern Resident killer whale in the Salish Sea.

TRANSPORTATION OUTLOOK

CONTEXT

The COVID-19 pandemic has shocked global economies and greatly changed transportation flows, completely altering pre-pandemic forecasts and placing the world in uncharted territory. It has become critical to analyze current economic and trade drivers, project possible futures, and become proactive in planning. Transportation demand forecasts can be used to better inform short-term shipment (2-3 year) management and long-term (10 year) investment decisions. More detailed information on the forecast presented here can be found on the Transportation Data and Information Hub. The detailed version includes highlights such as a range of forecast scenarios, outlook risks, and implications for the transportation network.

ECONOMIC OUTLOOK

Canada's economic activity is expected to recover to pre-COVID levels in 2022, lagging behind the global recovery projection of 2021. This is partially explained by the hard-hit passenger transportation sector and the economy's interdependence with the energy sector which was also hard hit in the pandemic. Despite this, the short-term outlook could swing more positively through effective vaccination and national immunity, particularly if it is achieved before global lockdown and border restrictions are lifted (in other words, an immediate return to travel).

Globally, political shifts and COVID-control measures have stifled economies, although China is emerging strong from the pandemic and Emerging Economies have also rebounded quickly. Europe and the US, traditional international powerhouses, continue to experience high COVID case counts and uncertainty.

Permanent global economic scarring from COVID is expected to be present but modest, resulting in a slight reduction in gross domestic product levels in the long term. Structural changes resulting from COVID are assumed to be minimal. Consequential, post-COVID global growth rates are anticipated to follow a similar trajectory as pre-COVID expectations. Similarly, most major commodity markets relevant to Canadian transportation are not expected to see significant structural change resulting from COVID.

Despite minimal COVID implications, over the long term, national economic growth is expected to slow. Growth will be weighted towards that west, while eastern provinces will realize limited gains. Growth in trade will outpace gross domestic product growth. Gains in trade will be driven in part by growth in developing and emerging economies. Emerging markets will be the engine of global growth. While growth in China decelerates. Nonetheless, the US will remain Canada's largest trade partner.

FREIGHT OUTLOOK FOR WESTERN CANADA

The relatively limited adverse, and some cases beneficial, impact of COVID on key western commodity markets (grain, containers, potash, and wood products) will result in the west recovering before other regions. Rail and port traffic on the Vancouver and Prince Rupert corridors is expected to recover to pre-COVID levels by 2022, with for hire trucking recovering by 2021 (Alberta remains an outlier due to its dependence on the oil and gas industry). For hire trucking commodities will largely recover in 2021, excepting energy products. Due to the devastation of their energy sector industry, Alberta's for hire trucking will lag, recovering in 2022.

Cross-border rail traffic is expected to realize solid gains, with particular strength in grain and potash. Container growth will retain current levels until 2021, with moderate gain thereafter. The cancellation of the Keystone XL pipeline is not expected to significantly impact border traffic. However, the lack of short term pipeline capacity is expected to result in a significant temporary increase in traffic. Increase in home repair activities during the pandemic are expected to boost wood product movements over the border.

Over the next 10 years, the region will emerge as the fastest growing region in Canada, reflecting optimistic population and income prospects, with broad-based growth across most commodities. Solid population and income growth will translate into solid growth in for-hire trucking activity. Both the Vancouver and Prince Rupert rail and marine corridors will benefit from particularly stronger growth in Asia driving both demand (grain, potash, energy) and production (containers) of key commodities. Western rail border crossings will realize moderate growth owing to strong gains in potash and grains at BC crossings to US ports and minimal gains in potash, forest products and crude oil at other crossings.

FREIGHT OUTLOOK FOR CENTRAL CANADA

In the short term, central networks are expected to return to pre-pandemic levels by 2022. Transportation of consumer goods, particularly food, will remain stable; as a key commodity in the region, this has bolstered the network throughout the pandemic. The Thunder Bay corridor is expected to continue growing into 2023, but the market share of grain at the port is expected to shift as normalization occurs; this is an expected outcome of a strong harvest year.

Recovery of container traffic at the Port of Montreal is expected in the short term, emphasizing goods consumption and reflecting anticipated economic growth (in other words, increasing disposable income correlates with increased demand for goods), with recovery in 2021. For hire trucking is expected to remain constant for most commodities, achieving stability in 2021, with an exception for manufacturing and wood products, which will realize a slower recovery. Overall, pre-pandemic levels are expected to be achieved by 2022.

Long-term, the region will realize moderate growth. Manufacturing and consumer goods will lead demand for transportation. However, automotive sector will experience significant declines. Consequently, rail and truck movements originating from the region are expected to also realize moderate growth. Shipment through Thunder Bay will be particularly weak owing to declining energy shipments related to switch to cleaner energy and limited population growth driving grain demand in Europe.

FREIGHT OUTLOOK FOR EASTERN CANADA

The eastern transportation networks are expected to recover in full by 2022. Trends in home repair are expected to continue driving demand for movement of construction material, further spurred by economic recovery and increased disposable income. Container movements through the Port of Halifax are anticipated to improve, due to general recovery. Mining is projected to be particularly strong as COVID health restrictions ease at larger operations, and new mines ramp up production for iron ore along the Labrador Quebec rail corridor; volumes are expected to increase in the short term in all scenarios. For hire trucking will remain consistent with most of the country, with manufacturing and wood products hardest hit, slow recovery in energy, and stable consumer goods.

The long-term growth in for hire truck growth is expected to be tepid. The region will experience more pronounced aging, which will weigh on demand for transportation. Shipments moving across the region from the Port of Halifax will realize moderate growth owing in part to growing container markets outside of China. Labrador Quebec rail corridor will see minimal growth as shipments of iron ore are constrained by lack of mine capacity.

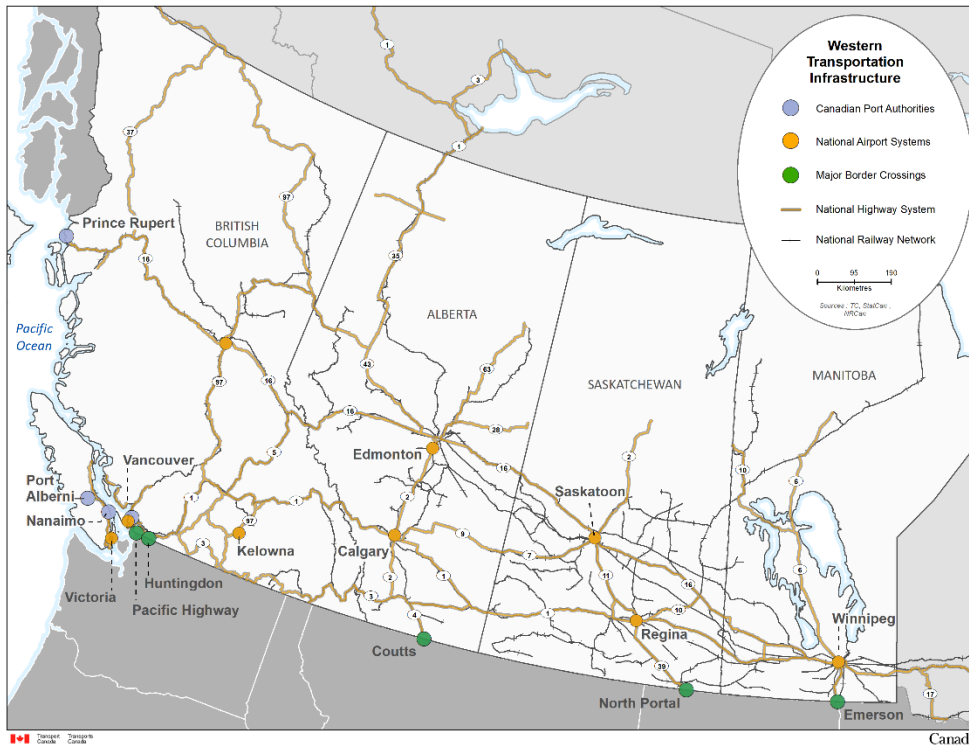
AIR PASSENGER OUTLOOK

Over the last decade, total air passenger traffic in Canada rose 3.5% annually driven largely by travel to and from outside Canada. Over the same period, flights between Canada and the US rose 4.0% annually and flights to and from outside North America were up 6.6%. Prior to the COVID-19 pandemic, an increase of about 4.0% per year was forecasted for other international travel over the following 10 years, while trans-border flights with the US was expected to slow moderately to 3.6% per year. Domestically, moderate expansions of 2.4% per year was anticipated as population and economic expectations for Canada were slowing down.

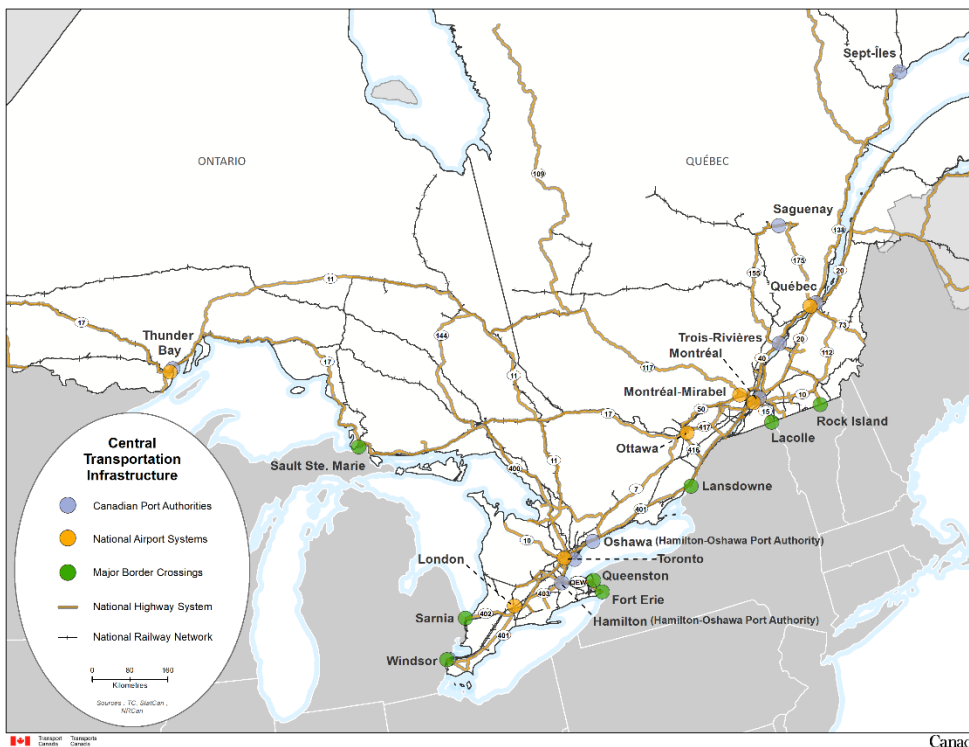
Historically air transportation has been highly resilient to negative external shocks; however, the COVID-19 pandemic has been unprecedented in its scope, with the air sector impacted disproportionately compared to the other sectors. Air passenger annual traffic in 2020 was around 28% of 2019 and ten months into the crisis, weekly air passenger volumes remain about 9% of 2019 levels with little signs of recovery.

The air passenger traffic recovery path remains uncertain and will be shaped by 3 major drivers: the recovery of the overall economy, vaccine distribution and effectiveness, and travel behaviour such as different responses of passenger demand for domestic versus international travel, and leisure versus business travel. Canada's air transport recovery lags behind other countries in part due to rigid travel restrictions, strict quarantines, and the uncertainty evoked by constant changes in travel requirements. International air passenger markets are only recovering where quarantine rules have been relaxed, with domestic markets in China and Russia leading the way. Volatility in air sector recovery is expected over the coming years and traffic is anticipated to eventually return to the forecasted long-term growth rate.

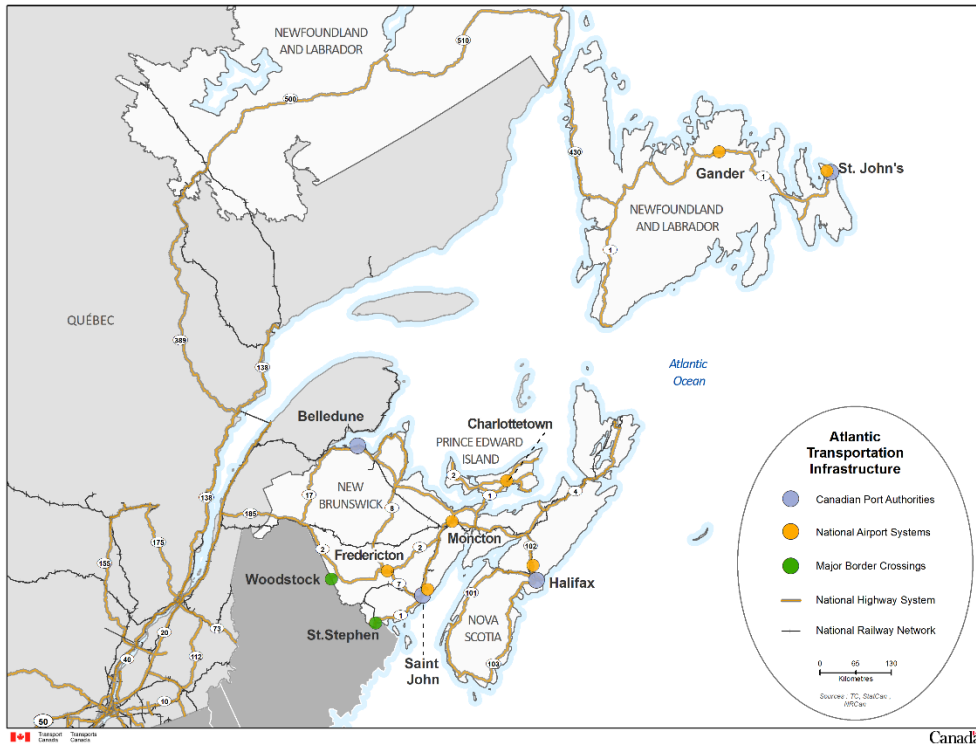
MAP 1: WESTERN REGION



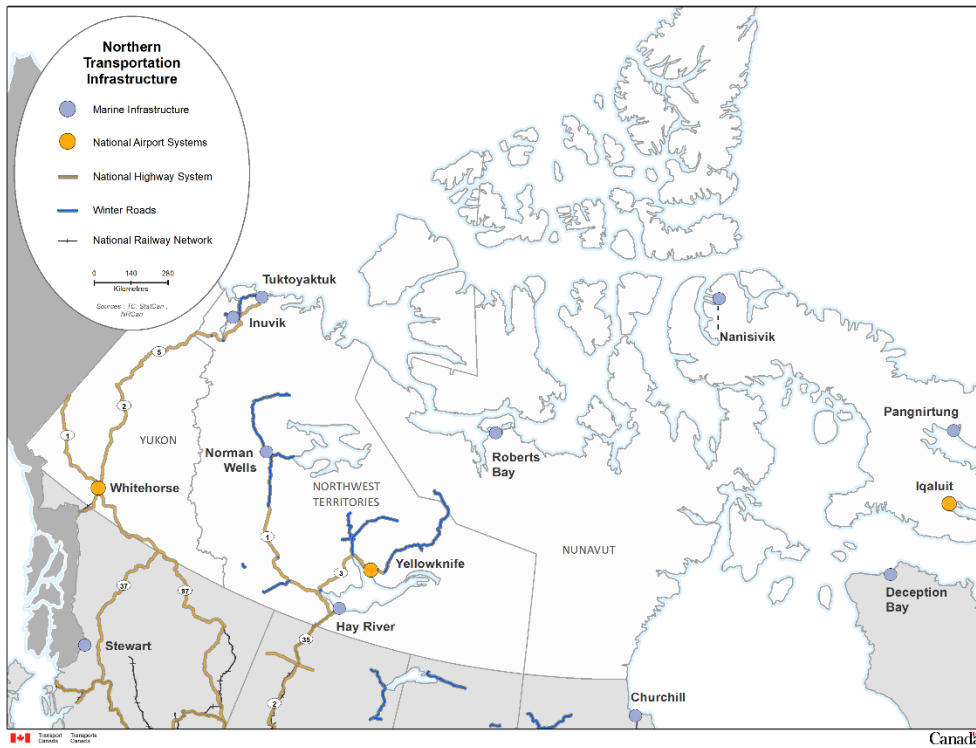
MAP 2: CENTRAL REGION



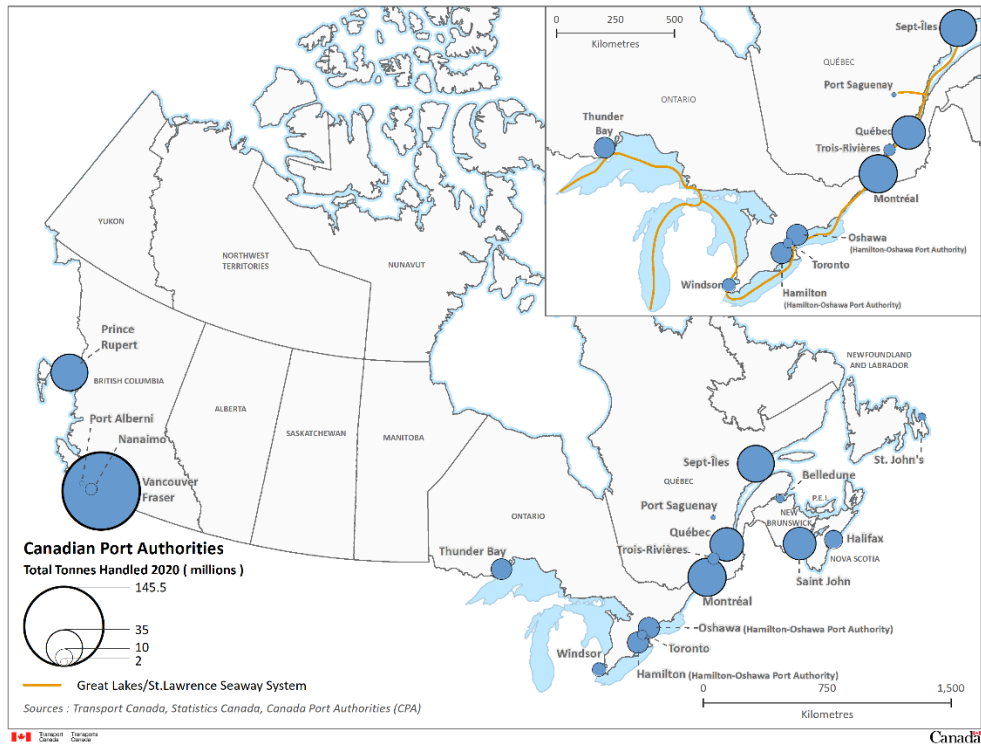
MAP 3: EASTERN REGION



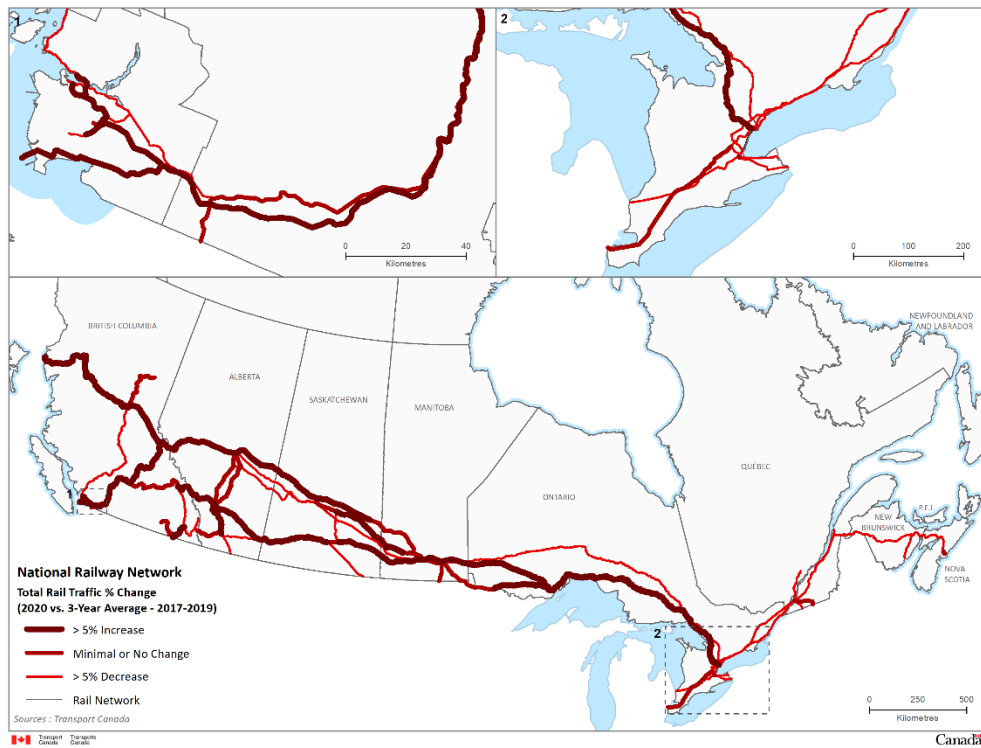
MAP 4: NORTHERN REGION



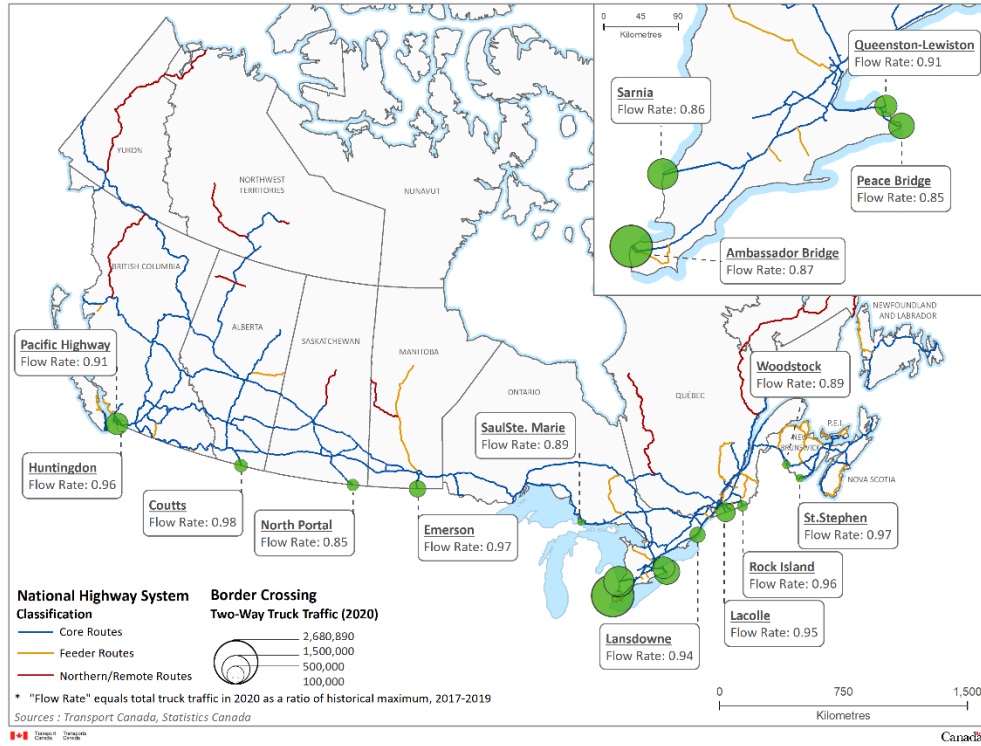
MAP 5: CANADIAN PORT AUTHORITIES



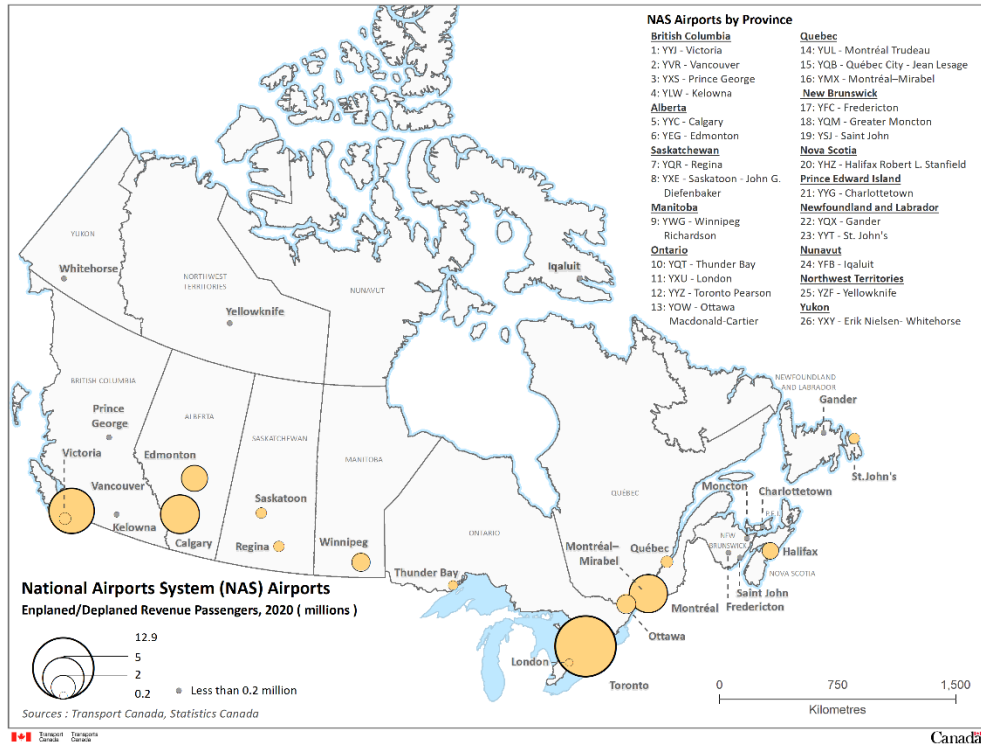
MAP 6: RAIL SYSTEM FLOW COMPARISON, TOTAL TRAFFIC 2020 COMPARED TO 3 YEAR AVERAGE



MAP 7: TRUCK BORDER CROSSING PERFORMANCE METRICS, TRAFFIC FLOWS



MAP 8: NATIONAL AIRPORT SYSTEM



TRANSPORTATION AND THE ECONOMY**GENERAL**

Table EC1: Economic Indicators, 2020

Table EC2: Transportation Sector GDP and GDP Shares by Province and Territory, 2017

Table EC3: Aggregate Household Final Consumption Expenditures on Transportation, 2020

Table EC4: Volume of Goods in Domestic Trade, by Sector and Mode of Transport, 2009–2018

MERCHANDISE TRADE

Table EC5: Modal Shares in Canada's International Trade, 2011–2020

Table EC6: Modal Shares in Canada-United States Trade, 2011–2020

Table EC7: Modal Shares in Canada-Other Countries Trade, 2011–2020

Table EC8: Canada–United States Trade, by Main Trade Flows, 2019–2020

Table EC9: Canada's Exports and Imports, by Origin, Destination and Mode of Transport, 2020

Table EC10: Canada's Merchandise Trade—Top 25 Partners, 2019–2020

TRAVEL AND TOURISM

Table EC11: Visits by Canadians to All Countries, 2016–2017

Table EC12: Canada - United States Travel, by Mode of Transport and by Purpose, 2017

Table EC13: Canada - Overseas Travel, by Mode of Transport and by Purpose, 2017

LABOUR

Table EC14: Employment in the Transportation Sector, 2011–2020

Figure EC15: Labour in Transportation Modes in Canada, by Age Range, 2020

Table EC16: Average Weekly Earnings by Selected Transportation Industries, 2011–2020

Table EC17: Labour Actions in the Transport Sector, by Mode, 2010–2019

PRICE PERFORMANCE OF TRANSPORT

Table EC18: Average Crude Oil Prices - Canadian and U.S. \$ per Barrel, 2011–2020

Table EC19: Retail Price of Regular Road Gasoline and Diesel For Selected Cities, 2011–2020

Table EC20: Price of Other Transportation Fuels, 2011–2020

Table EC21: Price and Output Indicators, Transport Industries, 2014–2019

Table EC22: Efficiency Indicators, Transport Industries, 2014–2019

Table EC23: Cost Structure of Transport Industries, 2016–2019

Table EC24: Financial Performance of Transportation Industries, 2013–2019

GOVERNMENT SPENDING AND REVENUES ON TRANSPORTATION

Table G1: Summary of Transportation Expenditures and Revenues by Level of Government, 2010/11–2019/20

Table G2: Transportation Expenditures and Revenues by Mode and Level of Government, 2010/11–2019/20

Table G3: Detailed Federal Transport Expenditures, by Mode and by Department/Agency, 2010/11–2019/20

Table G4: Government Revenues from Transport Users, 2010/11–2019/20

Table G5: Summary of Provincial Transport Expenditures by Province/Territory, 2010/11–2019/20

Table G6: Detailed Provincial/Territorial Expenditures by Mode and by Province/Territory, 2010/11–2019/20

ENVIRONMENT AND ENERGY

Figure EN1: Greenhouse Gas Emissions, by Economic Sector, 2018

Figure EN2: Greenhouse Gas Intensity of End-Use Sectors, 2009 and 2018

Table EN3: Transportation Energy Consumption, by Type and Mode, 2010–2019

Table EN4: Total Transportation Greenhouse Gas Emissions, All Modes, 2000–2018

Table EN5: Air Pollutant Emissions from the Transportation Sector, by Type of Pollutant, 2010–2019

Figure EN6: Transportation Mode Share of Air Pollutant Emissions, 2019

Table EN7: Aviation Greenhouse Gas Emission Intensity, by Region of Operation, 2009–2018

Table EN8: Aviation Fuel Consumption, by Region of Operation, 2009–2018

Table EN9: National Aerial Surveillance Program Key Metrics, 2010/11–2019/20

Table EN10: Rail Greenhouse Gas Emission Intensity, by Type of Operation, 2009–2018

Table EN11: Railway Fuel Consumption, 2010–2019

Figure EN12: Zero Emission Vehicle (ZEV) Market Share, 2016–2020

TRANSPORTATION SAFETY AND SECURITY

GENERAL

Table S1: Summary of Transportation Safety Statistics for Aviation, Marine, Rail, Road and TDG, 2011–2020

Figure S2: Accidents and Accident Rates per Activity Measure for Rail, Road, Marine and Aviation, 2010–2020

RAIL OCCURENCES

Table S3: Railways Under Federal Jurisdiction, Accidents and Incidents, 2011–2020

Table S4: Railways Under Federal Jurisdiction, Accidents by Province/Territory, 2011–2020

Table S5: Railways Under Federal Jurisdiction, Crossing and Trespasser Accidents, 2011–2020

ROAD OCCURENCES

Table S6: Road Casualty Collisions, Fatalities and Injuries, with Rates (per 10,000 MVR and Billion Vehicle-Kilometres), 2010–2019

Table S7: Road Casualty Rates (Fatalities and Injuries per Billion Vehicle-Kilometres) by Province/Territory, 2018–2019

Table S8: Commercial and Other Vehicles Involved in Fatal Collisions, by Vehicle Type, 2014–2019

Table S9: Fatalities Resulting from Commercial and Other Vehicles Involved in Fatal Collisions, by Vehicle Type, 2014–2019

Table S10: Fatalities by Road User Class, 2014–2019

Table S11: Vehicles Involved in Fatal Collisions, by Vehicle Type, 2014–2019

MARINE OCCURENCES

Table S12: Marine Occurrences, 2010–2020

Table S13: Small Canadian Vessels Engaged in Commercial Activity—Marine Occurrences, 2010–2019

Table S14: Small Canadian Vessels Engaged in Commercial Fishing Activity, Marine Occurrences, 2010–2020

AIR OCCURENCES

Table S15: Aviation Occurrences and Casualties Involving Aircraft Operating Under CARs, 2015–2020

Table S16: Summary of Aviation Occurrences Reported to the Transportation Safety Board, 2015–2020

Table S17: Canadian-Registered Aircraft (CRA) Accident Rates for Aircraft Operating Under CARs, 2015–2020

Table S18: Accidents Involving Aircraft Operating under CARs, by Province/Territory, 2015–2020

DANGEROUS GOODS OCCURENCES

Table S19: Reportable Accidents Involving Dangerous Goods by Mode and Phase of Transport, 2010–2019

Table S20: Deaths and Injuries Attributed to the Dangerous Goods at Reportable Accidents, 2010–2019

AIR TRANSPORTATION

AIRPORTS

Table A1: Number of Aerodromes in Canada 2011–2020

Table A2: Airport Capital Assistance Program Expenditures, by Province/Territory 2011/12–2020/21

Table A3: Airport Authorities Financial Performance, 2019

Table A4: Airport Improvement Fees (AIF) at National Airport System (NAS) Airports 2011–2020

Table A5: Air Travellers Security Charge (ATSC) 2002–2020

Table A6: Top 10 Busiest Canadian Airports in Terms of Aircraft Movements 2011–2020

AIRCRAFT AND LICENCES

Table A7: Licence Authorities Held by Air Carriers as of December 31, 2020

Table A8: Civil Aviation Personnel Licences and Permits by Category as of December, 2020

Table A9: Personnel Licences and Permits, by Province/Territory, as of December, 2019–2020

Table A10: Total Operating Revenues of Canadian Air Carriers, 2010–2019

Table A11: Annual Labour Costs per Employee of Canadian Air Carriers, 2008–2019

Table A12: Average Scheduled Daily Seat-Kilometres, by Air Carrier, Domestic Sector, 2019–2020

PASSENGER TRAFFIC

Table A13: Competition in the Top, 25 Domestic Air Markets as of December 31, 2020

Table A14: Top, 20 Busiest Canadian Airports in Terms of Enplaned/Deplaned Revenue Passengers, 2011–2020

Table A15: Top 10 Busiest Canadian Airports in Terms of Enplaned/Deplaned Revenue Passengers, by Sector, 2011–2020

FREIGHT TRAFFIC

Table A16: Volume of Traffic Carried by Canadian Air Carriers, 2011–2020

Table A17: Top 10 Busiest Canadian Airports in Terms of Loaded/Unloaded Revenue Cargo, by Sector, 2011–2020

Table A18: Air Exports and Imports, by World Region, 2019–2020

Table A19: Main Commodity Groups Shipped by Air in Canada's International Trade, 2019–2020

MARINE TRANSPORTATION**PORTS**

Table M1: Port Classifications, as of December 31, 2020

Table M2: Number of Port Sites Under the Control and Administration of Transport Canada, by Province, 2011–2020

Table M3: Status of Transport Canada Port Facilities, 2020

FINANCIAL PROFILES

Table M4: Canada Port Authorities (CPA) Financial Results, 2019

Table M5: Canada Port Authorities (CPA) Financial Comparison, 2018–2019

Table M6: Financial Results for Transport Canada Ports, 2011/12–2020/21

Table M7: St. Lawrence Seaway Financial Performance, 2009/10–2018/19

Table M8: Pilotage Authorities Financial Results, 2011–2020

FLEET AND PILOTAGE

Table M9: Total Pilotage Assignments and Assignments Per Pilot, 2011–2020

Table M10: Canadian-Registered Fleet, by Vessel Type, 2000, 2010, and 2020

VESSEL MOVEMENTS

Table M11: Vessel Trips in Canadian Waters, by Vessel Type, 2016–2020

Table M12: Vessel Trips in Canadian Waters, by Vessel Flag, 2016–2020

FREIGHT TRAFFIC

Table M13: Total Tonnage Handled by Canada's Port Authorities (CPAs), 2011–2020

Table M14: St. Lawrence Seaway Cargo Traffic, 2011–2020

Table M15: St. Lawrence Seaway Traffic, by Commodity, 2011–2020

Table M16: International Cruise Ship Traffic at Selected Canadian Ports, 2011–2020

Table M17: Canada's Marine Traffic Handled by Canada Port Authorities (CPAs), 2011–2020

Table M18: Canada's Leading Ports Handling Containerized Freight, 2011–2020

Table M19: Main Commodities Shipped in Canada's International Marine Trade, by Market, 2020

Table M20: End-to-End Transit Times from Shanghai to Toronto via British Columbia Ports using a Direct Rail Model, 2011–2020

Table M21: Key Performance Indicators for Selected Intermodal Container Ports, 2018–2020

RAIL TRANSPORTATION**RAILWAY PROFILE**

Table RA1: Length of Railways in Canada, 2019

Table RA2: Railway Revenues, 2008–2019

Table RA3: Railway Fleet, 2010–2019

Figure RA4: Average Monthly Train Velocity, by Rail Carrier, 2020

Table RA5: Revenue Tonne-Kilometres, by Railway Sector, 2010–2019

FREIGHT TRAFFIC

Table RA6: Overall Rail Traffic Characteristics, 2011–2020

Table RA7: Traffic Received and Forwarded by Canadian-Based Class II Carriers, 2011–2020

Table RA8: Volume of Rail Exports and Imports, by Commodity, 2011–2020

Table RA9: Value of Rail Exports and Imports by Commodity, 2011–2020

Table RA10: Dangerous Goods Shipments on Rail, 2010–2020

Table RA11: Volume of Rail Exports and Imports, by Province/Territory of Origin, 2011–2020

Table RA12: Value of Rail Exports by Port of Exit and Clearance, 2011–2020

Table RA13: Volume of Rail Marine Exports and Imports, 2011–2020

Table RA14: Volume of Rail Marine Exports and Imports, by Commodity, 2010–2019

Table RA15: CN and CPR Intermodal Traffic, 2011–2020

PASSENGER TRAFFIC

Table RA16: Passenger and Passenger-Kms for VIA Rail Canada and Other Carriers 2011–2020

ROAD TRANSPORTATION**ROAD NETWORK**

Table RO1: Length of the National Highway System, 2017

Table RO2: Length of the Public Road Network in Canada, 2019

TRUCK - PROFILE AND ACTIVITY

Table RO3: Traffic Volume by Canadian For-Hire Carriers, 2014–2018

Table RO4: Canadian International Trade Value Shipped by Trucks, by Commodity Groups, 2019–2020

Table RO5: Canada's Road Trade with the United States, by Busiest Border Crossing Points, 2019–2020

Table RO6: Twenty Busiest Border Crossings for Cars/Other Vehicles, 2016–2020

Table RO7: Twenty Busiest Border Crossings for Trucks, 2016–2020

Table RO8: Border Wait Times for Southbound Trucks at Selected Crossings, 2020

Table RO9: Annual Trucking Bankruptcies, by Region, 2011–2020

BUS AND URBAN TRANSIT - PROFILE AND ACTIVITY

Table RO10: Bus Industry Revenues by Service Lines, 2009–2018

Table RO11: Urban Transit Passengers Carried and Vehicle-Kilometres, 2010–2019

Table RO12: Urban Transit Fleet Composition, 2010–2019

Table RO13: Average Annual Compensation in the Bus Industry, 2009–2018

Table RO14: Selected Provincial Systems Indicators for Urban Transit, 2019