

Transportation in Canada 2022

OVERVIEW REPORT



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[Table of Contents](#)

Preface	4
Ministers Message	4
Highlights	6
Purpose	6
The Role of Transportation	8
Supporting the economy	8
Supporting trade	9
Modal Overview and Developments	10
Air Network.....	10
Marine Network.....	16
Rail Network.....	21
Road Network	25
System Performance.....	29
Freight	29
Supply chains	32
Urban mobility	34
Passenger Performance	39
Incident and Accident Rates	41
Greenhouse Gas Emissions	42
Trends and Outlook	44
Key Long-term Drivers Affecting Transportation.....	44
Key Short-term Drivers Affecting Transportation.....	45

Preface

Ministers Message

THE HONOURABLE

OMAR ALGHABRA



MINISTER OF TRANSPORT

As Minister of Transport, I am pleased to present *Transportation in Canada 2022*, which provides Canadians with an overview of their transportation system at work.

As the world entered year three of the global COVID-19 pandemic, the Government of Canada continued to implement numerous measures aimed at keeping Canadians safe. These were adjusted over the course of the year according to advice from public health experts and the latest science.

As activity in Canada's aviation sector ramped back up, the government took steps to ensure that the travel delays and frustrations previously experienced by many people during the summer and winter holiday seasons would be minimized. Notably, the *Air Passenger Protection Regulations* were updated to include new refund requirements for flight cancellations or lengthy delays outside of an air carrier's control. The government also continued its investment in Canada's airports. This took the form of initiatives such as the Airports Capital Assistance Program (ACAP), the Airport Critical Infrastructure Program (ACIP), and the Airport Relief

Fund (ARF). These initiatives provided funds for projects and equipment that maintained or improved safety, helped build or rehabilitate infrastructure, or gave financial relief to airports still struggling with the effects of the pandemic.

The multi-billion-dollar National Trade Corridors Fund, meanwhile, continued to fund a wide range of infrastructure projects aimed at improving the strength and resiliency of our supply chain. Following a successful Supply Chain Summit in January 2022, I established a task force to consult with industry experts and make independent recommendations. These were detailed in the task force's final report, released in October last year, and included proposals to ease port congestion, address labour shortages, establish a federal Supply Chain Office, protect border crossings and gateways from disruption, and develop a national transportation supply chain strategy.

Related to this, the government also tabled Bill C-33, the *Strengthening the Port System and Railway Safety in Canada Act*. This is aimed at modernizing how marine and railway transportation systems operate in Canada—helping remove systemic barriers, creating more fluid, secure, and resilient supply chains.

With regard to rail transportation, the government is working hard on the Lac-Mégantic bypass project, so the trains can be re-routed out of the downtown. Additionally, this year saw further steps toward the creation of a High Frequency Rail corridor stretching from Quebec City to Toronto, with a study also looking at ways to extend it even further, to communities like Windsor and across southwestern Ontario. High Frequency Rail will be Canada's largest infrastructure project ever and will create jobs for

the next decade. It will also feature more frequent and reliable service and a greener rail system using electrified technology, offering passengers improved connectivity between cities and with other modes of transportation.

In the maritime sector, 2022 saw the completion of yet another successful shipping season along the St. Lawrence Seaway—a critical part of our national infrastructure and supply chain, which moves billions of dollars in cargo annually. Last year also featured the completion of the Ports Modernization Review, which will improve the governance of Port Authorities across the country. In April, we welcomed the long-awaited return of cruise ships to Canadian ports and announced strict environmental measures for wastewater on cruise ships that exceed international standards.

In July, the government announced funding for nine more years of the Oceans Protection Plan, which is improving marine safety, increasing protections for our marine species and ecosystems, advancing reconciliation with Indigenous Peoples, and strengthening how Canada prevents and responds to marine incidents. These results are being accomplished by working closely together with Indigenous Peoples, coastal communities, the marine industry, scientists, and stakeholders.

Finally, as we look toward a greener future, the government continued its efforts to make zero-emission vehicles (ZEVs) more affordable—thereby reducing pollution, creating more well-paying jobs, and building a cleaner world for generations to come. For instance, we expanded the incentives for Zero Emissions Vehicles Program, and announced over \$500 million for a program to help Canadian businesses and organizations make the shift to medium and heavy-duty ZEVs. A further \$75.8 million has been allocated to the Zero Emission Trucking Program to accelerate the safe deployment of medium- and heavy-duty zero-emission vehicles through: research; deployments; funding to support guideline, code, standard and regulatory development; and capital investments at Transport Canada's Motor Vehicle Test Centre to undertake testing and evaluations of new and emerging zero emission vehicle technologies. Canadians, in turn, are buying more electric vehicles than ever, exceeding sales targets and helping to put us all on the right road ahead.

In closing, that's a lot of projects completed and underway. That's because our transportation network is so vast and varied—but also because we're always looking for ways to improve it. Canadians deserve no less.

Sincerely,

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

Minister of Transport

Highlights

The Canadian transportation network faced significant challenges in 2022 and had to adapt to the rapidly changing demand, geopolitical events, and disruptive weather events.

During the first half of the year, there was strong demand for consumer goods sourced from Asia, but the network was affected by disruptive events such as the Omicron variant, constrained labour capacity, and the recovery from the November 2021 atmospheric river in BC, leading to longer end-to-end transit times for imported containers. In the second half of the year, the Canadian transportation system recorded rebound in volumes for certain bulk commodity exports, notably driven by Canadian grain production, and demand for energy products. Meanwhile, the demand for containerized import goods softened due to the cooling of economic conditions.

Containerized throughput decreased by 2.1% at the four largest Canadian container ports in 2022 compared to 2021. Non-containerized throughput decreased by 0.5% at these ports, with the Port of Montréal seeing an increase of 9% and the Port of Vancouver experiencing a slight decrease due to dry bulk, including grain and forestry products.

Rail traffic remained slightly below 2021 levels (-0.7%). Overall, bulk commodities slightly decreased in 2022 compared to 2021 (-0.5%), largely related to softer grain volumes in the first half of the year owing to a small crop size from the 2021-2022 crop-year. Rail traffic growth was recorded for bulk in the last two quarters, respectively 4.9% in Q3 and 7.2% in Q4, mainly driven by a strong demand for export bulk commodities such as the new crop of grain, auto and potash.

In 2022, truck border crossings decreased by 1.6% overall compared to 2021 and remains slightly below pre-pandemic levels (-2.5% compared to 2019). Border crossings remained fluid throughout 2022 and became slightly more fluid following the lifting of all COVID-19 border measures as of October 1st. At most border crossings, wait times stayed slightly below the 3-year average in 2022.

The COVID-19 pandemic, particularly emerging variants, continued to pose a challenge to all modes of passenger transportation throughout 2022. Although passenger ridership has not returned to pre-pandemic levels, recovery compared to 2021 was strong. The air industry served 72 million passengers on domestic services compared to 24 million in 2021. Additionally, the cruise industry re-emerged in Canada following a ban on cruise ships entering Canadian ports which ended in early 2022, with 2.2 million passengers taking part throughout the year.

Overall, domestic transport-related greenhouse gas emissions have increased by 11.0% from 2010 to 2019 but decreased by 14.0% from 2019 to 2020 due to the COVID-19 pandemic. While emissions in the marine sector have lowered, all other modes experienced increases. The road sector makes up 84% of these emissions, and despite improvements in fuel efficiency, emissions increased due to growths in both passenger and freight activity.

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, while the use of vehicles increased. In the air sector, accidents involving registered aircraft are down 18% from the previous ten-year average. The rail sector saw a 4.1% increase in the number of accidents in 2022 yet recorded 5.2% less deaths than the previous 10-year average.

Purpose

Transportation is a major contributor to the economy and plays an important role in the wellness of Canadians. It also supports many industries, including the manufacturing and tourism sectors.

Transportation not only moves finished Canadian goods to domestic and international markets, it also moves the materials and goods that Canadian businesses need. Transportation also connects people within and between different communities, major urban centres, provinces, territories, and countries.

Canada's vast and sparsely populated territory, and extreme weather conditions, can make it challenging to ensure the safe, secure and efficient movement of goods and passengers in Canada. 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 this annual report.

The *Canada Transportation Act of 2007*, subsection 52, requires the Minister of Transport to table this report every year, in both the House of Commons and Senate. This report provides an overview of transportation in Canada based on the latest information for all modes of transportation (at the time of writing).

The report highlights the role that transportation plays in the economy and summarizes the transportation networks' infrastructure. It describes major developments in the transportation sector during 2022 from an efficiency, safety and security, and environmental perspectives.

The report also assesses the Canadian transportation system's performance in 2022 by looking at the system's use and capacity. It ends by looking at upcoming trends in the transportation sector.

In addition to this report, transportation statistics containing information on freight and passenger traffic for each mode, infrastructure and labour statistics, price and productivity indicators, freight trade data by mode and country, reported accidents, and greenhouse gas emissions have been produced and will be available digitally or to download through the Canadian Centre on Transportation Data and the [Transportation Data and Information Hub](#).

The Role of Transportation

Supporting the economy

Using traditional measures of Gross Domestic Product (GDP), a monetary measure for the total value of goods and services across a time period within a country or region, the transportation and warehousing sector made up 3.9% of GDP (\$81.4 billion) in 2022. In the past year, the sector rebounded and grew by 9.9% from 2021, after declining more severely than most other industries in 2020 (-5.2%).

Labour shortages

The sector's labour market continued its recovery from COVID-19; the unemployment rate dropped to 2.8% in 2022, compared to 4.5% in 2021, with a 10-year average of 4.2%. Although the sector's unemployment rate compares favorably with the national average of 5.3%, that was not reflected in wage growth. Average weekly earnings in transportation and warehousing grew by 1.0% in 2022, while they increased by 4.7% 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, for example the trucking sector, which is already experiencing a shortage of over 20,000 drivers. Trends also show that truck drivers tend to be older than the national average.

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

Competitiveness

The Logistics Performance Index is an interactive benchmarking tool created by The World Bank to help countries identify the challenges and opportunities they face in their performance regarding trade logistics steps they can take to improve performance

Overall, Canada ranked 7th in 2022 with a score of 4.0, very close to the best performers score of 4.3, Singapore. Canada gained 10 spots compared to the last report in 2018. Additionally, Canada ranked particularly high in the "Infrastructure" category, placing 3rd behind Singapore and Switzerland.

Productivity

Recently, multifactor productivity (a way of measuring the economy's performance by comparing the amount of goods and services produced (output) to the amount of material used to produce those goods and services) in the transportation and warehousing sector has plateaued. Between 2012 and 2021, multifactor productivity decreased around 3.2% per year, compared to the 0.1% increase for the business sector as a whole.

In contrast, labour productivity in transportation and warehousing decreased over the same period, at an annual rate of 0.7%. That's lower compared to the overall business sector which increased by 1.2%. Labour productivity for rail transportation outperformed the business sector with average annual growth rate of 3.44% while air transportation declined by 5% over the same period.

Supporting trade

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

In 2021, the value of interprovincial merchandise trade totaled \$195 billion, up 20.2% from 2020 after a significant drop due to COVID-19.

In 2022, international merchandise trade equaled around \$1.52 trillion, a 21.7% increase from 2021 and 42.5% higher than 2020 when trade was severely affected by the pandemic. The U.S. remains Canada's top trading partner, with \$963 billion in total trade (\$600 billion exported, \$363 billion imported), up 24.1% from 2021. The U.S. made up 63.4% of all Canadian trade in 2022.

Excluding the U.S., Canada's top 4 trading partners included China, Mexico, Japan and Germany. These 4 countries represented 16.0% of Canada's total international trade in 2022.

Canada has 15 free trade agreements in force with 51 countries, representing two-thirds of the global economy. Canada is also the only G7 country to have free trade agreements with every other member of the G7. These agreements connect Canadian businesses to over 1.5 billion consumers around the world.

Modal Overview and Recent Policy Developments

Air Network

Key Traffic and Volume Statistics

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

Canadian 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 42 airports and flight service stations at 55 airports.

The Canada Flight Supplement and Canada Water Aerodrome Supplement listed 2,012 certified and registered sites in 2022, and 12 other military landing sites. The sites fall into three categories:

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

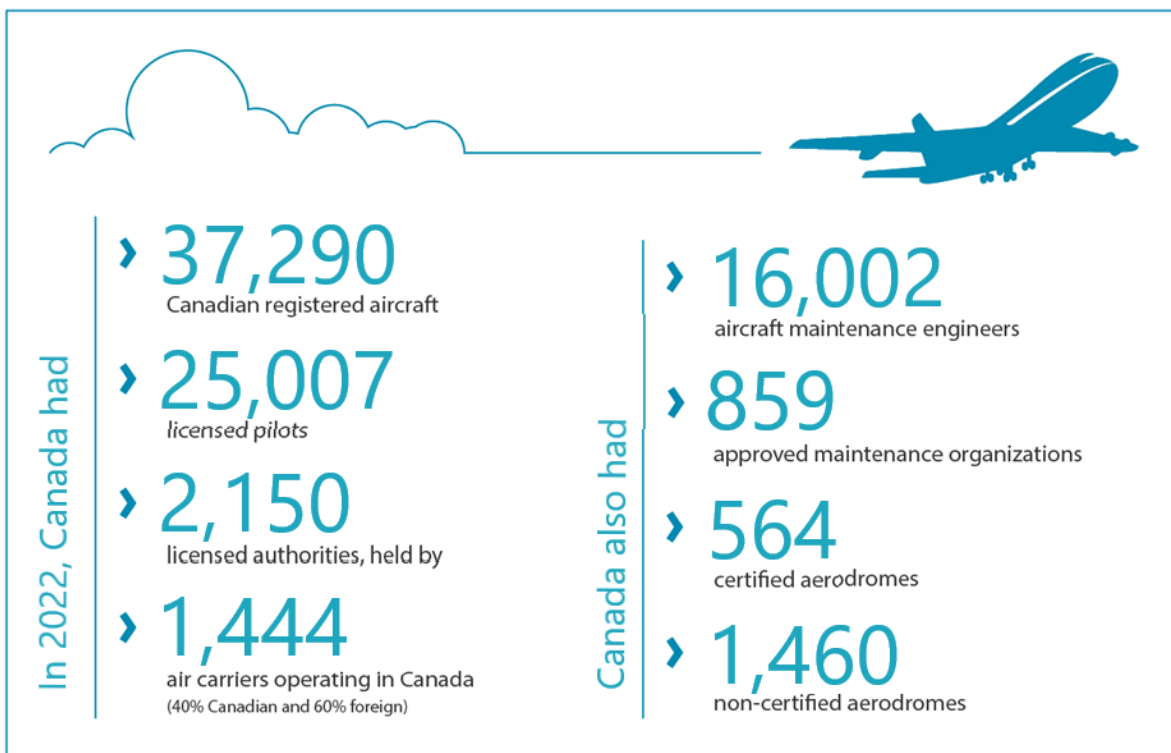


Image description: Air Transportation infographic

Table 1: Volume highlights from some domestic Canadian airlines

Airline	Highlights
Air Canada	<ul style="list-style-type: none"> Accounted for 51% of available seat-kilometres in the domestic air market Operated an average of 959 scheduled flights per day Air Canada's fleet of aircraft totalled 169 aircraft for the main line, 136 for Air Canada Express, and 39 for Air Canada Rouge
WestJet	<ul style="list-style-type: none"> Accounted for 29% of available seat-kilometres in the domestic air market WestJet's fleet totalled 121 aircraft, with 50 from WestJet Encore The airline provides scheduled passenger services to 43 Canadian destinations, 28 U.S., and 42 other foreign destinations
Porter Airlines	<ul style="list-style-type: none"> Porter Airlines fleet of 38 aircraft including 29 Q400 turboprop aircraft, connects passengers to 16 destinations in Canada and 5 in the U.S.
Air Transat	<ul style="list-style-type: none"> Air Transat is the largest leisure carrier, with a fleet of 48 aircraft serving 53 international destinations in 25 countries
Sunwing Airlines	<ul style="list-style-type: none"> Sunwing Airlines is Canada's second largest leisure operator, with 30 aircraft serving 36 international destinations in 15 countries

Recent Policy Developments

Competitiveness and Efficiency

While the Omicron variant affected the air industry at the beginning of the year, Canada's air transport industry emerged from the depths of the COVID-19 pandemic in 2022, with monthly aggregate passenger traffic recovering up to 90% of 2019 pre-pandemic levels. The increase is attributed to the release of pent-up demand following Canada's suspension of COVID-19 vaccination requirements and related travel restrictions. However, the industry emerged in a generally weakened state after more than two years of suppressed demand.

Although strong growth was positive for the industry, in the current labour market, demand outstripped the ability of the system to respond as Canadians expected. As health measures eased in early May, the major airports in Canada and worldwide experienced challenges in responding to the rapid recovery of air travel. The challenges initially manifested in terms of long wait times for passengers at pre-board screening prior to departure, as well as upon arrival for international passengers. However, multiple compounding factors have shown to contribute to the congestion including increased processing times and labour shortages.

During the year, the cost of capital and fuel also began rising due to successive hikes in interest rates, and lower crude oil supply and refining capacity as well as the war in Ukraine. Nonetheless, air carriers, airports and others in the air transport supply chain ramped up operations to satisfy the pent-up demand in the face of rising inflation and a slowing economy.

On November 24, 2022, the Minister led the Air Sector Recovery Summit that brought together industry partners, including airports, airlines, NAV CANADA, industry associations, labour groups, consumer rights groups, and government departments and agencies to discuss critical issues facing commercial passenger air transportation and the future of the air sector in Canada. Along with an online questionnaire, the views of stakeholders will inform the development of approaches to support Canada's air sector recovery and improvements in services for travellers.

Expansion of Air Services

For air carriers, the way forward included resuming, expanding, or launching new air services. Some air carriers looked beyond the recovery and took further steps for their futures. For example, WestJet realigned its business strategy, concentrating its operations to western Canada; and undertook to acquire Sunwing Vacations and its subsidiaries to bolster its profile amongst the leisure traveller segment. Air Canada also committed major capital, ordering 26 Airbus A321XLR aircraft, and 30 electrically propelled ES-30 aircraft, which could significantly reduce that company's carbon footprint. Porter Airlines, which has long-aspired to operate trans-continental flights, ordered 50 Embraer E195-E2 aircraft to be based at Toronto Pearson Airport. Porter also made a \$65 million investment to build two aircraft hangers at Ottawa Airport to maintain its Embraer fleet. Canada's ultra-low-cost carrier (ULCC) segment was also very active, with incumbents Flair Airlines and Swoop (a WestJet subsidiary) expanding their air services, and Lynx and Canada Jetlines inaugurating their services in April and September, respectively. ULCCs, which especially cater to highly price sensitive travellers, provided targeted competition to WestJet and Air Canada, which had the effect of providing price discipline and allowing travellers to avail themselves of low fares, especially in heavily contested markets.

Airport Congestion

In order to address the congestion seen at Canada's airports, Transport Canada created the Airport Operations Recovery Committee (AROC). With participants from the largest airlines and airports, as well as the Canadian Air Transport Security Authority (CATSA), the Public Health Agency of Canada (PHAC), the Canada Border Services Agency (CBSA), and NAV CANADA, the Committee investigated causes and recommended immediate and short-term solutions to address airport wait times. The collaborative work translated into considerable operational improvements by the end of September. Although mitigating measures were in place, severe weather events at the start of the busy winter holiday travel season impacted operations at Canada's major airport hubs, causing congestion, flight delays, cancellations and baggage issues that negatively affected air transport throughout the rest of the country. With staffing levels being comparatively less of an issue, operators in the air transportation system were able to relatively recover quickly compared to the last summer season.

Air Transport Agreements

Canada resumed its normal pursuit of more liberal air transport agreements (ATA) in 2022. For example, Canada expanded the bilateral ATA with India, one of our largest international air transport markets, to allow an unlimited number of flights by Canadian and Indian airlines. This represents a significant expansion of the bilateral treaty, which previously limited each country to 35 passenger flights per week. Another important development was Canada expansion of its ATA with Colombia, one of its

largest South American markets, to allow Canadian and Colombian airlines to operate an unlimited number of passenger and cargo flights between the two countries, up from the previous limit of 14 passenger and 14 cargo flights per week. Canada also responded to interest in greater connectivity for cargo by expanding its ATA with Ecuador to allow for 14 dedicated cargo flights per week by airlines of each country.

From September 27th to October 7th, the 41st Session of the International Civil Aviation Organization (ICAO) Assembly took place at ICAO Headquarters in Montreal and welcomed over 2,500 delegates. The Assembly is a triennial gathering of ICAO's 193 ICAO Member States and international organizations. It focused on shared priorities in aviation safety, security, efficiency, economic development, and environmental protection. Canada was also re-elected in Part I of the ICAO Council (States of chief importance in air transport).

Safety and Security

COVID-19

Transport Canada continues to issue COVID-19 measures, updates, and guidance for aviation as needed, including, but not limited to, the issuance, review, and implementation of the Interim Order Respecting Certain Requirements for Civil Aviation Due to COVID-19, and any exemptions to it that may be of national interest. Such exemptions include supporting humanitarian relief and diplomatic efforts, law enforcement activities, and facilitating the medical and religious accommodations of individuals.

These can be found at [COVID-19 measures, updates, and guidance for aviation](#).

Ukraine International Airlines Flight PS752

On January 8, 2020, Ukraine International Airlines Flight PS752 was shot down minutes after taking off from Tehran, Iran, by an Iranian surface-to-air missile. 55 Canadian citizens, and 30 permanent residents were among the 176 people killed in this tragedy.

In 2022, Transport Canada and other federal departments continued to pursue transparency, justice, and accountability for victims' families and to implement the recommendations from Special Advisor Ralph Goodale's report to the Prime Minister on Flight PS752.

This includes:

- securing reparations for the families of the victims (led by Global Affairs Canada)
- advocating for improvements to the international air accident investigation framework, and
- continuing to advance the Safer Skies Initiative

In 2022, Transport Canada's Conflict Zone Information Office continued to monitor, assess and respond 24/7 to the risks conflict zones pose to civil aviation, including issuing notifications to advise Canadian air operators of high-risk areas. Internationally, the office worked on key deliverables with the Safer Skies Consultative Committee. These deliverables included:

- implementing information-sharing protocols for conflict zone risks
- sharing best practices for assessing and mitigating conflict zone risks
- developing guiding principles for re-opening airspace post-conflict, and
- reviewing global standards and guidance materials

In March 2022, Transport Canada and the committee hosted the second annual Safer Skies Forum. The forum brought together technical subject matter experts from around the globe to discuss how the industry can manage and reduce the risks to air transportation in conflict zones.

In September 2022, the committee, in partnership with the European Civil Aviation Conference, submitted a working paper to the International Civil Aviation Organization General Assembly. The Working Paper outlined key global and regional initiatives to mitigate risks to civil aviation in conflict zones and asked ICAO to prioritize the review of Doc 10084: *Risk Assessment Manual for Civil Aircraft Operations Over or Near Conflict Zones*. The Committee has since conducted a thorough review of the document and submitted its recommended updates to ICAO.

Enhanced Passenger Protect Program

In November 2020, the provisions of the *Secure Air Travel Act (SATA)* and *Secure Air Travel Regulations (SATR)* that enable government-controlled centralized screening of passenger manifests against the SATA List came into force. A few weeks later, the Canadian Travel Number (CTN), a mechanism to help resolve false name matches to the SATA List and reduce SATA-related delays was publicly launched. The overall objective of the centralized screening system, together with the CTN, is to enhance national security protections and fairness for legitimate air travellers through consistency and the removal of potential unconscious bias in the passenger screening process against the SATA List.

In 2022, Transport Canada continued to support the onboarding of air carriers into the new centralized screening system. As of November 30, 2022, all eligible carriers have been successfully onboarded to the Enhanced Passenger Protect Program and are being vetted through the centralized screening system.

Additionally, the Transport Canada Passenger Protect Program Operations Centre, which has been fully operational since November 2020, received 1,808 calls from air carriers and vetted over 78 million passengers using centralized screening.

Commercial Space Launch

In April 2022, Transport Canada received endorsement to develop and implement interim measures to support commercial space launch in Canada, using existing authorities. Alongside this, Transport Canada was also granted endorsement to develop long-term measures to support commercial space launch in the coming years.

To ensure alignment and integration between Transport Canada's long-term measures and an eventual policy approach for the overall Canadian framework for regulating space activities, Transport Canada and the Canadian Space Agency have been working together. Transport Canada has also collaborated with other government departments and allied countries to establish an interdepartmental review process. This process aims to ensure that space launches in Canada are safe, secure, environmentally responsible, and in the public interest. It will enable ambitious launch plans by industry launch proponents, such as Maritime Launch Services, which plans to commence operations out of Canso, Nova Scotia, with a sub-orbital launch in 2023.

In January 2023, Minister Alghabra announced the Government of Canada's intention to support commercial space launch from Canadian territory at the Canadian Space Agency's Headquarters in Montreal, marking a significant step forward for the Canadian space industry.

Green Transportation

CORSIA

Transport Canada is actively involved in maintaining the International Civil Aviation Organization's (ICAO) Carbon Offsetting and Reduction Scheme for International Aviation, also known as CORSIA. The program addresses the increase in international aviation emissions from 2020 by requiring aircraft operators to buy emission units on the open market to offset a portion of their greenhouse gas emissions on international flights. This applies to any operator that will emit more than 10,000 tonnes of carbon dioxide emissions on international flights from 2019 to 2035.

In December 2020, an update was published to the regulations under the *Aeronautics Act* to set out the offsetting and alternative fuels requirements of CORSIA. With this act, CORSIA was fully implemented in Canada. The offsetting phase of CORSIA began in 2021.

At the ICAO assembly in fall 2022, Member States revised CORSIA's baseline to be 85% of 2019 emissions, due to the impact of COVID-19 on the sector. This means as of 2024, operators will collectively have to compensate for emissions above 85% of 2019 levels. The 2022 ICAO assembly also agreed on a long-term aspirational goal of net-zero carbon emissions by 2050 for the international aviation sector. Transport Canada has also been supporting ICAO's ACT-CORSIA Program which is helping countries build capacity to support the global implementation of CORSIA.

Aviation Climate Action Plan

On September 27, 2022, Canada released its [Aviation Climate Action Plan](#) (2022-2030). This Action Plan incorporates a whole-of government approach and establishes a net-zero vision for aircraft emissions by 2050 and defines key decarbonization measures and activities. These include developing and adopting new green aircraft technologies (such as electric and hydrogen powered aircraft), continuing to improve operations in the air and on the ground, and the using of sustainable aviation fuel (SAF), which is expected to have the biggest emissions reduction impact (on a life-cycle basis) by 2050. To send a clear signal of the importance of SAF, the Action Plan sets a purposefully ambitious goal of 10% SAF use by 2030.

Marine Network

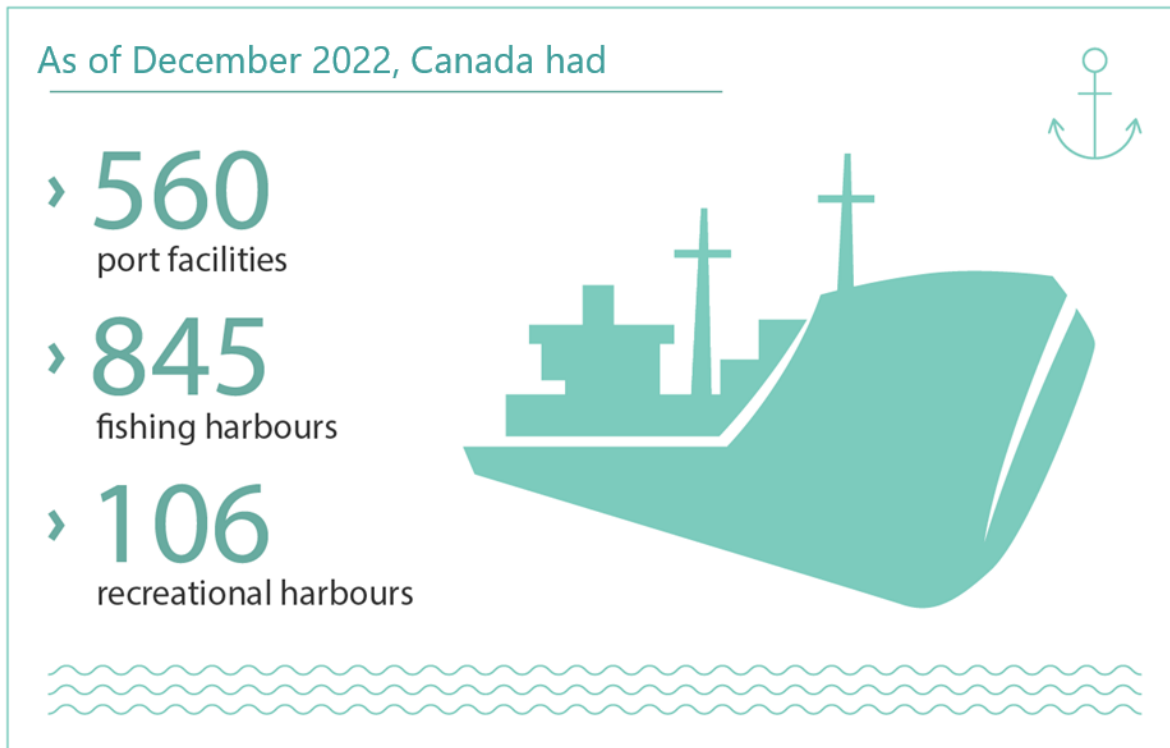
Key traffic and volume statistics

Canadian ports allow Canadian bulk commodities to reach overseas markets, and they are the main point of entry for imported containerized manufactured goods. Ports are also important hubs that connect Canada's coastlines to domestic and U.S. markets where the goods are shipped by railways and trucks.

Transport Canada oversees two types of ports:

- 17 ports that are independently managed by Canada Port Authorities
- 34 port facilities that are owned and operated by Transport Canada

Canadian registered vessels carry around 99% of domestic tonnage. Canadian vessels also support trade between Canada and the U.S. In contrast, foreign registered fleets carry goods to and from non-U.S. destinations. The domestic marine sector's main focus is transporting bulk cargo. The sector is also key to supplying northern communities and developing offshore resources.



In 2022, Canada's commercial registered fleet, comprising vessels weighing 1,000 gross tonnage and above, numbered 201 and boasted a total gross tonnage of approximately 2.3 million. Of these, cargo ships took the lead with 46 vessels, followed by dry bulk with 42, tankers with 24, and other vessels with 20.

In addition to these commercial vessels, passenger ferries play a crucial role in connecting coastal, island, and remote communities throughout Canada. In 2022, a total of 69 registered ferries were in operation across the country. Every year, the members of the Canadian Ferry Association, representing

all major ferry companies in Canada, transport over 60 million passengers and more than 22 million vehicles.

Recent Policy Developments

Competitiveness and Efficiency

Seaway

Transport Canada continues to advance efforts to ensure the St. Lawrence Seaway remains a competitive and sustainable transportation corridor for North America. The Government of Canada's agreement with the St. Lawrence Seaway Management Corporation to manage, maintain and operate the Seaway has been extended until March 31, 2024. This extension will provide the time required to finalize a long-term agreement to ensure this crucial transportation corridor continues to offer economic opportunities for Canada, seaway users, and all Canadians.

Port Modernization Review / Bill C-33

The Minister of Transport announced the completion of the Ports Modernization Review in October 2022. This review, which was launched in 2018, aimed to advance the role of Canada Port Authorities and optimize their current and future roles in the transportation system. As a result of the findings, the Minister of Transport introduced Bill C-33, *Strengthening the Port System and Railway Safety in Canada Act*, on November 17, 2022. The proposed legislative changes will enable Canada Port Authorities to better respond to increasingly complex economic, social, and environmental operating environments and remain competitive, efficient and sustainable.

Safety and Security

In 2022, Transport Canada focused on improving the safety and security of vessels and seafarers in Canadian waters. The Small Vessel Compliance Program was also expanded to include small tugs and a program was initiated to raise awareness about regulatory requirements for pleasure craft and small passenger boats.

Additionally, Canadian discharge requirements for cruise ships operating in Canadian waters during the 2022 cruise season were strengthened. This was done in collaboration with stakeholders, as were efforts to better integrate marine pilotage into the navigation system through regulations and interim orders. The Marine Pilotage Regulations were advanced in four phases, with phase one being completed in July 2022.

In addition to these initiatives, two proposed regulations were pre-published in the Canada Gazette, Part I: the *Marine Safety Management System Regulations* and the *Vessel Construction and Equipment Regulations*. Amendments were also made to the *Vessel Operation Restriction Regulations*, the *Vessel Fire Safety Regulations*, the *Life Saving Equipment Regulations*, and the *Large Fishing Vessel Inspection Regulations*.

Credentials and regulations

Transport Canada also took steps to address the shortage of seafarers in Canada by signing reciprocal arrangements with Georgia and Ukraine that streamline recognition of seafarer credentials. The Seafarers' Welfare Board was consulted to develop guidance materials and Ship Safety Bulletins to protect seafarers' rights to access shore leave while facilitating international crew changes during the pandemic.

Public consultations were held on the proposed Marine Personnel Regulations, 2024, receiving feedback from stakeholders on topics including the introduction of the Small Vessel Operator certificate of competency, improvements to tug safety, the modernization of the marine medical program, and hours of work on board vessels.

Security Administration

In the realm of marine security, Bill C-33 was introduced to significantly amend the *Marine Transportation Security Act*, expanding the minister's ability to delegate administration and enforcement, make interim orders and give directions, and authorize new regulations. The department also developed and implemented a Marine Enforcement Plan for the Special Economic Measures (Russia) Regulations and established the first marine preclearance location in Canada in collaboration with Public Safety at the Alaska Marine Highway System Ferry Terminal at Prince Rupert in British Columbia.

One of the measures for protecting against security threats and illegal interference with Canada's transportation system is through the Transportation Security Clearance program (TSC) managed by the department. TSC are a pre-requisite for those aviation and marine workers who, through the nature of their work, require unescorted access to the restricted areas of airports and marine ports or who have critical security functions. In 2022, the TSC program experienced a year-over-year growth of over 89% from 2021, and a 27% increase from 2019 (pre-pandemic).

Green Transportation

Public consultations were launched on the draft *Voluntary Guidance for Relevant Authorities on In-Water Cleaning of Vessels*. The voluntary guidance clarifies the recommended best practices that stakeholders can use to manage the risks of cleaning vessels in-water.

Canada signed the Clydebank Declaration at the 26th Conference of the Parties (COP26) to the United Nations Framework Convention on Climate Change (UNFCCC) in November 2021. The declaration commits signatories to support the establishment of green shipping corridors, defined as zero-emission maritime routes between two or more ports.

To support the implementation of the Clydebank Declaration, Transport Canada released the Canadian Green Shipping Corridors Framework at COP27 in November 2022. The framework sets out Canada's vision for green shipping corridors to ensure they are implemented consistently and to empower all parties to work together to eliminate emissions and address the climate crisis.

Transport Canada and the U.S. Department of Transportation also announced the Great Lakes – St. Lawrence Seaway System Green Shipping Corridors Network Initiative at COP27. Through this initiative, Canada and the U.S. will work together to facilitate the establishment of green corridors in the Great Lakes and St. Lawrence Seaway, including by convening stakeholders and supporting assessments and analyses in the region. This initiative follows from broader commitments under the February 2021 Joint Statement on the Nexus between Transportation and Climate Change, which sets out shared commitments by Transport Canada and the U.S. Department of Transportation to support the development of green transport infrastructure along the border, including in the management of the Great Lakes and St. Lawrence Seaway for maritime navigation, and work to advance cleaner, sustainable, and renewable fuels for shipping.

Ocean Protection Plan

In July 2022, the Government of Canada announced an additional \$2 billion to extend the Oceans Protection Plan for nine more years. This will continue making marine shipping safer, increasing protections for our marine ecosystems, and strengthening the role Indigenous Peoples have in how their traditional coasts and waterways are managed.

Preparing for and Responding to Marine Pollution Incidents

In November 2022, the Government announced that the Oceans Protection Plan will work towards a national system to manage marine emergencies using a cohesive, seamless marine pollution incident preparedness, response, and recovery system. Indigenous Peoples, coastal communities, and provincial/territorial governments are being integrated into the system by receiving notifications when incidents happen. They are also participating in the response and recovery of their community waters.

Vessels of Concern

Through the Abandoned Boats Program, the Government of Canada is committed to preserving and restoring Canada's marine ecosystem by removing abandoned boats from our waters while providing information to Canadians to help them better understand their responsibilities to properly dispose of these boats. In 2022, Transport Canada, in partnership with the Department of Fisheries and Oceans and the Canadian Coast Guard, assessed and removed 175 abandoned and wrecked vessels across Canada.

Marine Training Program

The Oceans Protection Plan is creating long-term training opportunities through the Marine Training Program. The Program has been highly successful at reducing barriers and creating opportunities for underrepresented groups (Indigenous Peoples, Northerners, and women) in the marine industry. It has seen 650 students graduating from programs in British Columbia, Nunavut and Nova Scotia to date.

Investing in Partnerships with Indigenous and Coastal Communities

Indigenous Peoples from coast-to-coast-to-coast have long-standing cultural and traditional ties with our oceans and waterways. Work with Indigenous Peoples, coastal communities, and Canadians has been the cornerstone of the Oceans Protection Plan. In September 2022, Canada announced an investment of \$50 million to directly support Indigenous partnerships in the Oceans Protection Plan. The funding will be used to support capacity for:

- Continued collaboration and involvement in initiatives to improve the marine transportation system and to advance marine safety and environmental protection;
- Building and maintaining relationships with Indigenous Peoples, including through partnerships agreements such as the Reconciliation Framework Agreement for Bioregional Oceans Management and Protection (RFA); and,
- Participation in engagement opportunities and training.

Protecting Whales

Southern Resident killer whales

For a fourth year, Transport Canada implemented [new and revised management measures](#), including limits on approaching killer whales, creating interim sanctuary zones and seasonal slowdown areas to reduce acoustic and physical disturbance from vessels on Southern Resident killer whales.

Under the Vancouver Fraser Port Authority's Enhancing Cetacean Habitat and Observation (ECHO) Program, [an inshore lateral displacement in the Strait of Juan de Fuca where vessels are asked to move](#)

[south when transiting the known feeding area](#) and [vessel slowdowns in Haro Strait, Boundary Pass](#) and at [Swiftsure Bank](#), were implemented.

North Atlantic right whales

For a sixth year, from April 20 to November 15, Transport Canada implemented [vessel traffic management measures in the Gulf of St. Lawrence](#) to reduce the risk of vessels colliding with North Atlantic right whales. In 2022, more than 99% of vessels complied with these measures.

Transport Canada was heavily involved in monitoring right whales through the National Aerial Surveillance Program's planes and drones, as well as [acoustic underwater gliders](#).

Underwater Vessel Noise Management Plans (UVNMPs)

Nationally, Transport Canada coordinated an Underwater Vessel Noise Reduction Target Advisory Committee to inform the development of a policy on UVNMPs.

International Maritime Organization

Canada continued work at the [International Maritime Organization](#) by participating in the Working Group at the Ship Design and Construction (SDC) Sub-committee and chairing the correspondence group created to review the existing [2014 IMO guidelines on underwater noise](#) and identify next steps.

Rail Network

Key traffic and volume statistics

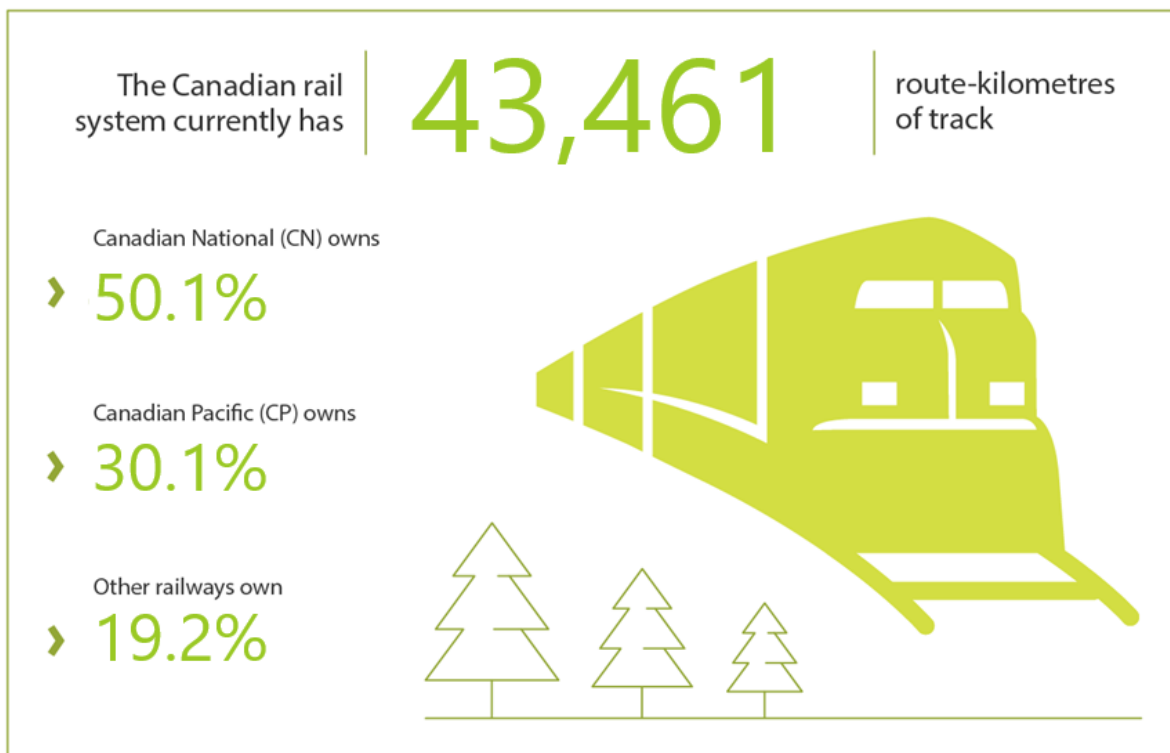
Rail transportation serves nearly every part of the Canadian economy. Canada has an extended railway system that is used to transport mainly freight to and from the U.S. and international markets via coastal ports. There are also many passenger lines across Canada.

Freight sector

The freight rail sector focuses on moving heavy, bulk commodities and container traffic over long distances.

Canada has 2 major Class I freight railways, CN (Canadian National) and CP (Canadian Pacific), which are responsible for most freight rail traffic. Large U.S.-based carriers also operate in Canada, including the Burlington Northern Santa Fe Railway Company and CSX Transportation Inc.

Together, CN, CP and Burlington Northern Santa Fe Railway Company link trade between Canada, the U.S. and Mexico. Burlington Northern Santa Fe's service to Canada's Pacific Gateway gives the Vancouver Fraser Port Authority the unique advantage of being the only port on the West Coast served by 3 Class I railroads.



In terms of equipment, in 2021 Class I railway carriers had:

- 2180 locomotives
- 51,453 freight cars (mainly hopper cars, boxcars, flatcars and gondolas), and
- 403 passenger cars

There are 79 companies that currently hold a Railway Operating Certificate (26 federal railway companies and 53 local railway companies).

There are also many federally or provincially regulated shortline railways that connect shippers with Class I railways or to other shortlines and ports in order to move products across longer distances. Shortline railways move an average of \$34.4 billion worth of freight to and from continental rail networks, and to ports and terminals.

Passenger sector

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

Most of its services are in central Canada along the Québec-Windsor Corridor. VIA Rail also operates long-haul passenger routes between Toronto-Vancouver and Montréal-Halifax, as well as regional services to destinations such as Jasper, Prince Rupert, Winnipeg, and Churchill. In 2022, VIA Rail ran an average of 328 weekly train departures on a 12,500 km network.

In addition to shortlines that move freight, some provide passenger rail services or tourism services, like the Rocky Mountaineer Railway.

Recent Policy Developments

Competitiveness and Efficiency

In 2022, Transport Canada both pre-published and consulted on the Transportation Information Regulations (TIR). The TIR's were finalized in 2022 and went to the Canada Gazette on January 4th, 2023. These regulations aim to significantly enhance the data reported by Class 1 rail carriers, increase transparency, and ultimately, support efforts to improve supply chain resiliency and overall fluidity within the freight rail network.

In addition, for the first time since 2019, Transport Canada organized two (2) hybrid meetings, including in-person representation of the Commodity Supply Chain Table (the Table), in Edmonton and Ottawa. The meetings featured representatives from the Supply Chain Task Force as panellists to discuss and address transportation system issues, and to discuss next steps following the release of the Task Force's Report. The Table brings together over 150 participants from the freight rail-based supply chain, for national, inclusive discussion forum focused on the resiliency, efficiency, and effectiveness of Canada's freight rail-based transportation system.

In 2022, the Government of Canada began exploring options to improve passenger rail frequencies, on-time performance, and shorten travel times in Southwestern Ontario. To this end, the Government of Canada has contracted the services of an external advisor to analyze passenger demand and route options to deliver passenger rail services that best meet the needs of communities in Southwestern Ontario. The external advisor will examine concrete options to enhance service in Southwestern Ontario for potential future integration into the High Frequency Rail (HFR) project. A final report to the federal government is expected by the end of 2023.

High Frequency Rail

The High Frequency Rail Project in the Toronto-Quebec City Corridor will reduce pollution and provide better and faster service between the major centres of Quebec City, Trois-Rivières, Montréal, Ottawa,

Peterborough and Toronto. Expected to be the largest infrastructure project Canada has known in 50 years, it will also create jobs for the next decade.

The procurement process will help select a private developer partner to work in collaboration with VIA HFR, the newly created subsidiary of VIA Rail, to design and develop the High Frequency Rail project.

The Government of Canada is committed to transforming intercity passenger rail to meet the needs of travellers. This commitment is evidenced by the major milestones the project has achieved this past year, and the momentum we are building with the launch of the formal stage of the procurement process.

- In March 2022, the Government of Canada launched the procurement process with the Request for Expressions of Interest. 54 formal responses were received for the RFEOI.
- An RFEOI update was issued on October 31, 2022, to summarize certain key themes stemming from the RFEOI process and provide additional information and clarifications to some elements of the HFR Project.
- In November 2022, a wholly owned subsidiary of VIA Rail (VIA HFR) was established to be a dedicated project office that will work collaboratively with the private developer partner to design, develop and optimize High Frequency Rail.

Safety and Security

Passenger Rail Transportation Security Regulations

During 2022, Transport Canada fully implemented the *Passenger Rail Transportation Security Regulations* and continued to provide oversight of the regulations (which commenced October 6, 2020). It issued industry guidance documents, inspection checklists, and standard operating procedures to help railway operators better understand requirements to meet regulatory compliance, as well as additional oversight tools for the inspectorate to undertake their oversight activities.

Transportation of Dangerous Goods by Rail Security Regulations

The *Transportation of Dangerous Goods by Rail Security Regulations* were implemented and applied to railway carriers and railway loaders across Canada who transport, handle and/or store dangerous goods. Oversight of these regulations, through activities such as security risk assessment and security plan reviews, comprehensive inspections, visual security inspections, on-site inspections, began in 2019 and continued into 2022.

In addition to developing and issuing applicable industry guidance documents, inspection checklists, and standard operating procedures for the inspectorate and industry stakeholders, Transport Canada continues to implement its compliance and enforcement approach to address non-compliance.

Proposed Amendments to the Railway Safety Administrative Monetary Penalties Regulations

Transport Canada pre-published proposed amendments to the *Railway Safety Administrative Monetary Penalties Regulations* in *Canada Gazette*, Part I, on July 2, 2022, to ensure greater protection of rail infrastructure. The purpose for the proposed amendments is to deter unauthorized interference with the railway network, to promote cooperation with Transport Canada enforcement officers, and to ensure the consistent and effective enforcement of Canada's rail security regime. They are in response to a rise in security incidents in Canada's rail transportation system and intended to ensure the safety and security of all Canadians. The amendments would enable the use of administrative monetary penalties to address violations if needed.

Responding to Emergencies and Threats

By exercising its regulatory authorities and working closely with stakeholders and industry partners, Transport Canada continues to make efforts to limit harm to Canadians and the environment, and to mitigate disruptions in the transportation system. In recognition of the importance of common situational awareness to address emergencies, Transport Canada continued to serve as a federal focal point for monitoring and information sharing of significant incidents impacting the transportation system through its Situation Centre (SITCEN). The SITCEN maintains a 24/7 state of readiness, in coordination with other federal operations centres, including Public Safety's Government Operations Centre (GOC).

Green Transportation

Rail transportation makes Canada's transportation network more efficient 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 goal of reducing greenhouse gas emissions by 2030.

Under a series of voluntary agreements with the Railway Association of Canada, Transport Canada has been working with the rail industry to reduce greenhouse gas emissions. The latest agreement with the Railway Association of Canada covered the 2018-2022 period. Under the agreement, emissions intensity levels were tracked through annual reporting.

The agreement also set greenhouse gas emissions intensity reduction targets for 2022, including a 6% reduction for Class 1 freight and intercity passenger, and a 3% drop for regional and shortlines. Under the agreement, Transport Canada and the Railway Association of Canada collaborated to produce the Rail Pathways Initiative, a two-phased approach to examine leading decarbonization pathways and to align government and industry's work to reduce emissions from the rail sector.

Transport Canada is currently engaging the Railway Association of Canada to renew the agreement with an ambitious climate vision, including absolute emission reduction targets for 2030.

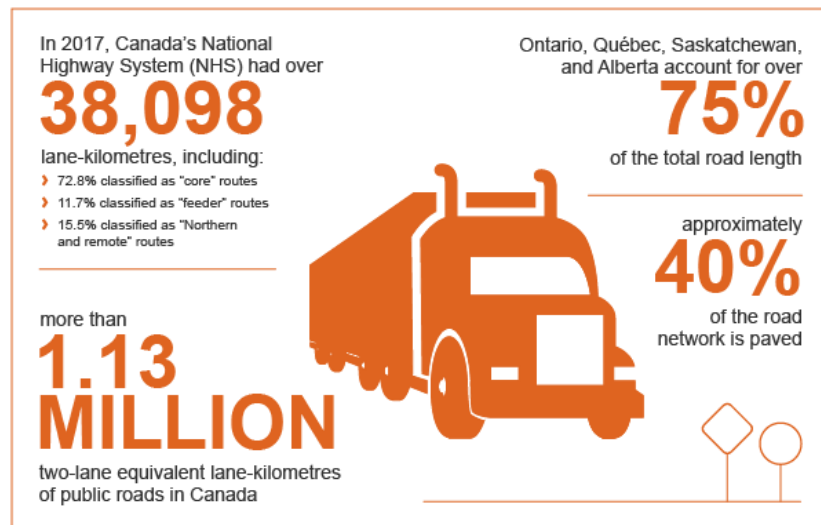
Road Network

Key traffic and volume statistics

Road transportation is the primary mode for moving both freight and passengers across Canada. Canada is connected from the Pacific to Atlantic coasts by a network of highways, anchored by the Trans-Canada Highway. Canada also has extensive road networks across the southern, more populated areas.

In 2021, 26.2 million road motor vehicles were registered in Canada, up 1.9% from 2020 and 17.2% from a decade ago. Around 91.9% were vehicles weighed less than 4,535 kilograms, mainly passenger automobiles, pickups, SUVs, and minivans, 4.7% were medium and heavy trucks weighing 4,535 kilograms or more, and 3.4% were other vehicles such as buses, motorcycles and mopeds.

As of December 2022, there were 136,664 trucking businesses. 52,766 of these companies had employees and 83,898 didn't. 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 are mostly located in Ontario (48.3%), Quebec (14.9%), Alberta (14.5%), and British Columbia (10.9%).



Recent Policy Developments

Competitiveness and Efficiency

In 2022, lingering impacts of COVID-19 were still negatively impacting the road sector from both the passenger and freight perspectives, as well as the efficiency of national supply chains and trucking services. Passenger volumes continued to recover well along with the return of traffic congestion in many major cities. Although there was a high demand for freight and trucking services in the beginning of the year, some downward trends in freight demand were observed in later part of the year due to inflation and rising interest costs.

Transport Canada continued to work closely with federal partners like the Canada Border Services Agency to accelerate reopening of Free and Secure Trade (FAST) enrollment centres at the Canada-U.S. border and increase the number of FAST-approved Canadian truck drivers for transborder freight.

Both Canada and the United States re-opened their land borders in the Fall of 2021, allowing travel between the two countries for non-essential purposes as well. However, non-U.S. travellers, including

truck drivers, seeking to enter the United States via land ports of entry at the U.S.-Canada borders were still required to be fully vaccinated against COVID-19 and provide proof of vaccination upon request.

Safety and Security

There has been a [significant downward trend in motor vehicle casualties for decades in Canada](#). Since their peak in the mid-1970s, fatalities have decreased by over two-thirds while serious injuries have declined over 60% even though the number of vehicles and kilometres driven by Canadians have increased significantly.

Over the years, Transport Canada has introduced or updated a significant number of [vehicle safety standards, regulations, technical standards and test methods](#) concerning 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.

In 2022, Transport Canada continued to support the safety and security of the road network with the following initiatives:

- Supported the development and publication of updated Jurisdictional Guidelines for the Safe Testing and Deployment of Automated Driving Systems by the Canadian Council of Motor Transport Administrators.
- Contributed to the development of international guidelines on Functional Safety, Validation Methods, and Safety Considerations for Human Drivers using automation technologies, published by the World Forum for the Harmonization of Vehicle Regulations and the Global Forum for Road Traffic Safety.
- Advanced research on simulation and scenarios-based approaches for testing automated vehicle technologies to inform future guidance and regulatory work.
- Continued to advance vehicle cyber security by progressing on the priorities set out in Transport Canada's Vehicle Cyber Security Strategy, including research on emerging issues such as supply chain cyber security and automotive cyber talent and skills development.
- Continuation of the school bus safety pilot projects and recommendations from the *Strengthening School Bus Safety in Canada* report from the Task Force on School Bus Safety facilitated the development of the proposed regulations in the *Canada Gazette Part I* published in July 2022. Stakeholder comments to these proposed regulations are being reviewed with a view to publishing a final regulation in 2023-24.
- The Enhanced Road Safety Transfer Payment Program continued to monitor the progress and administer the funding of 89 approved projects to support nationally consistent road objectives (e.g., measures to address impaired and distracted driving).
- Completed preparations with provincial and territorial enforcement communities for full implementation of the requirement for Electronic Logging Devices by motor carriers starting January 2023.

Green Transportation

The Pan-Canadian Framework on Clean Growth and Climate Change 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, the federal-provincial-territorial Task Force on Heavy-Duty Vehicle Retrofits was created to explore options to reduce emissions from the existing fleet. In 2021, the Task Force completed its Phase

I Report, which delivered a detailed profile of Canada’s heavy-duty vehicle sector. Phase II was completed in 2022, which examined and assessed various retrofit programs and policies across North America that support the adoption of retrofits.

The Government of Canada released its 2030 Emissions Reduction Plan (ERP) in March 2022, which included several commitments and investments that target emissions from on-road vehicles:

- Committing to develop zero-emission vehicle sales regulations for both the light-duty vehicle sector and the medium- and heavy-duty vehicle sector. Proposed regulations for light-duty vehicles were released in December 2022.
- Investing an additional \$1.7 billion to extend and expand the Incentives for Zero-Emission Vehicles (iZEV) Program for light-duty vehicles for 3 years until March 31, 2025.
- Investing \$400 million in support of the Government’s objective of adding zero-emission vehicle chargers to Canada’s network. This is supported by an additional \$500 million from the Canada Infrastructure Bank.
- Investing \$547.5 million to launch the Incentives for Medium- and Heavy-Duty Zero-Emission Vehicles (iMHZEV) Program in July 2022 and provide up to \$200,000 for eligible medium- and heavy duty zero-emission vehicles.
- Investing \$199.6 million to retrofit large trucks currently on the road.
- Investing \$75.8 million to contribute to accelerating the safe deployment of medium- and heavy-duty zero-emission vehicles on Canadian roads through: research; deployments; capacity funding for PTs and guideline, code, standard, and regulatory development; and capital investments at TC’s Motor Vehicle Test Centre..
- Investing \$2.2 million to support Greening Government fleet electrification commitments.

The Government of Canada also released Canada’s Action Plan for Clean On-Road Transportation in December 2022. This Action Plan outlines Canada’s whole-of-government strategy to reduce emissions from the on-road transportation sector through a combination of regulations, vehicle incentives, capitalizing on clean growth opportunities, collaboration with leading jurisdictions, and investments in charging infrastructure and consumer education. These measures have helped Canada reach a light-duty zero-emission vehicle market share of 8.9% in 2022, increasing from 5.6% in 2021 and 3.8% in 2020.

Transportation of Dangerous Goods

[Improving the oversight of the transportation of dangerous goods](#)

Transport Canada has continued to oversee the safe and secure transportation of dangerous goods (TDG). In 2022, 96 inspectors carried out 3,689 inspections and completed 5,039 enforcement actions and risk reduction measures.

[Research projects and key research results](#)

Work continues with [23 research projects](#) related to the transportation of dangerous goods, to be initiated from 2020 to 2023. A total of \$3.6 million has been allocated to the 23 projects, with funding provided through court settlements paid in connection with the tragic 2013 Lac-Mégantic train derailment.

Other key research completed by the TDG Program in 2022 included:

- [the assessment of the safety risks associated with the shipment of sub-standard lithium batteries](#);
- [the validation of the safety improvements made for shipments of flammable liquids by rail using train derailment modelling](#); and
- the assessment of whether intermediate bulk containers for dangerous goods could safely provide an extended life. (To be published in April 2023)

Regulatory sandbox on electronic shipping documents

As part of the [Transportation Sector Regulatory Review Roadmap](#), Transport Canada launched a [Regulatory Sandbox on Electronic Shipping Documents](#). This pilot project assessed the feasibility, effectiveness, and safety of using electronic shipping documents instead of the currently required paper documents. More detailed information on this pilot project can be found within the [Executive Summary](#).

Findings included that electronic shipping documents enable enhanced accident site response for first responders, the faster sharing of information, increased compliance, greater economic benefit for businesses and, a reduction in the use of ink/paper. From these findings, Transport Canada plans to publish proposed amendments to the TDG Regulations to allow the use of the electronic shipping document for the transport of dangerous goods by rail and remotely piloted aircraft (RPA). Future work may include exploring applications for road and air transport.

Responding to emergencies

CANUTEC (the Canadian Transport Emergency Centre) continued to operate its national advisory service which assists emergency response personnel in handling dangerous goods emergencies on a 24/7 basis. In addition, they continued to distribute the [Emergency Response Guidebook \(ERG\) 2020](#) to Canadian first responders. This guide, designed for incidents involving dangerous goods on highways or rail lines, helps first responders identify hazards based on the material involved in an incident, and protect themselves and the public during the initial response to an incident. The next iteration of the ERG is currently in development in collaboration with the United States, Mexico, and Argentina. It is expected to be released in mid-2024.

System Performance

Freight

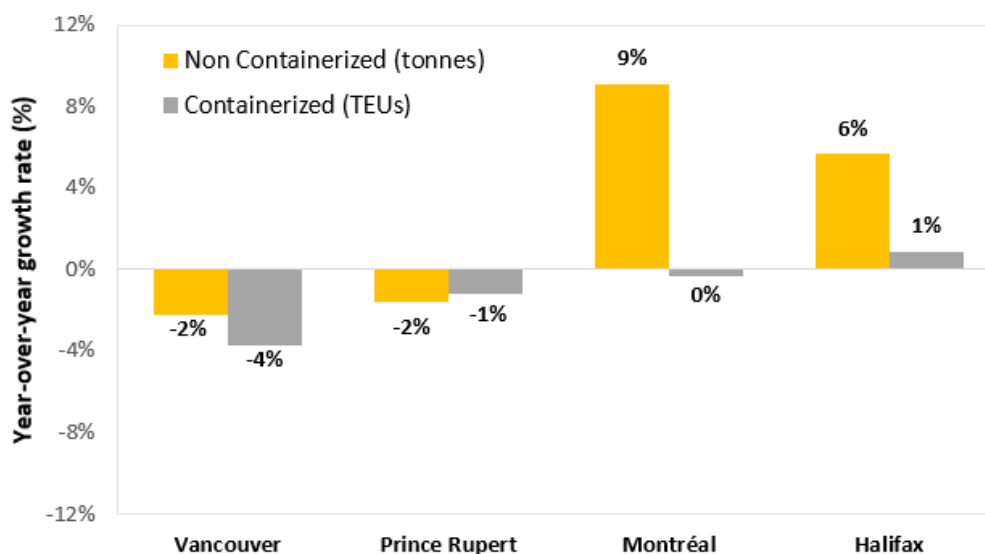
The Canadian transportation network faced significant challenges in 2022 and had to adapt to the rapidly changing demand, geopolitical events, and disruptive weather events.

The first half of 2022 was characterized by a strong demand for consumer goods (notably sourced in Asia) driven by the change in household consumption patterns from services to goods during the COVID-19 pandemic. While all modes of transportation benefited from this demand boost, this also led to high levels of congestion particularly at West Coast ports, at inland railyards (Toronto, Montréal) and at warehouses (due to lack of space). The first half of the year was also marked by disruptive events on the network including the emergence of the Omicron variant which constrained labour capacity, the recovery from the November 2021 atmospheric river in British Columbia that destroyed key rail segments and highways in the province, and the Russian invasion of Ukraine in February 2022 which created uncertainty.

In the second half of the year, the Canadian transportation system recorded strong volumes for bulk commodities exports. Demand for grain transportation rebounded with the 2022-2023 crop year after the poor harvest the previous year. The global demand for Canadian potash and crude oil was also strong due to market opportunities emerging from the conflict in Ukraine. Transported volumes of auto ramped up over that period as parts availability increased. In contrast, demand for containerized import goods started to fade in the last quarter of 2022 amid softer economic conditions.

Marine transportation

Figure 1: Port Volume Growth Rates



Source: Vancouver Fraser Port Authority, Prince Rupert Port Authority, Montréal Port Authority, Halifax Port Authority

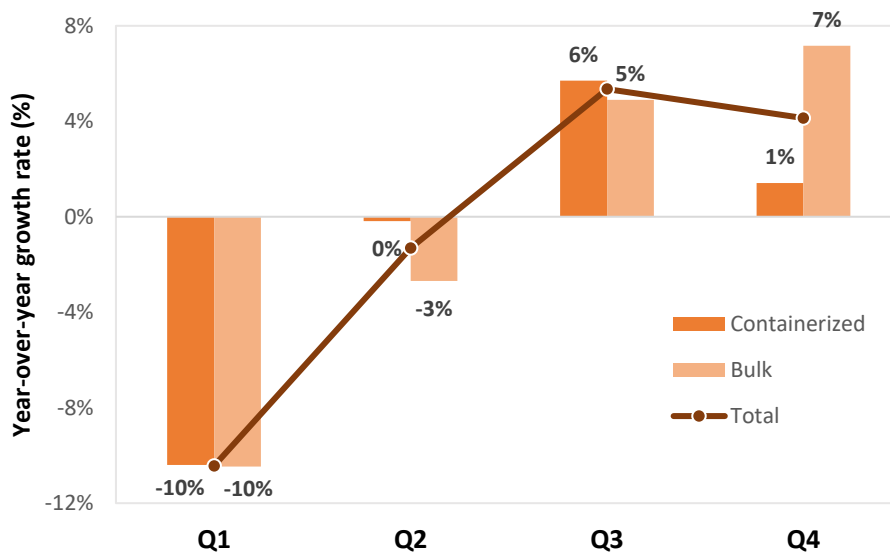
Containerized throughput (in twenty-foot equivalent units – TEU) decreased by 2.1% at the four largest Canadian container ports in 2022 compared to 2021.

On the West Coast, the demand for the return of empty containers to Asia has decreased significantly at the end of 2022, while loaded container exports volumes have not returned to pre-pandemic levels. These trends, combined with the impacts of the major floodings in British Columbia at the beginning of 2022 led to a 3.7% decrease of container throughput at the Port of Vancouver and a 1.2% decrease at the Port of Prince Rupert. On the East Coast, the Port of Montréal saw a slight decrease in container throughput (-0.3%). In contrast, container volume increased by 0.9% at the Port of Halifax. In 2022, the Port of Saint John handled over 100,000 TEUs notably due to investments in container terminal capacity which has attracted additional rail and marine services at the port.

Non-containerized throughput at the four largest Canadian Ports decreased by 0.5% in 2022 compared to 2021, with a large increase recorded at the Port of Montréal (+9%) and a slight decrease at the Port of Vancouver (-2%) mainly driven by dry bulk including grain (-23%) and forestry products (-7%).

Rail transportation

Figure 2: Rail Volume Growth Rates



Source: Transport Canada, Class I Railways

In 2022, system wide rail traffic of Class I railways remained slightly below 2021 levels (-0.7%).

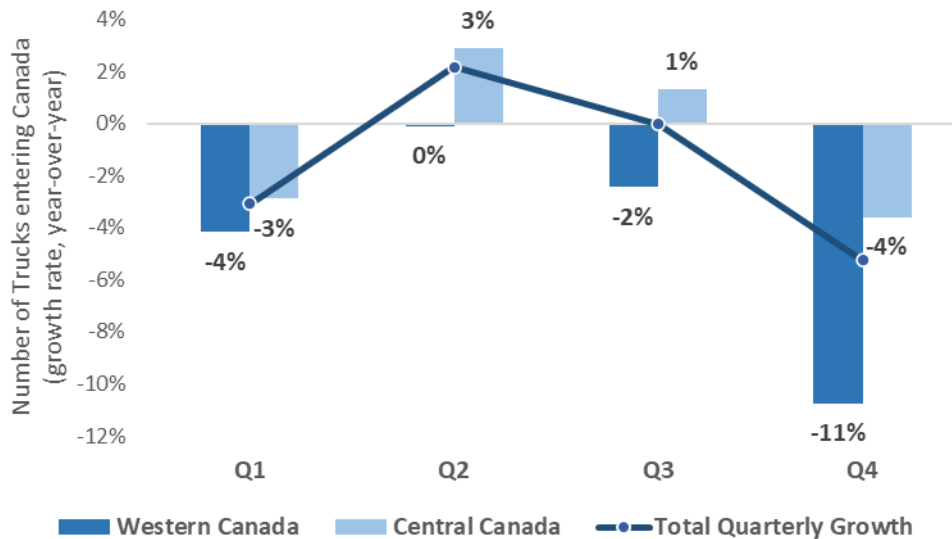
Overall, bulk commodities slightly decreased in 2022 compared to 2021 (-0.5%), largely related to softer grain volumes in the first half of the year owing to a small crop size from the 2021-2022 crop-year. Rail traffic growth was recorded for bulk in the last two quarters, respectively 4.9% in Q3 and 7.2% in Q4, mainly driven by a strong demand for export bulk commodities such as the new crop of grain, auto and potash. Containerized rail traffic decreased by -0.9% in 2022 compared to 2021, as softer demand was reported at the end of 2022.

Rail shipments to and from Western Canada decreased by -2.3% in 2022 compared to 2021, amid impact of weather disruptive events and congestion issues in the first half of the year. On the other hand,

Central and Eastern Canada saw increases in their overall rail shipments of respectively 2.9% and 0.8% in 2022 compared to 2021.

Road transportation

Figure 3: Trucking Volume Growth Rates

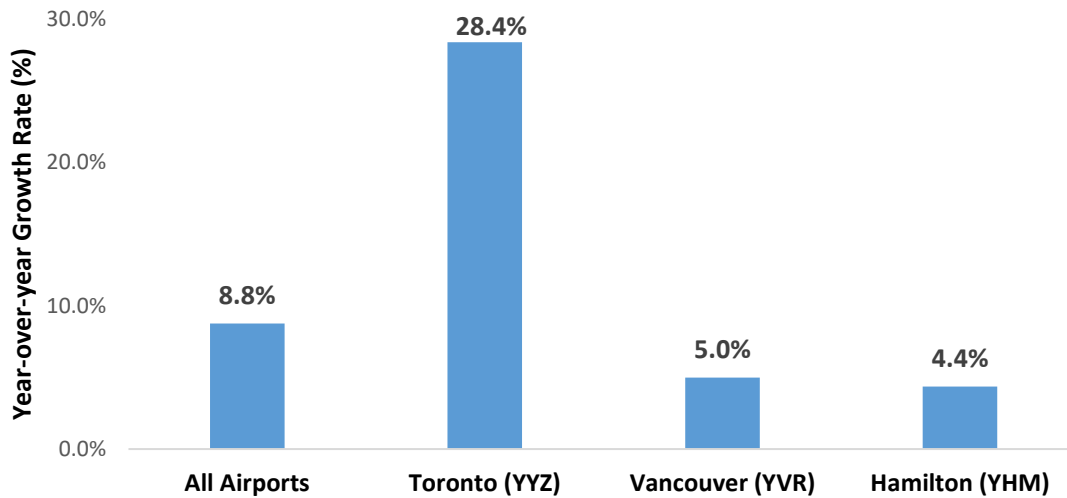


Source: Statistics Canada, Table 24-10-0052-01

In 2022, truck border crossings decreased by 1.6% overall compared to 2021 and remains slightly below pre-pandemic levels (-2.5% compared to 2019). Truck border crossings were consistently below pre-pandemic levels throughout 2022 except for four months where traffic slightly exceeded 2019 levels. Trade by trucks to and from the U.S. is concentrated in Central Canada. Truck border crossings slightly declined by -0.6% in Central Canada, -4.3% in Western Canada, and -4.1% in Eastern Canada in 2022 compared to 2021.

Air cargo transportation

Figure 4: Air Cargo Volume Growth Rates



Source: Electronic Collection of Air Transportation Statistics

The emergence of e-commerce during the pandemic has been beneficial for air cargo transportation. In 2022, airports in Canada handled 1.5 million tonnes of cargo loaded and unloaded from domestic and foreign carriers, an 8.8% increase compared to 2021 volumes.

The 3 busiest airports for air cargo were Toronto Pearson International Airport (423.5 thousand tonnes in 2022, 28.4% more than in 2021), Vancouver International Airport (269.8 thousand tonnes in 2022, 5.0% more than in 2021) and Hamilton International Airport (163.1 thousand tonnes in 2022, 4.4% more than in 2021).

Supply chains

Container supply chain

The fluidity of the import containers supply chain was challenged in the first half of 2022 amid high demand, limited capacity, and several disruptive events, before easing in the second half of the year due to softer macro-economic conditions.

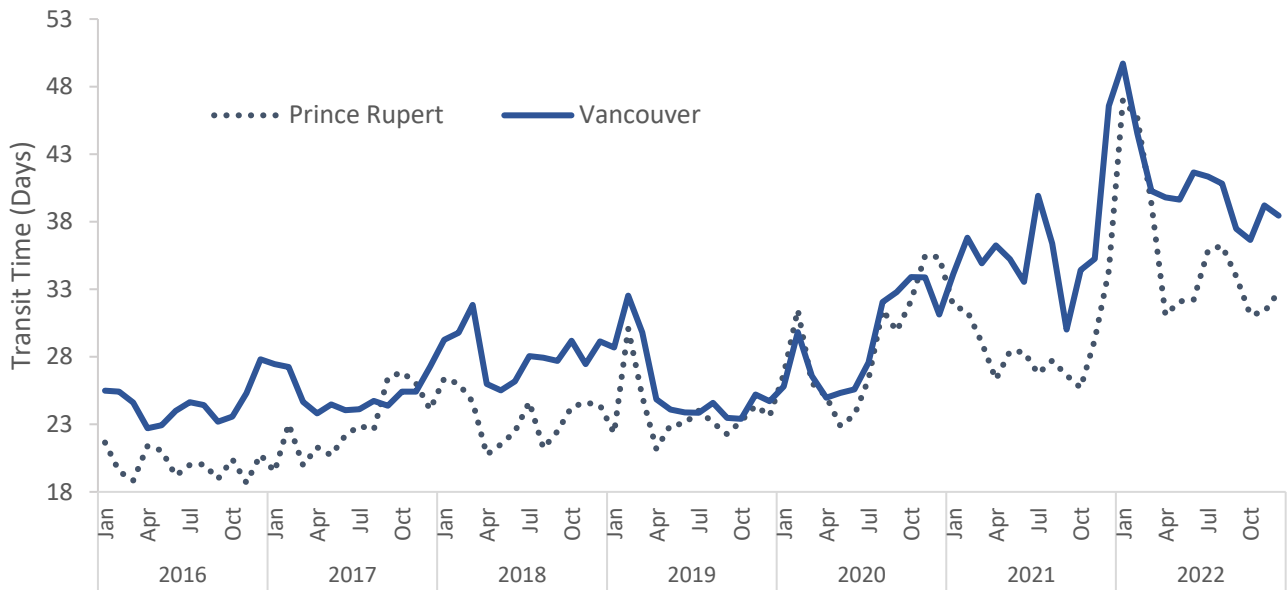
The average end-to-end transit time to import a container from Shanghai to Toronto via West Coast ports was 39.9 days in 2022, above the 3-year average of 30.0 days. Transit time peaked in January 2022, averaging 47.0 days when transiting via the Port of Vancouver and 49.7 days via the Port of Prince Rupert. The British Columbia flooding in November 2021 led to significant transportation challenges in the province in the following months, which increased transit time at ports. There was an improvement in performance in the second half of 2022 as transportation networks recovered from disruption and congestion challenges. Container dwelling at West Coast ports remained high but anchoring decreased which led to an easing of overall transit time. Despite these challenges, Canadian ports remained time-competitive with their U.S. counterparts.

On Canada's East Coast, container end-to-end transit time from Antwerp to Toronto averaged 24.2 days in 2022, 5 days above the 3-year average of 19.6 days. This increase was largely a result of high demand, uncertainty, and significant congestion at intermodal yards in Central Canada hindering the ability to

move containers off port terminals to transit inland. Nearing the end of 2022, transit times on the East Coast started returning to normal levels decreasing to just over 20 days.

With the alleviation of supply chain challenges and congestion in 2022, container freight rates started to decrease after the sharp peaks recorded at the end of 2021 and the beginning of 2022. Container freight rates on the West Coast saw the largest decrease in 2022, hovering close to pre-pandemic levels at the end of 2022. Container freight rates on the East Coast have been decreasing throughout the year but remained up to three times higher than pre-COVID levels on some shipping lanes at the end of 2022, due to a higher demand for East Coast ports.

Figure 5: End-to-end transit time for inbound containers via West Coast ports (Shanghai to Toronto)



Source: Transport Canada, Class 1 Railways, Canadian Port Authorities, CargoSmart

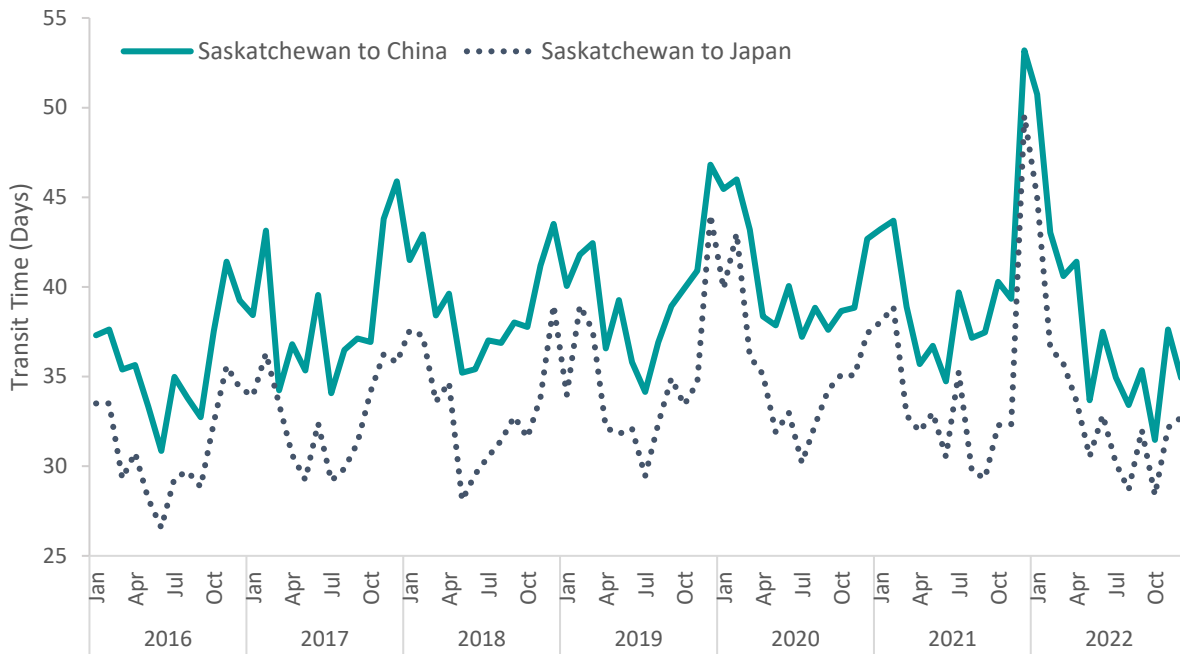
Grain supply chain

The Western Canada's grain harvest was 73.7 million tonnes for the 2022-23 crop year, 50% more than the previous year when drought and bad weather conditions led to a much smaller crop (49.2 million tonnes). Grain volumes transported in the system have also rebounded with rail shipments from the Prairies up 34.0% and exports from western ports up 51.0% for the 21 first weeks of the 2022-2023 crop year.

The performance of the Western grain supply chain measured using the end-to-end transit time to ship grain from Saskatchewan to Asia through the Port of Vancouver has stayed relatively stable over the last couple of years, with some seasonal changes including times peaking in winter months.

In December 2021 and January 2022, end-to-end grain transit time peaked to respectively 53.2 and 50.7 days for the route from Saskatchewan to China, due to the impacts of the British Columbia floodings. Despite the congestion at the beginning of the year, the end-to-end transit time for grain from Saskatchewan to Asia via the Port of Vancouver averaged 37.9 days in 2022 for the grain going to China, below the 3-year average of 39.9 days. For the grain going to Japan, the 2022 end-to-end transit time averaged 33.2 days, slightly below the 3-year average of 34.8 days.

Figure 6: End-to-end transit time for grain from Saskatchewan to Asia via the Port of Vancouver

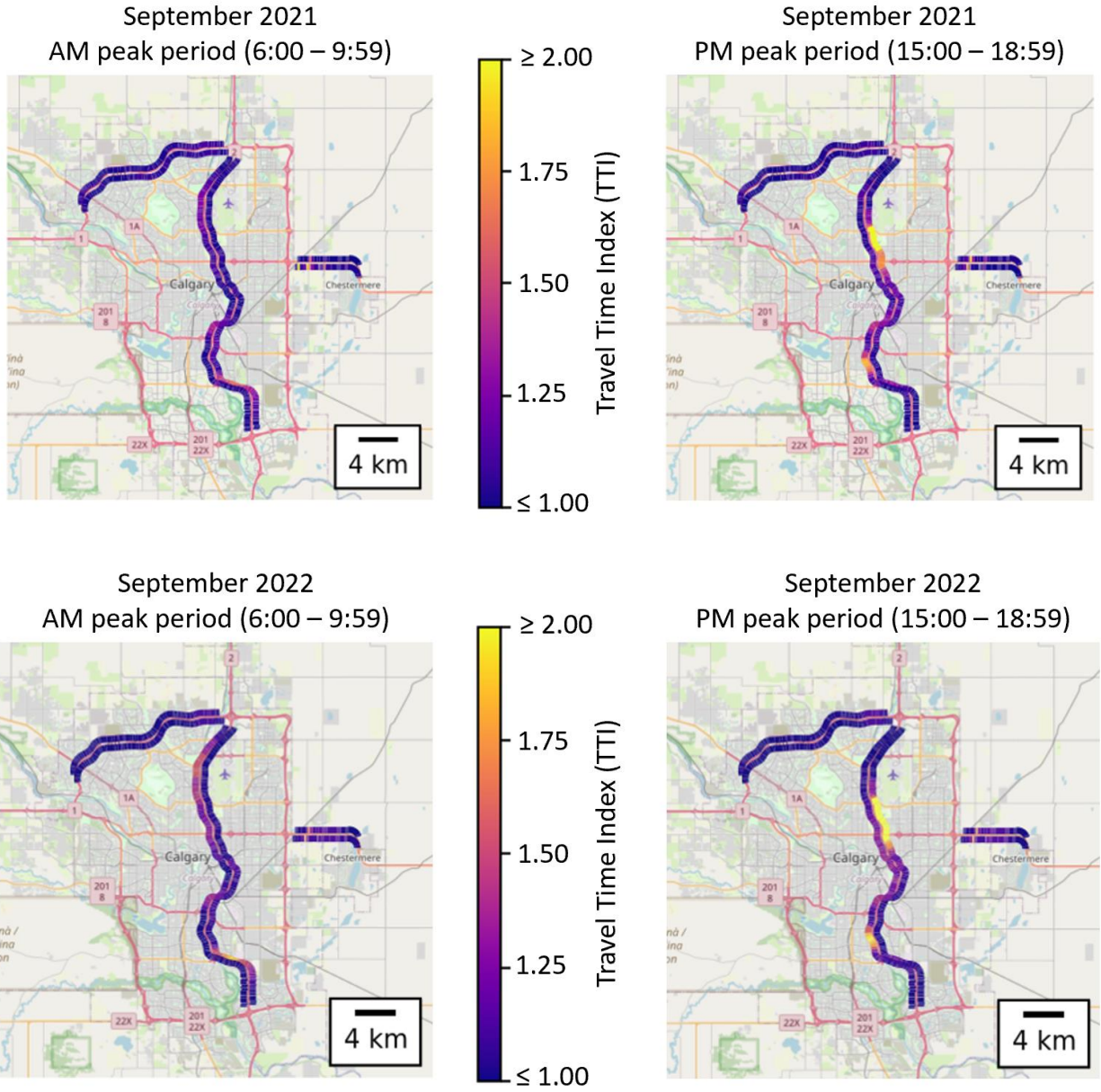


Source: Transport Canada, Class 1 Railways, Port of Vancouver, Lloyds List intelligence

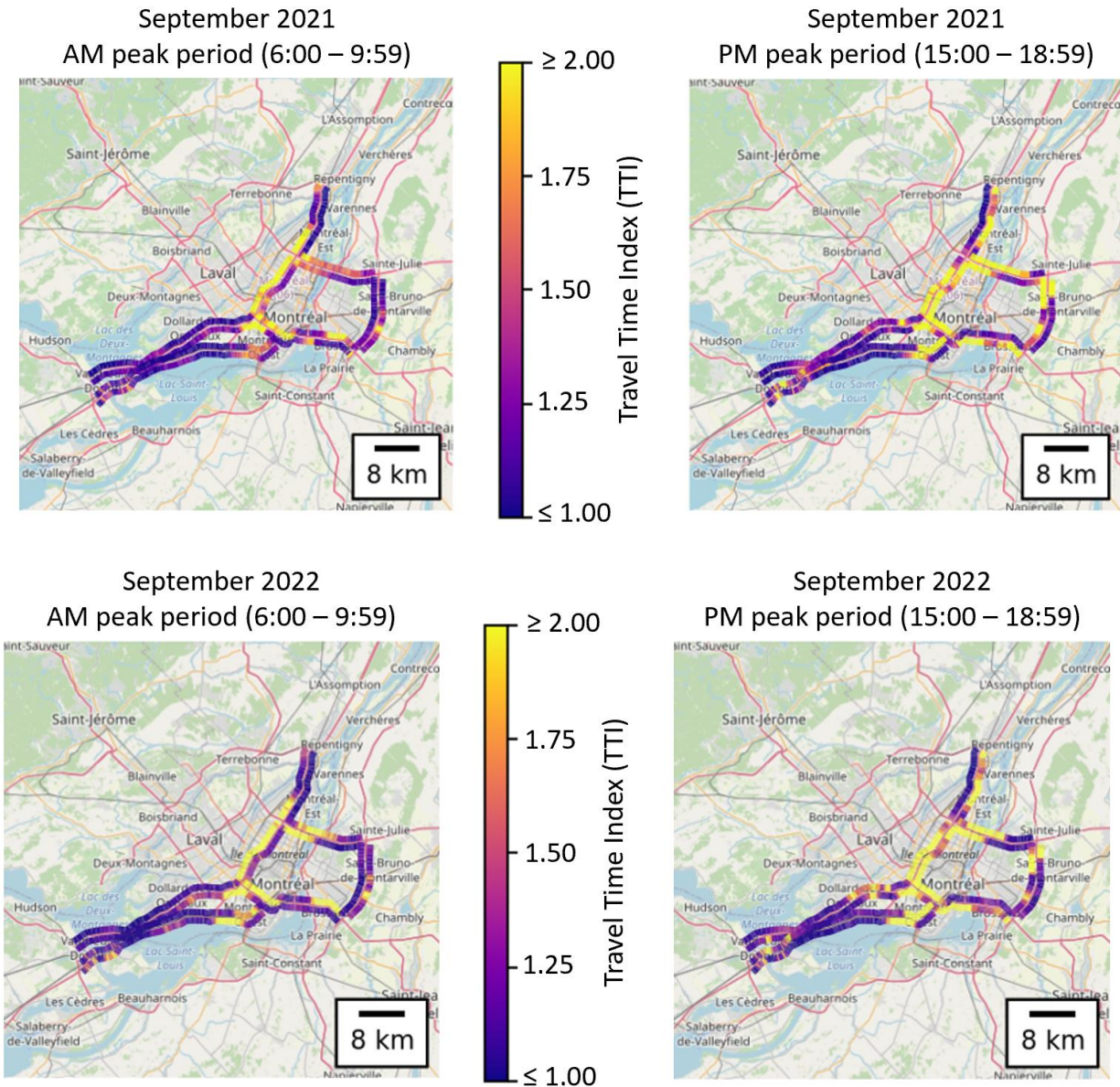
Urban mobility

The COVID-19 pandemic led to a significant change in commuting behaviour in Canada with the implementation of working from home and hybrid working models. Road congestion levels varied across urban areas. In Vancouver, traffic congestion has been at or above pre-pandemic levels consistently since mid-July 2022. In Montréal, traffic congestion increased steadily in 2022 with a momentarily drop in July and has plateaued from September to December while hovering slightly above or close to pre-pandemic levels in the second half of the year. In Toronto, traffic congestion has been slowly increasing in 2022 with congestion reaching its peak in late November but remained below pre-pandemic levels for the whole year. In Calgary and Halifax, congestion on key corridors has remained at or around the previous year's levels, still well below pre-pandemic levels.

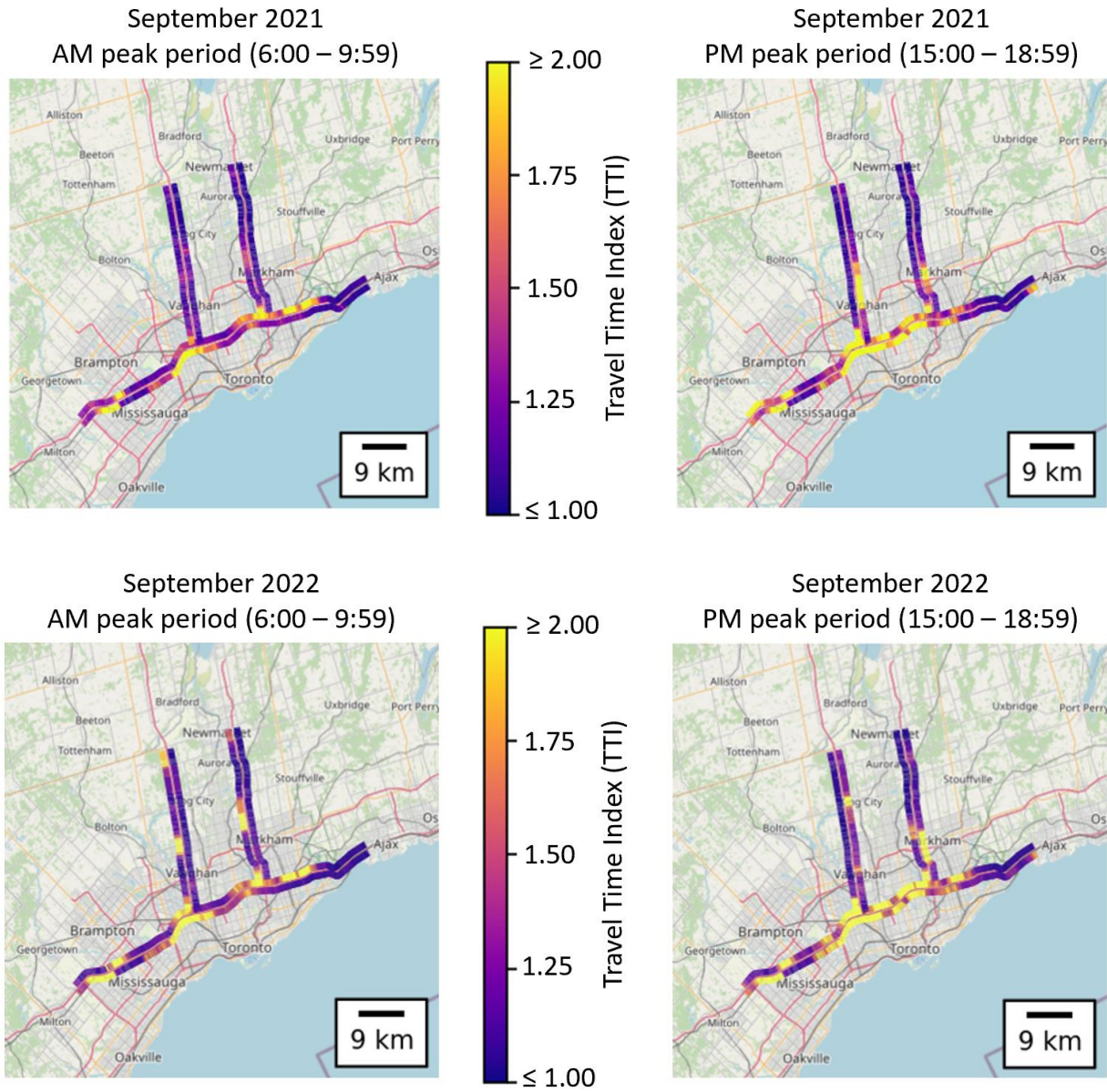
Map 1: Monthly Travel Time Index for Calgary (Alberta), Monday-Friday by Peak Period



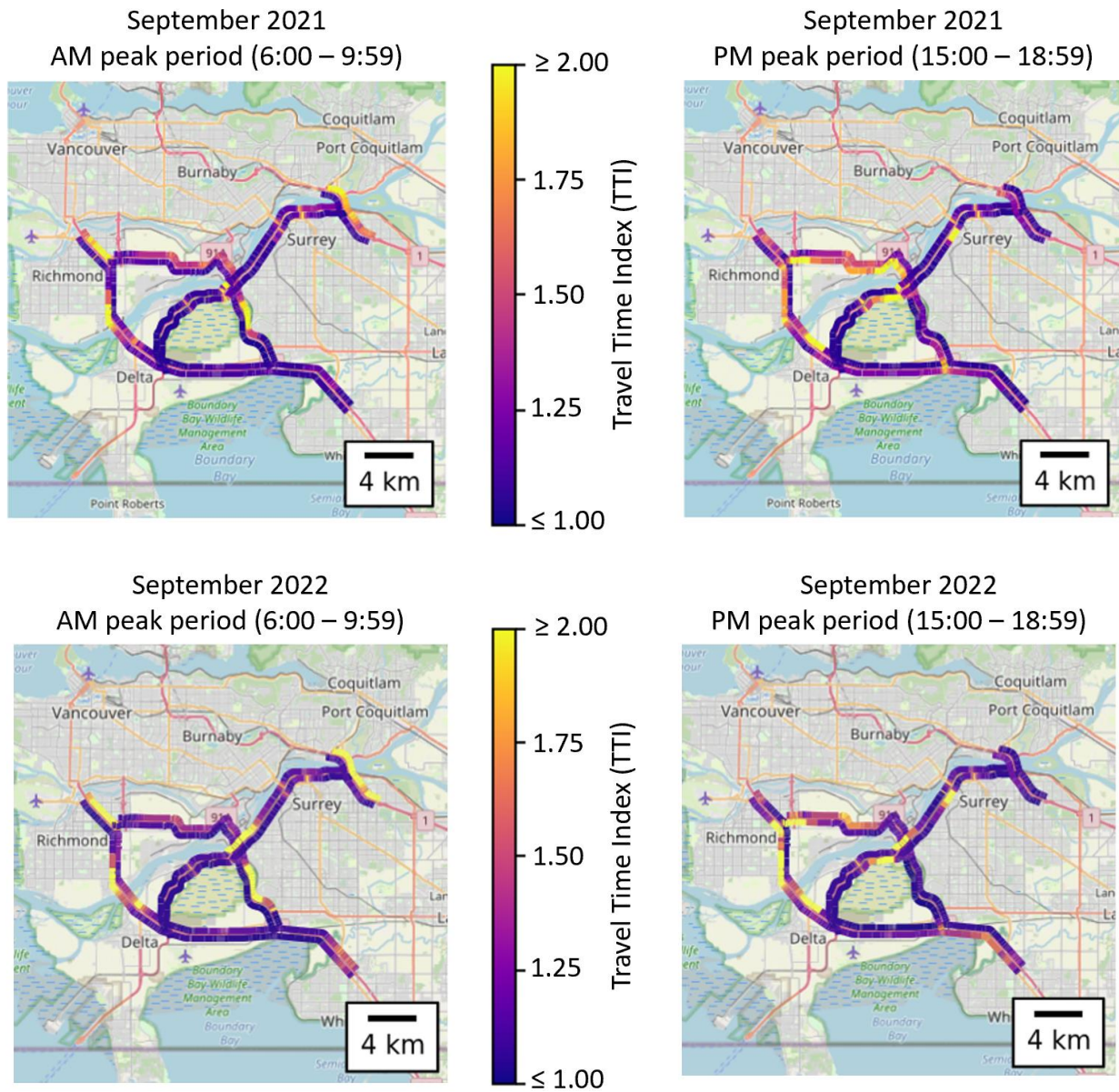
Map 2: Monthly Travel Time Index for Montréal (Québec), Monday-Friday by Peak Period



Map 3: Monthly Travel Time Index for Toronto (Ontario), Monday-Friday by Peak Period



Map 4: Monthly Travel Time Index for Vancouver (British Columbia), Monday-Friday by Peak Period



Passenger Performance

Air

Despite witnessing record level increases in demand during peak seasons throughout 2022, air passenger ridership totals for the year remained below pre-pandemic levels. In 2022, the sector served:

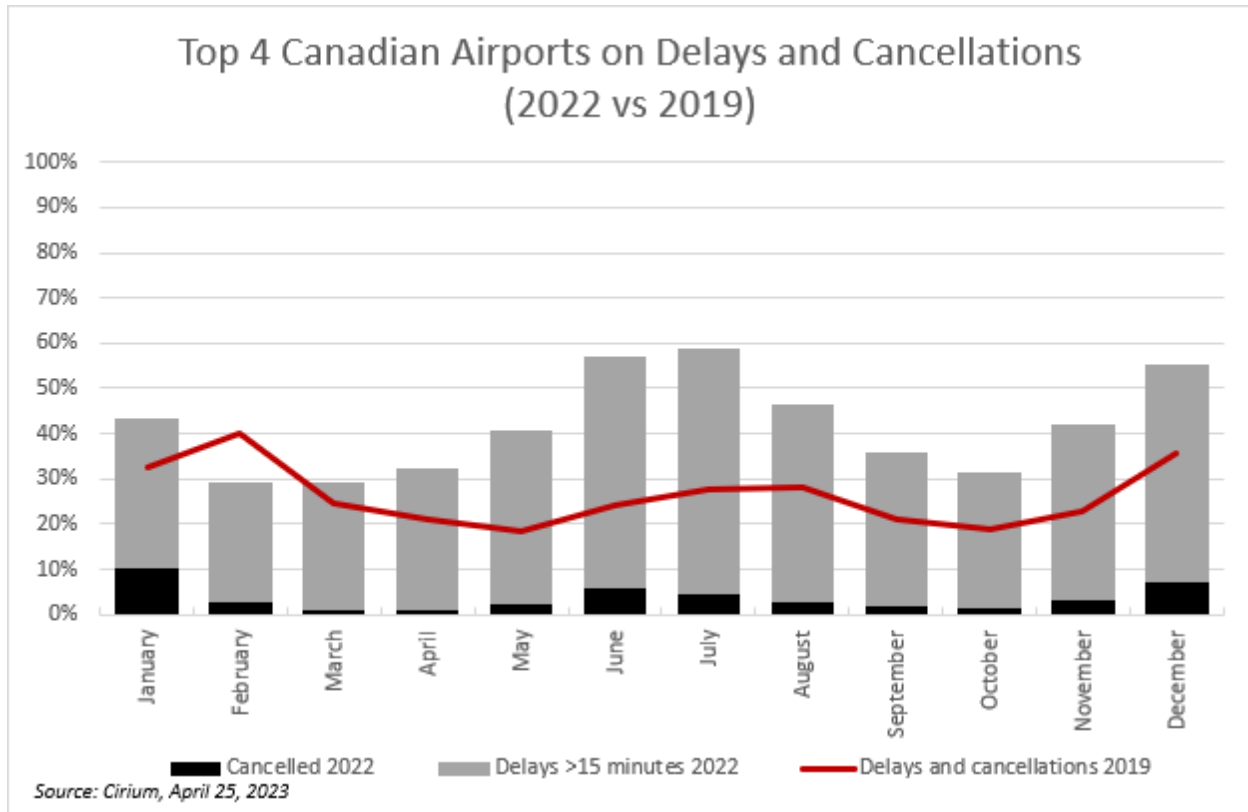
- 72 million passengers on domestic services (compared to 24 million in 2021),
- 21 million passengers on services between Canada and the U.S. (compared to 4 million in 2021), and
- 25 million passengers on other international services (compared to 6 million in 2021).

Around 92.7% (108.9 million) of all air passenger traffic was handled at Canada's Top 20 airports:

- Toronto Pearson International served 34.8 million passengers, representing 29.6% of national air passenger traffic.
- Vancouver International served 18.5 million passengers, representing 15.7% of national air passenger traffic.
- Montréal-Trudeau International served 15.2 passengers, representing 13.0% of national air passenger traffic.

The air travel industry in Canada has faced significant challenges in the aftermath of the COVID-19 pandemic. The industry experienced a surge in demand during the summer and holiday season of 2022, which resulted in disrupted travel at Canadian airports. The surge in passenger demand, which saw an increase of over 260% from the end of January to early July, outpaced the industry's ability to hire, train and certify new employees at the required pace, resulting in increased delays and cancellations.

During the summer of 2022, the proportion of flight delays and cancellations at the four major Canadian airports (Toronto, Vancouver, Montreal, and Calgary) peaked in July at nearly 60%, which was more than double compared to the same month in 2019. Although the industry made some improvements in the following months, inclement weather during the holiday season adversely affected travellers, with delays and cancellations increasing to 55% compared to the same period in 2019.



Marine

The cruise industry in Canada is showing signs of recovery, with 2.2 million passengers in 2022, which is a positive development compared to the pandemic-hit year of 2020. However, that figure is still lower than the 2.8 million passengers recorded in 2019 before the COVID-19 pandemic. Despite this, the cruise industry's steady recovery is a good indicator of the public's growing confidence.

Rail

VIA rail carried 3.3 million passengers in 2022, an increase from the 1.5 million passengers in 2021. With the rollout of vaccines and some restrictions lifted, passenger counts increased drastically during 2022. Although up 118% over 2021, ridership was only 66% of the pre-pandemic level of 5 million in 2019. The Québec City-Windsor corridor was the busiest segment of VIA Rail's network, handling 96% of total passengers in 2022.

Road

Border crossings remained fluid throughout 2022 and became slightly more fluid following the lifting of all COVID-19 border measures on October 1st. At most border crossings wait times stayed slightly below the 3-year average in 2022.

The travel time index presented within the freight section is also a useful indicator of passenger travel performance. The index's values display the changes in traffic and congestion on the urban road network, which is used by both freight and passenger vehicles.

Public Transportation

In 2022, Canada's urban transit networks experienced a significant recovery, with an estimated 1.2 billion rides provided throughout the year, a 49.7% increase from 2021. However, the year began with reduced demand for public transit due to COVID-19 resurgences and stricter public health measures, resulting in a drop to 40.3% of pre-pandemic levels in January.

As summer ended and schools and workplaces resumed, more people used public transit, resulting in ridership reaching over 70% of pre-pandemic levels from September to December. Despite this recovery, the total number of passenger trips in 2022 was still about 61.7% of the 2019 level, with about 723.3 million fewer rides.

Total operating revenues for urban transit networks reached \$2.8 billion in 2022, a 59.2% increase from 2021. However, this was still about \$1.4 billion lower than the pre-pandemic level in 2019. Overall, while 2022 showed improvement, the passenger urban transit network has not yet fully recovered to pre-pandemic levels.

Incident and Accident Rates

Air

In 2022, 136 aviation accidents (under the *Canadian Aviation Regulations*) that involved Canadian-registered aircraft were recorded, down from 158 recorded in 2021. These accidents caused 27 deaths; an increase compared to 2021's 26 deaths.

In 2022, Canada continued to support the flow of legitimate air travellers and goods while maintaining a high level of aviation security. The Canadian Air Transport Security Authority screened over 65 million passengers and their belongings at Canadian airports.

Marine

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 2022, there were 166 reportable accidents that involved at least one Canadian registered vessel, slightly above the average of 164 from the previous four years.

Rail

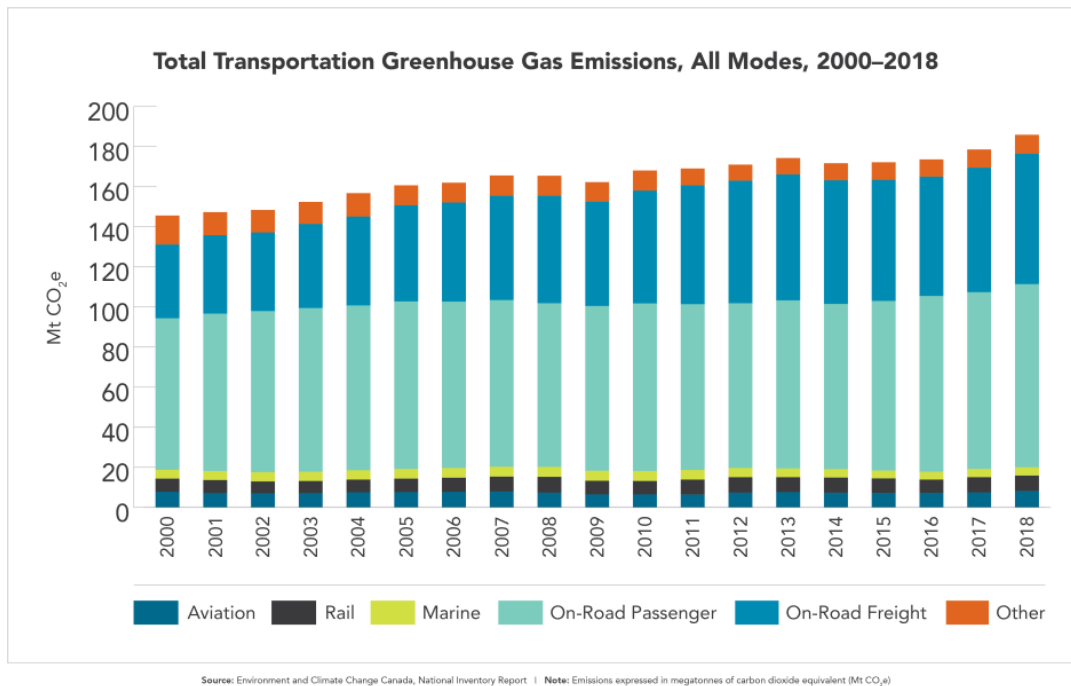
In 2022, there were around 1,082 recorded railway accidents, up 4.2% from 2021. These accidents resulted in 66 deaths, down -5.4% compared to the previous 10-year average. Accidents that involved dangerous goods increased to 107, up from 86 the year prior.

Road

In 2021, deaths from road collisions were compared to 2012, despite significant growth in the number of licensed drivers, vehicles registered, and vehicle kilometres driven. Canada's death rate per 10,000 registered motor vehicles was 0.67 in 2021. This rate has been relatively stable in recent years but significantly lower (-28.0%) than a decade earlier.

Greenhouse Gas Emissions

Overall, domestic transport-related greenhouse gas emissions have increased by 11.0% from 2010 to 2019 but decreased by 14.0% from 2019 to 2020 due to the COVID-19 pandemic. Canada's National Inventory Report 2000-2018 noted lower emissions for marine transportation, and higher emissions for aviation, rail and road transportation (see Figure). For the latest historical emissions estimates for Canada, including for transportation, please consult [Canada's official greenhouse gas inventory](#).



Air Sector

In 2020, domestic aviation emitted 4.9 megatonnes of CO₂e (carbon dioxide equivalent). This accounts for 3.1% of Canada's transportation-related greenhouse gas emissions. While emissions from air travel have increased since 2005 due to increased air traffic, reports note a steady improvement in air carrier emission intensity performance.

Marine Sector

In 2020, the domestic marine sector in Canada was responsible for emitting 4.2 megatonnes of CO₂e, which accounts for 2.7% of the country's transportation-related greenhouse gas emissions. This represents a 5.5% increase in emissions from 2005 to 2020. However, there has been a positive development in the reduction of oil discharges from commercial vessels at sea. This has been attributed to the increased use of regular aerial surveillance, which has made ships more aware that illegal polluting activities can be detected.

Rail Sector

In 2020, the rail sector emitted 7.3 megatonnes of CO₂e (carbon dioxide equivalent). This accounts for 4.6% of domestic transportation related greenhouse gas emissions.

According to the 2020 annual Locomotive Emissions Monitoring Report, published in 2022, the total greenhouse gas emissions from rail operations (expressed as CO₂e, or carbon dioxide equivalent) in Canada decreased by 7.4% between 2019 and 2020. This decrease was driven by fuel efficiency improvements of Class 1 freight railways, as well as a reduction in passenger rail activity due to the COVID-19 pandemic.

This reduction mostly reflects an increase in both freight and passenger traffic. Overall, the intensity of greenhouse gas emissions dropped slightly between 2018 and 2019. While Class 1 freight emissions increased by 0.3%, the intensity of intercity passenger emissions decreased by 8.4%, and the intensity of regional and shortline greenhouse gas emissions decreased by 1.7%.

Road Sector

In 2020, the road transportation sector emitted 134 megatonnes of CO₂e (carbon dioxide equivalent), or 84% of Canada's transportation related greenhouse gas emissions, and 21% of all Canadian greenhouse gas emissions.

From 2005 to 2020, greenhouse gas emissions from road transportation grew by 2% as on-road activity and emissions were significantly reduced in 2020 from the previous year due to the onset of the COVID-19 pandemic and related travel restrictions. Despite fuel efficiency gains across all vehicle classes, this increase stems from:

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

Greenhouse gas emissions from on-road freight vehicles increased by 22% between 2005 and 2020, from 48 to 59 megatonnes. Over the same period, road freight activity, measured in tonne-kilometres, also increased by around 25%.

Greenhouse gas emissions from on-road passenger vehicles decreased by 10% between 2005 and 2020, from 84 to 75 megatonnes. Over the same period, road passenger activity measured in vehicle passenger-kilometres increased by about 2%. The decrease in emissions in 2020 is the result of personal travel reductions related to the COVID-19 pandemic combined with vehicle fuel efficiency improvements and an increased share of zero-emission vehicles (ZEVs) on the road.

Federal regulations have set progressively stricter greenhouse gas emission standards for both new passenger automobiles and light trucks of model years 2017 to 2026, and new heavy-duty vehicles and engines of model years 2021 to 2027. This builds on existing standards covering earlier model years. In December 2022, the Government published draft zero-emission vehicle (ZEV) sales requirements for manufacturers and importers to ensure that their fleet of new light-duty vehicles offered for sale in Canada meets specified annual targets of ZEVs beginning with model year 2026 and reaching full stringency (100%) in 2035. The Government also announced its aim to achieve 35% of total medium- and heavy-duty vehicle (MHDV) sales being zero-emission by 2030 and plans to require 100% MHDV sales to be zero-emission by 2040 for a subset of vehicle types based on feasibility.

Trends and Outlook

The trends and outlook of the Canadian transportation sector will be largely affected by long-term structural drivers.

- Changes in demographics
- Environment and climate initiatives
- Technological advancement

This chapter will take a closer look into these long-term drivers and highlights the importance of understanding the impacts and implications they have on Canada's transportation sector. Furthermore, key factors affecting short-term recovery of the sector are also covered, such as emerging COVID-19 variants, the impact of public investment, and a shift in demand for transportation services across all modes.

Key Long-term Drivers Affecting Transportation

Changing Demographics

In 2022, Canada witnessed record population growth, reaching an estimated 39.6 million by end of year, fueled largely by international migration. Looking ahead, the population is expected to increase by more than 2.5 million by 2036. Canada is by far leading the G7 countries for population growth, as has been the case for many years. As major urban centres absorb the bulk of that growth, the United Nations, through its World Urbanization Prospect, projects that urbanization in Canada will reach 88% in 2050, up from 83% today, increasing demand for urban travel and the risks of congestion. Higher urban congestion could also raise demand for public transit. According to the TomTom 2021 Traffic Index, which ranks urban congestion worldwide across 404 cities worldwide, Vancouver ranks as the most congested city in Canada, followed by Montreal and Toronto with extra overall travel time between 24% and 33%.

The growing population of Canadian seniors will also affect the nature of passenger transportation in the future by increasing the need for more flexible and accessible transportation. In 2036, Statistics Canada expects the population aged 65 and over to reach 24% of the population, up from 18.5% in 2022.

The demographic outlook highlighted above will also impact the human resource availability of transportation activities and operations. As the population ages and an increased portion of today's workers retire, there will be a smaller supply of skilled professionals to take their place.

Green Transportation

In 2022, the Government of Canada continued to take action to advance zero-emission vehicle (ZEV) adoption across the country and committed to implementing ZEV regulations in both the light-duty vehicle sector and the medium- and heavy-duty vehicle sector. These regulations will set annually increasing requirements towards achieving 100% light-duty vehicle ZEV sales by 2035 and medium- and heavy-duty ZEV sales by 2040 where feasible. The light-duty regulations include interim targets of at least 20% by 2026 and at least 60% by 2030, while interim targets for the medium- and heavy-duty regulations will be explored for different vehicle segments based on feasibility.

Technological Advance

Canada needs to position itself for a future characterized by emerging and disruptive technologies and new approaches. Connectivity and automation will have far-reaching impacts on the transportation sector, and the economy. Adapting to the exponential growth in the rate of change of technological advancement and applying the benefits of these advancements to improve the efficiency and safety of the transportation sector is key in maintaining a world class transportation network.

Significant advances in information, communication, and other technologies have taken place over the past two decades. These technologies have brought major change to nearly every sector of the economy, including transportation.

New technologies are being used for transportation infrastructure, equipment, and supply chain management to make them smarter and more efficient. Changes like ride sharing and “last-mile” delivery services have changed both how and where transportation occurs and will continue to disrupt transportation.

This trend shows no sign of slowing down, and in fact, is likely to speed up as the public and private sector adjust to new ways of working. Changes in technology and innovation will impact both demand and supply of transportation. Major upcoming disruptions include:

- recent technology (cloud logistics, internet of things),
- emerging technology (artificial intelligence, advanced analytics, blockchain), and
- advanced technology (automated vehicles, robotics).

These innovations could improve corridor flows, reduce costs, help with collaboration, reduce safety and environmental impacts, change the origin and destination of shipments, and the nature of transportation services.

Additionally, digitalization is playing a key role in Transport Canada’s technological advance, highlighted in the Government of Canada’s announcement to launch a new digital infrastructure initiative to strengthen Canada’s Supply Chains. This initiative, which would form a key part of Canada’s National Supply Chain Strategy, would improve the efficiency and resiliency of Canada’s supply chain by:

- Making it easier to plan and coordinate transportation activities to alleviate bottlenecks, reduce congestion and be more resilient to disruptions by collecting and sharing data and analytics in real time;
- Supporting industry-driven approaches to digital solutions, especially in the areas of data collection, coordination, and improving the visibility of the transportation network for carriers, shippers and governments;
- Supporting evidence-based decision-making to further optimize existing networks and better plan infrastructure investments.

Key Short-term Drivers Affecting Transportation

Air Passenger Recovery

Recovery in air transportation activity in Canada has been strong in 2022, with traffic to some of the regions fully recovered, but uncertainties remain influenced mainly by economic and transportation specific considerations. In 2022, traffic recovery for the domestic sector was 83% of 2019 levels, with

December 2022 at 89%, while international traffic was 68% of 2019 levels, with December 2022 also at 89%. Recovery by the last quarter of the year was below that of the United States and above Australia and the European Union plus United Kingdom. Average airfares have been consistently above pre-pandemic levels in 2022.

A return to full pre-pandemic levels is expected by mid-2024. Both positive and negative risks remain in terms of pent-up demand with strong leisure travel rebound, higher use of communication technology leading to weaker business travel, potential economic growth slowdown, and increased fares.

Freight Recovery

The freight sector continued to grow in 2022 due to post-pandemic pent-up consumer demand, some supply-chain improvements, the war in Ukraine, and increased harvests.

Shipments of domestic manufactured goods, especially automotive, realized growth as consumer demand increased and microchip supply shortages were alleviated. The Russia-Ukraine conflict affected many industries, especially natural resources, which experienced both disruption and opportunities. This was especially notable with increased coal and potash volumes in response to a global supply short-fall due to sanctions against Russia and Belarus. Grain exerted the greatest demand pressure, due to an improved harvest in addition to increased demand from the war in Ukraine.

In the first half of 2022, post pandemic pent-up demand for consumer goods and producers seeking greater buffer stocks to manage risk resulted in a shortage of warehouse capacity. Lack of warehouse capacity had a limiting effect on imports of containerized goods and domestic shipment of manufactured products. Also mitigating the upside demand forces, the freight sector experienced challenges owing to persistent supply-chain issues and monetary policy tightening. In the second half of 2022, consumption and imports of containerized goods slowed as monetary tightening weighed on debt sensitive households and as governments reduced COVID stimulus.

Over the coming year, demand for freight transportation is still expected to be challenged by economic headwinds resulting from global monetary policy tightening. In the long run, freight transportation is expected to return to growth. Long-term growth will be characterized by demographic shifts and global economic prospects. Climate change and mitigation efforts will likely alter the types of goods being transported.