

RAC QUARTERLY REPORT Q4-2021

February 9, 2022



Railway Association
of Canada



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Introduction

This is the second edition of the Railway Association of Canada's (RAC) Quarterly Report. The report compiles weekly, monthly, and quarterly data from railways and various statistical and regulatory agencies to provide a timely update on the state of the economy, the transportation sector, and freight and passenger rail operations. Links to all data sources are included throughout the report.

Much of the 2021 data in this report is compared to 2020, for a year-over-year comparison, and 2019, for an analysis relative to pre-pandemic activity levels.

Executive Summary

Freight Rail

In the fourth quarter of 2021, Class 1 freight activity levels (CN and CP, network-wide) were adversely affected by severe flooding in British Columbia and other supply chain challenges. Total revenue ton-miles in Q4-21 were 11% below 2020 and 5% below 2019 levels. Shipments of grain & fertilizers; intermodal; and automotive products were down by over 10% compared to Q4-20. Full year 2021 RTMs were nearly identical to 2020 RTMs, having increased by 0.1% from 382,281 million to 382,824 million. Gains in 2021 in metals & minerals and coal offset reductions in grain & fertilizers. In terms of performance, six out of twelve key financial, operating, and safety metrics improved compared to Q4-20, including but not limited to: train weight; train speed; and fuel efficiency.

On a year-to-date basis (January-November), the number of non-intermodal carloads originated by Canadian railways (including shortlines) was 4% below 2020; however, the number of intermodal units was up by 15%.

Rail freight rates have increased in recent months, however, compared to a January 2020 pre-pandemic baseline, rates in December 2021 were up by just 7%. This is a relatively modest increase compared to the price inflation of the products that are shipped by rail. Since January 2020, industrial prices and commodity prices have increased by 19% and 52%, respectively.

Since March 2021, railway shipments of cross-border trade have recovered to pre-pandemic levels. Dwell times at the Port of Vancouver rose significantly in December 2021; and the average monthly dwell time in 2021 was 0.4 days longer than in 2020 (4.1 vs 3.7). The average monthly dwell time at the Port of Montreal in 2021 was equal to 2020 at 4.6 days, however, this is much longer than the 2018 and 2019 averages of 3.6 and 3.1 days, respectively.

Passenger Rail

While challenges persist for passenger railways, in recent months, ridership has recovered to a limited extent. In November 2021, urban transit ridership had risen to 46% below its 2019 level – the first time since the onset of the pandemic that ridership had recovered to over half its pre-pandemic level. Intercity passenger rail ridership levels have been more than double 2020 levels in every month since April 2021; however, these numbers are still well-below 2019 ridership numbers. Expenditures on tourism rail in Q3-21 were 63% below Q3-19.

Rail Safety

In Q4-21, rail safety performance was strong. The total number of accidents and the accident rate were lower than both Q4-20 and the Q4 2016-2020 average.

State of the Canadian Economy

As of September 2021, the five key economic indicators shown below had recovered to above pre-pandemic (2019) levels.

After hovering just below its 2019 level for nearly a year, employment achieved its 2019 level in August 2021 and closed the year in December at 2.1% above 2019 levels.

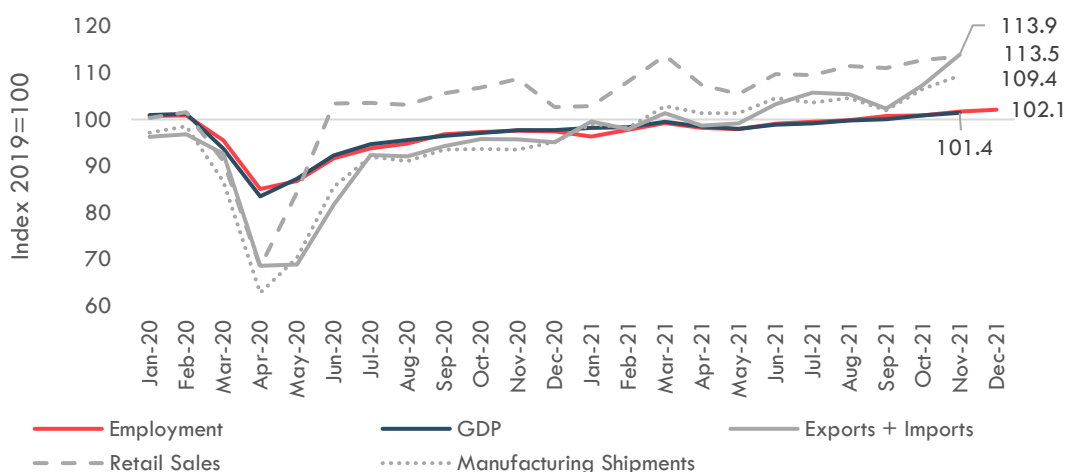
In September 2021, GDP recovered to its 2019 level and has enjoyed gains in both October and November 2021. As of November, GDP is sitting 1.4% above 2019 levels.

Retail sales provide insight into household consumption, which is the largest contributor to Canada's GDP at over 50% of total GDP. In every month since June 2020, retail sales have remained above 2019 levels. As of November, retail sales are 13.5% above 2019 levels.

Manufacturing shipments provide an indication into the strength of Canada's manufacturing sector. Manufacturing shipments have continued to recover and were nearly 10% above 2019 levels in November 2021.

The recovery of trade (imports + exports) has followed a similar path to manufacturing shipments.

Key Canadian Economic Indicators



Source: Statistics Canada, [Labour Force Survey](#); [Gross domestic product at basic prices](#); [Canadian International Merchandise Trade](#); [Retail trade sales by industry](#); and [Monthly Survey of Manufacturing](#)

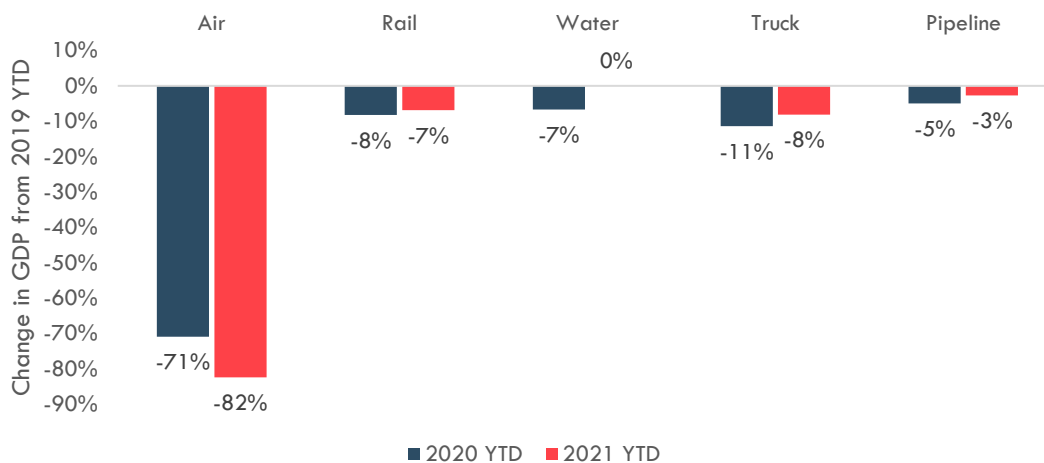
Note: Data is seasonally adjusted.

Rail and Other Modes of Freight Transportation

Each transportation sector has been impacted differently throughout the pandemic. The air transportation sector has been the most adversely affected. This is not surprising, given that the air transportation sector is heavily focused on passengers, while the other transportation sectors are mainly focused on freight.

In terms of GDP, rail and truck have been impacted similarly, while water and pipeline have been impacted less.

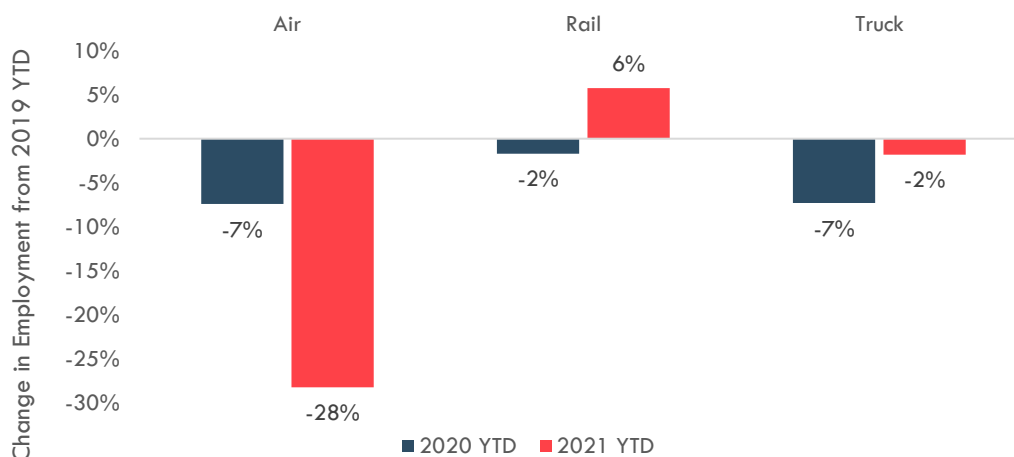
Modal Comparison of GDP (YTD Jan-Nov)



Source: Statistics Canada, [Gross Domestic Product by Industry](#)

2021 YTD rail employment was greater than 2019 levels, while employment in trucking was still down 2% YTD.

Modal Comparison of Employment (YTD Jan-Nov)

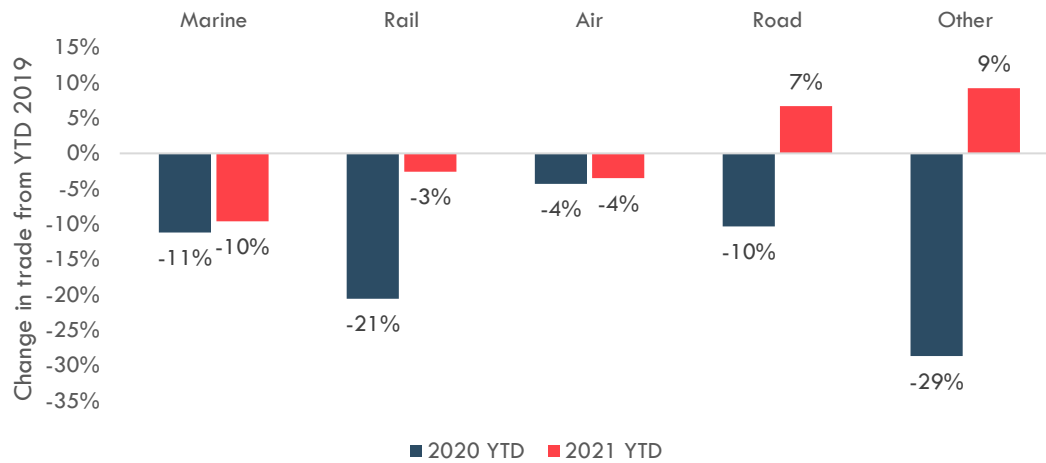


Source: Statistics Canada, [Survey of Employment, Payrolls and Hours](#)

Note: The Survey of Employment, Payrolls and Hours does not provide information on employment for the marine or pipeline sectors.

Compared to 2019, 2021 YTD trade was down in maritime, air and rail modes, and up in road (trucking) and other modes.

Modal Comparison of Trade (YTD Jan-Oct)



Source: Transport Canada, [Transport Canada in brief](#)

Class 1 Data

The Class 1 data covers CN and CP's network-wide operations across North America.

Weekly Trend

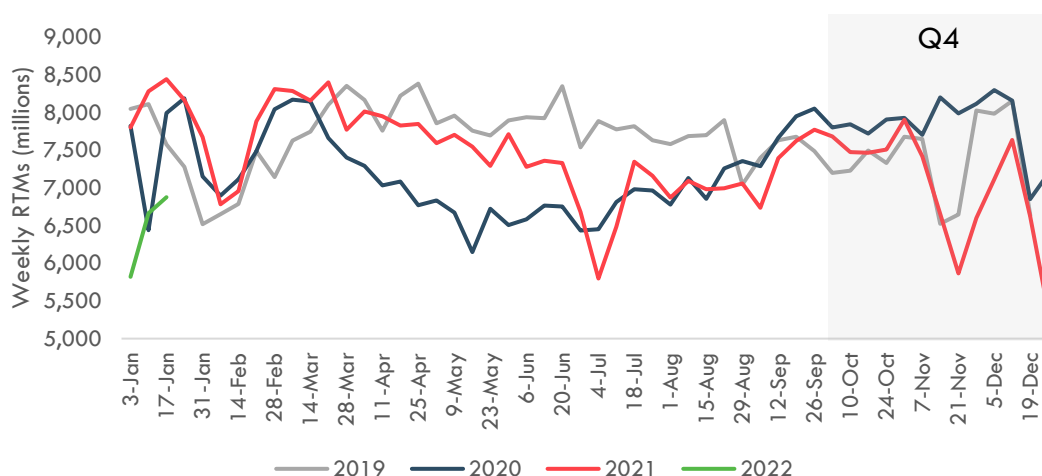
Class 1s started off 2021 strong. Q1-21 revenue ton-miles (RTMs) were 3% above 2020 and 6% above 2019 levels.

In Q2-21, RTMs were above 2020 levels in every week, however, Q2-20 was the period most significantly impacted by COVID-19. In 2021, weekly RTMs continuously fell throughout the second quarter, especially in the final week as the impacts of the wildfires out west began to take hold. Overall, in Q2-21, RTMs were 11% above 2020 levels but 6% below 2019 levels.

The wildfires caused RTMs to drop significantly for the weeks beginning June 27th, July 4th, and July 11th. Overall, Q3-21 RTMs were 2% below 2020 levels and 9% below 2019 levels.

In Q4-21, rail operations were significantly impacted by flooding in British Columbia. Q4-21 RTMs were 11% below 2020 levels and 5% below 2019 levels.

Canadian Class 1 Revenue Ton-miles



Source: [CN Key Weekly Metrics](#); [CP Weekly Key Metrics](#)

Note: The dates indicate the first day of the week (e.g., "4-Apr" corresponds to the week of April 4-10). Using the same methodology employed by both CN and CP, week 1 of 2021 (week starting January 3) is compared to week 2 of 2020 (week starting January 5) and week 2 of 2019 (week starting January 6).

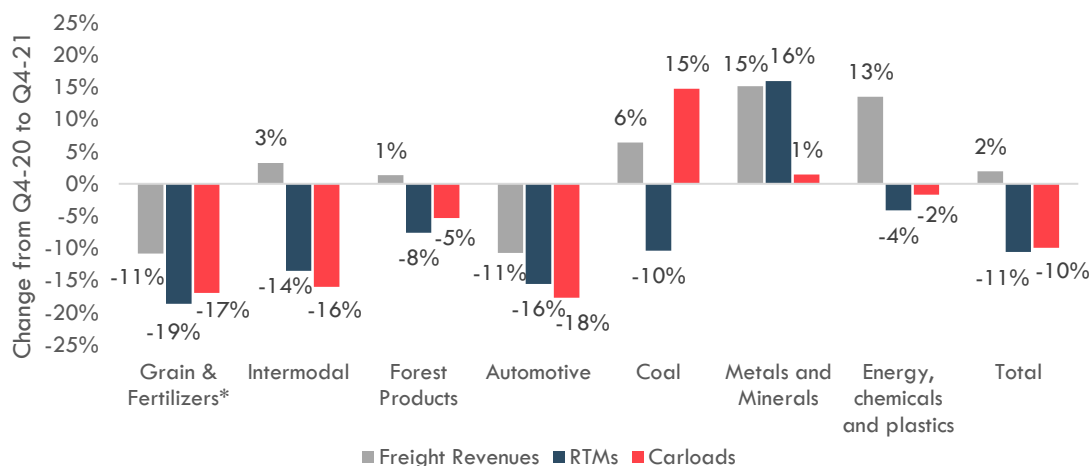
Revenues, Revenue Ton-miles, and Carloads

As shown in the figure and table below, in Q4-21, total Class 1 RTMs and carloads were down by 11% and 10%, respectively, while freight revenues were up by 2%. Performance varied by commodity. Movements of grain & fertilizers, intermodal, and automotive products decreased in the double digits compared to Q4-20.

Noticeable in Q4-21, is that freight revenues did not always move in the same direction as RTMs and carloads, and in many cases, freight revenues increased despite a reduction in traffic. Overall freight revenue per RTM increased by 14% compared to Q4-20. Despite this strong increase in Q4-21, since the onset of the pandemic, increases in rail freight rates have been in line with increases in consumer prices, and much lower than the significant increases in commodity and industrial prices (see [Freight Rates](#)).

Full year 2021 RTMs were nearly identical to 2020 RTMs, having increased by 0.1%, from 382,281 million to 382,824 million. Gains in metals & minerals and coal offset the reductions in grain & fertilizers.

Class 1 Freight Revenues, RTMs, and Carloads by Commodity, Q4-21 vs Q4-20



Source: [CN Quarterly Review](#); [CP Quarterly Earnings Release](#)

*Includes potash and sulphur

Q4: Canadian Class 1 RTMs (millions), by Commodity

	Q4-21	Q4-20	Change (%)	Change (#)
Grain & Fertilizers*	28,769	35,339	-19%	-6,570
Intermodal	20,225	23,384	-14%	-3,159
Forest Products	7,515	8,131	-8%	-616
Automotive	958	1,134	-16%	-176
Coal	8,502	9,487	-10%	-985
Metals and Minerals	9,459	8,159	16%	1,300
Energy, chemicals and plastics	17,096	17,829	-4%	-733
Total	92,524	103,463	-11%	-10,939

Year (Q1-Q4): Canadian Class 1 RTMs (millions), by Commodity

	2021	2020	Change (%)	Change (#)
Grain & Fertilizers*	118,248	126,950	-7%	-8,702
Intermodal	86,116	87,023	-1%	-907
Forest Products	31,666	31,093	2%	573
Automotive	4,160	3,918	6%	242
Coal	36,816	34,683	6%	2,133
Metals and Minerals	37,913	30,886	23%	7,027
Energy, chemicals and plastics	67,905	67,728	0%	177
Total	382,824	382,281	0%	543

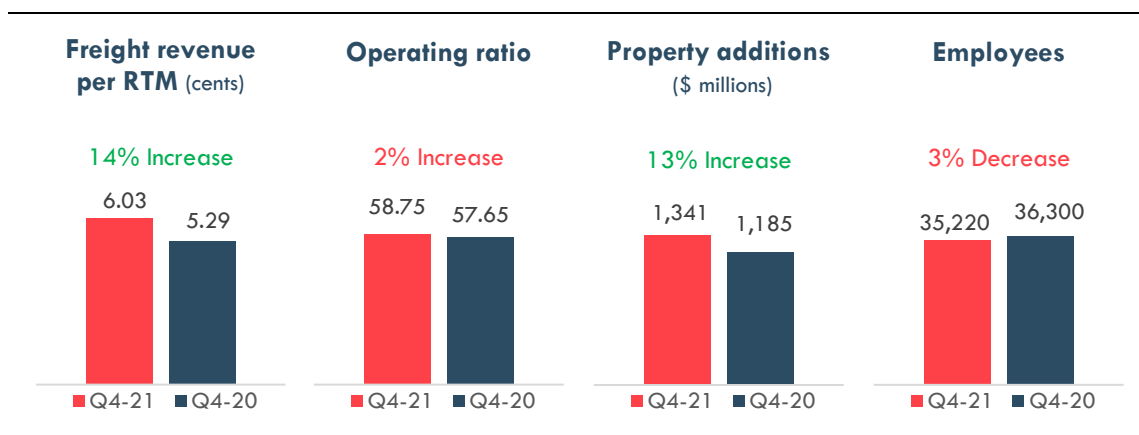
Source: [CN Quarterly Review](#); [CP Quarterly Earnings Release](#)

*Includes potash and sulphur.

Select Key Financial, Operating, and Safety Metrics

In Q4-21, freight revenue per RTM increased by 14%, led by a 19% increase in revenue per RTM for intermodal shipments, and 18% increase for shipments of energy, chemicals and plastics (not shown). Despite increases in freight revenues per RTM, the average operating ratio increased by 2%. The average Class 1 *adjusted* operating ratio only increased by 0.1% to 57.70.

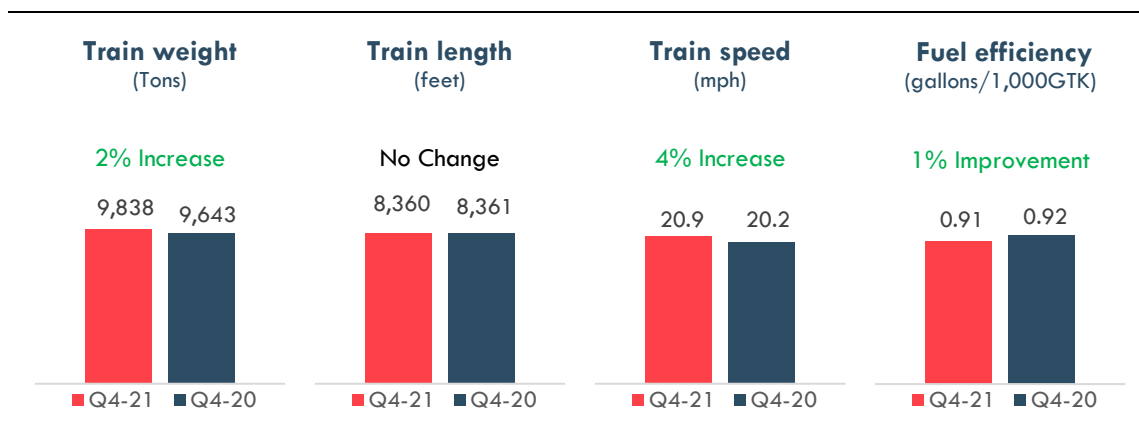
During the fourth quarter, Class 1s invested \$1,341 million dollars in their networks and employed over 35,000 workers.



Source: [CN Quarterly Review](#); [CP Quarterly Earnings Release](#)

Note: The operating ratio is calculated as the simple average of CN and CP.

Train-related performance metrics were very strong in the fourth quarter. Compared to Q4-20, average train weight increased by 2% and average train speeds increased by 4% to 20.9 miles per-hour, while fuel efficiency improved by 1% to 0.91 gallons per 1,000 gross ton-kilometres.



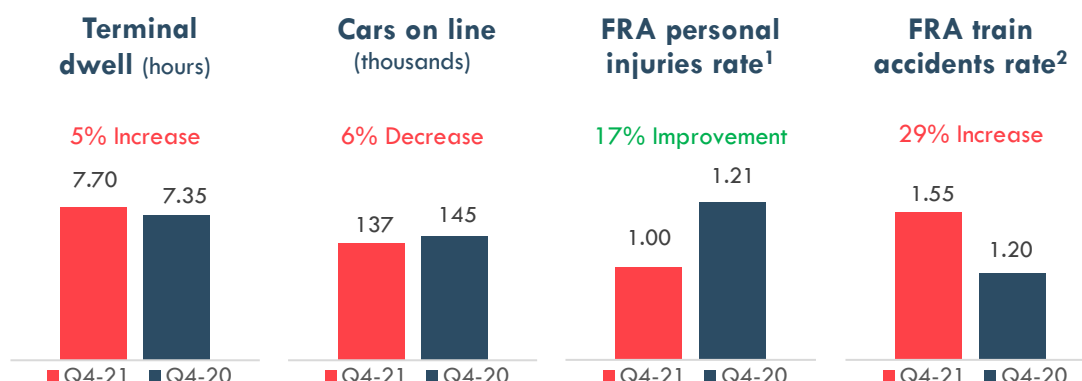
Source: [CN Quarterly Review](#); [CP Quarterly Earnings Release](#)

Note: All four metrics are calculated using the simple average of CN and CP.

From October through mid-November, Q4-21 terminal dwell times were similar to Q4-20. In the second half of the quarter, terminal dwell times increased due to impacts from the flooding in British Columbia and other supply chain challenges. In the week ending November 26, 2021, dwell times at major ports in British Columbia rose to over 70 hours, significantly impacting the overall quarterly results. Overall, terminal dwell times in Q4-21 averaged 7.70 hours – a 5% increase compared to Q4-20.

The average number of cars on line decreased by about 8,000 cars, or 6%, compared to the previous year. The decrease in cars was mostly due to the reduction in grain activity – there were 5,800 fewer covered hopper cars on line in Q4-21 compared to Q4-20.

Compared to Q4-20, the Canadian Class 1s' Federal Railroad Administration (FRA) personal injuries rate improved while the FRA train accidents rate increased. The FRA train accidents rate is based on a very low number of train accidents (averaging 15 accidents per quarter for CN and CP combined), and therefore large percentage changes across quarters is possible.



Source: [CN Quarterly Review](#); [CP Quarterly Earnings Release](#); [CN Key Weekly Metrics](#); [CP Weekly Key Metrics](#)

Note: Terminal dwell, FRA personal injuries rate, and FRA train accidents rate are calculated using the simple average of CN and CP.

¹ Injuries per 200,000 employee hours

² Accidents per million train-miles

Freight Industry Data

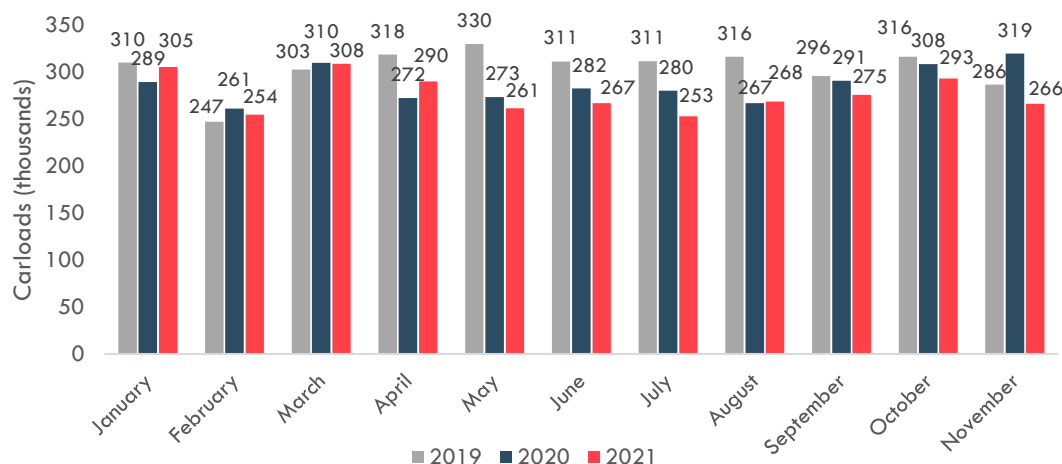
The freight industry data in this section of the report has some overlap with the Class 1 data reported above. However, this section includes data from all freight railways, including shortlines, and is specific to Canadian operations. The data from the various statistical agencies included in this section have a slightly longer lag time than the Class 1 data, and as a result, the data is not always available for all months of the most recent quarter. As such, the freight data is analyzed on either a YTD or monthly basis, rather than quarterly.

Carloads & Intermodal Units

Statistics Canada reports monthly carloadings for over 60 commodities, as well as intermodal units.

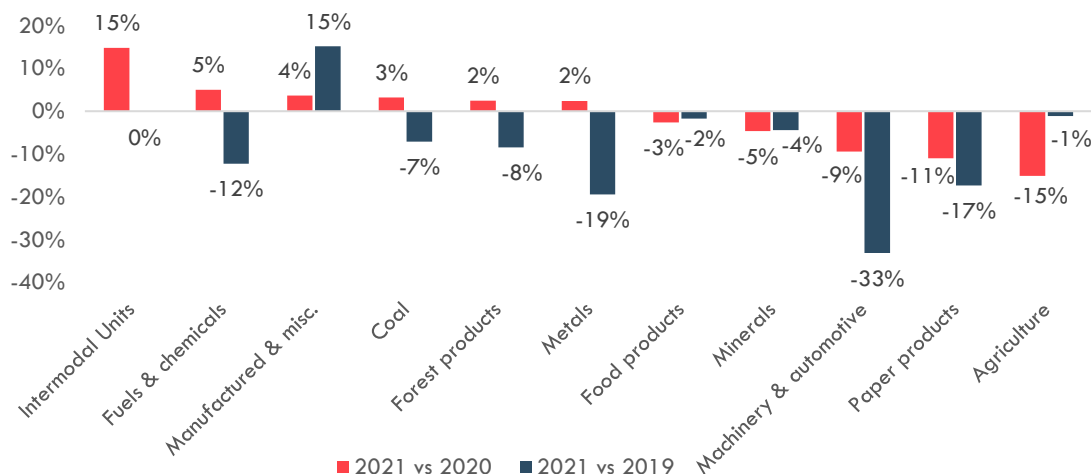
On a year-to-date basis (January-November), non-intermodal carloadings were 4% below 2020 levels, and 9% below 2019 levels. The COVID-19 pandemic has contributed to significant volatility, and as a result, 2021 YTD carloadings by commodity vary significantly between 2019, 2020 and 2021.

Canadian Railways, Carloads



Source: Statistics Canada, [Monthly Railway Carloadings Survey](#)

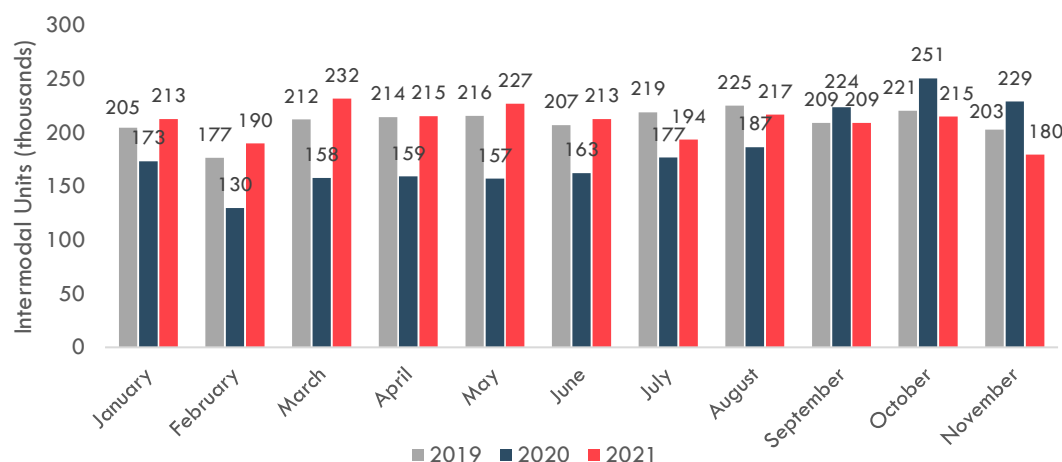
Canadian Railways, Carloads by Commodity & Intermodal Units (Jan-Nov)



Source: Statistics Canada, [Monthly Railway Carloadings Survey](#)

Since the onset of the pandemic, a variety of factors have impacted the consistent flow of intermodal shipments, including but not limited to global container issues, supply chain challenges, weather, and bottlenecks at ports. On a YTD basis, total 2021 intermodal traffic loaded was equal to 2019 levels and 15% above 2020 levels (intermodal shipments were significantly affected during the first 8 months of 2020). However, since September, monthly intermodal shipments have been below 2020 levels.

Canadian Railways, Intermodal Units



Source: Statistics Canada, [Monthly Railway Carloadings Survey](#)

From January through August, intermodal shipments were up 32% in the West and 28% in the East. However, since then, intermodal shipments have fallen significantly in Western Canada, and to a lesser extent in Eastern Canada. Compared to the same month in 2020, intermodal shipments in the West were down 11% in September, 17% in October and 33% in November; intermodal shipments in the East were up 1% in September, down 10% in October and down 4% in November. As a result, YTD January-November intermodal shipments were up 17% (West) and 13% (East) compared to 2020.

YTD (Jan-Nov): CDN Carloads by Region

	2021 vs 2020	2021 vs 2019
Eastern Division	-5%	-14%
Western Division	-3%	-5%
Total	-4%	-9%

YTD (Jan-Nov): CDN Intermodal Units by Region

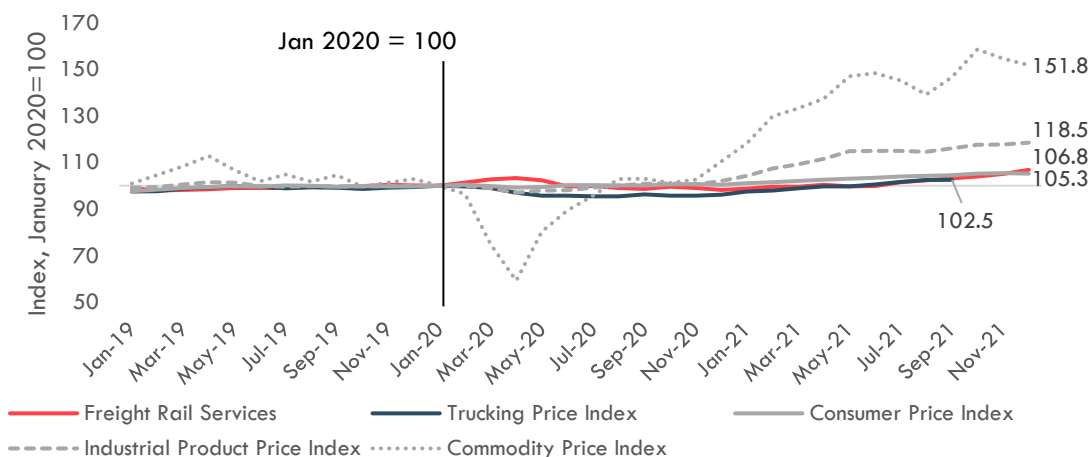
	2021 vs 2020	2021 vs 2019
Eastern Division	17%	1%
Western Division	13%	-1%
Total	15%	0%

Source: Statistics Canada, [Monthly Railway Carloadings Survey](#)

Freight Rates

Until June 2021, rail freight rates had remained relatively flat throughout the pandemic. Since then, they have climbed by about 7%. However, the increase in rail freight rates has been relatively minor compared to the price inflation of the products that are shipped by rail. Since January 2020, industrial prices and commodity prices have increased by 19% and 52%, respectively.

Price Index of Rail Services vs Other Price Indices



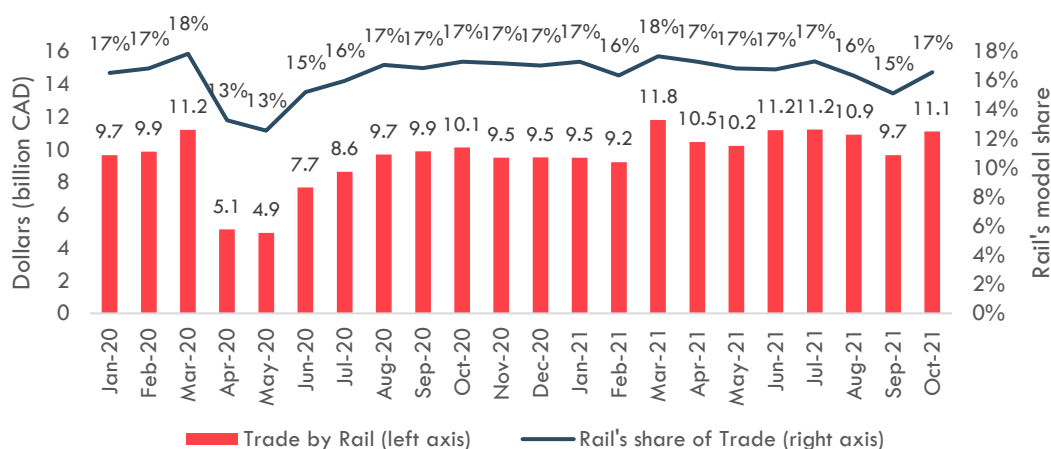
Source: Statistics Canada, [Freight Rail Services Price Index](#), [Industrial Product Price Index](#), [For-hire Motor Carrier Freight Services Price Index](#), and [Consumer Price Index](#). Bank of Canada, [Commodity Price Index](#)

Exports

Earlier in the [report](#), it was shown that Canadian trade decreased by over 30% at the height of the pandemic. The impact on rail was even greater, as monthly exports were cut in half to around \$5 billion, and rail's share of cross-border trade dropped from around 17% to 13%.¹

However, by August 2020, rail's share of cross-border trade had risen back to 17%; and in recent months, the value of monthly exports has been similar to pre-pandemic levels at approximately \$11 billion. Looking ahead to 2022, Canadian banks forecast a 6.1% increase in Canadian exports.²

Rail Merchandise Trade with the U.S.



Source: Transport Canada, [Transportation activity indicators](#)

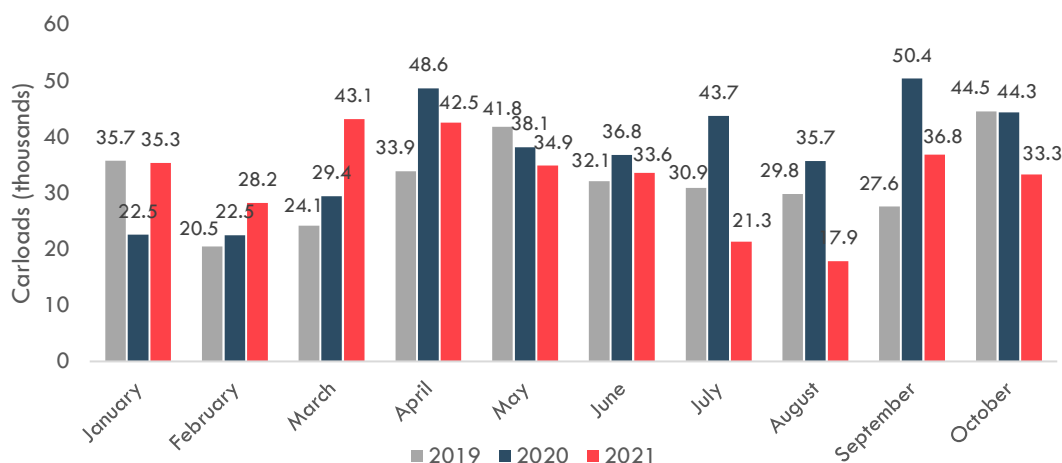
¹ The trade figures presented here are for trade with the U.S., by value, and is for the mode of transport used to cross the border. Using Transport Canada annual data, the Railway Association of Canada estimates that over 50% of total export volumes are transported by rail, either through transborder rail transportation or through rail-marine exports.

² 6.1% was obtained by averaging the January 2022 forecasts of Scotiabank, RBC, and BMO.

In every month since April 2021, the number of covered hopper cars unloaded at western ports has been lower than in 2020. On a YTD basis, numbers are down 12% compared to 2020, but are up 2% relative to 2019.

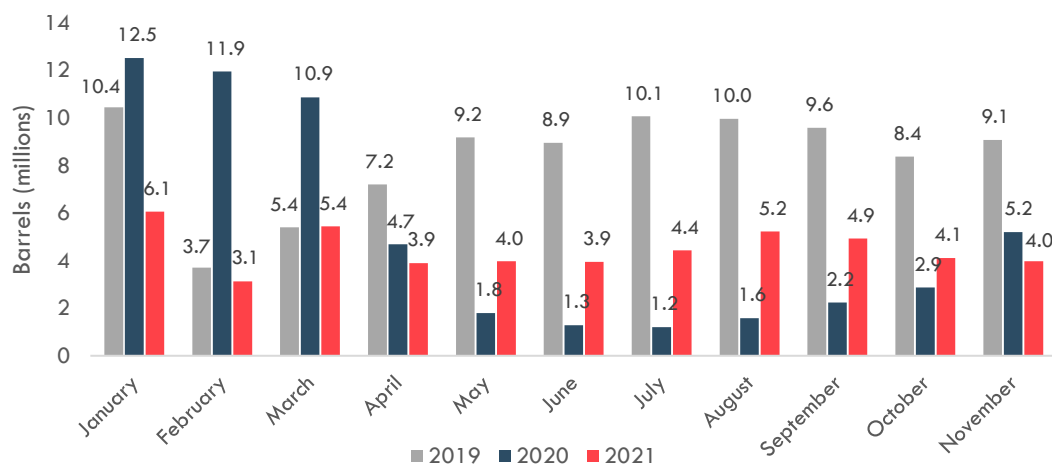
In May through October 2021, monthly exports of crude oil by rail were greater than they were in 2020. However, due to a strong January-March in 2020, 2021 YTD crude oil exports are down 13% compared to 2020. Furthermore, 2021 YTD crude oil exports are down 47% compared to 2019.

Covered Hopper Cars Unloaded at Western Ports, YTD



Source: Transport Canada, [Transportation system utilization and performance](#)

Canadian Crude Oil Exports by Rail, YTD

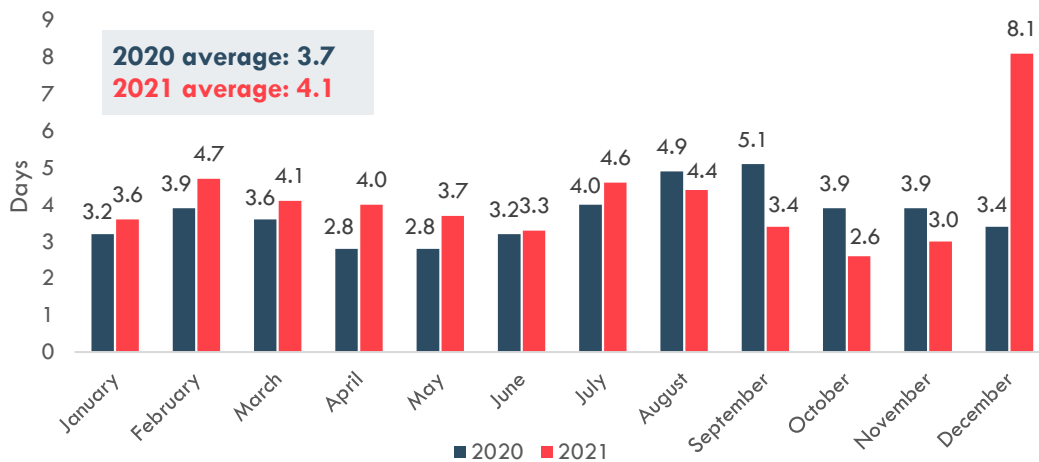


Source: Canada Energy Regulator, [Canadian Crude Oil Exports by Rail](#)

In the first seven months of 2021, dwell times at the Port of Vancouver were a bit longer than they were in 2020, followed by shorter dwell times from August through November 2021. Across the first 11 months of the year, the average dwell times were comparable, until they skyrocketed in December 2021 to over 8 days.

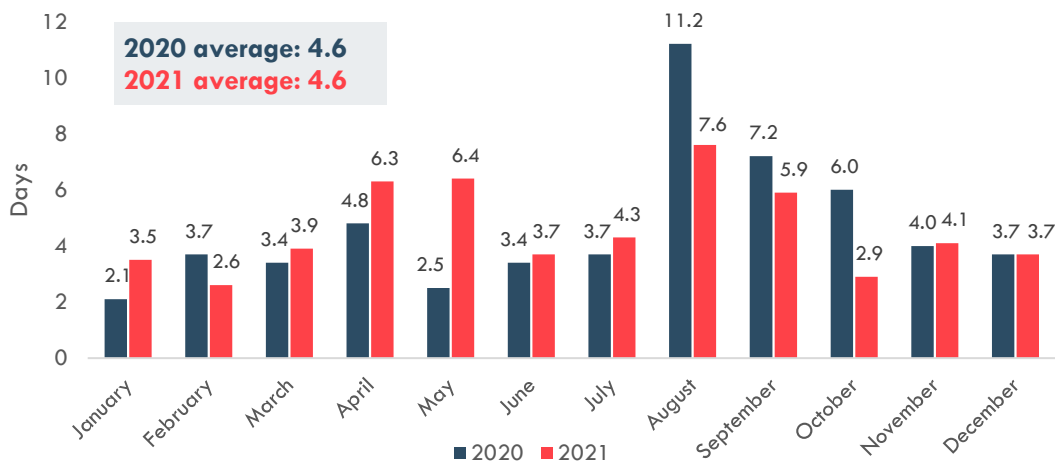
In both 2020 and 2021, the average dwell times at the Port of Montreal were 4.6 days. These times exceed the averages in both 2018 (3.6 days) and 2019 (3.1 days).

Vancouver - Gateway terminal rail dwell performance by month



Source: Port of Vancouver, <https://www.portvancouver.com/port-dashboard/supply-chain-performance/>

Montreal - Average terminal dwell of containers (import-rail)



Source: Port of Montreal, <https://www.port-montreal.com/en/goods/real-time/performance-report>

Passenger Rail Data

There is less monthly and quarterly data available for the passenger rail operations compared to freight rail operations, and in some cases, there may be a longer lag period.

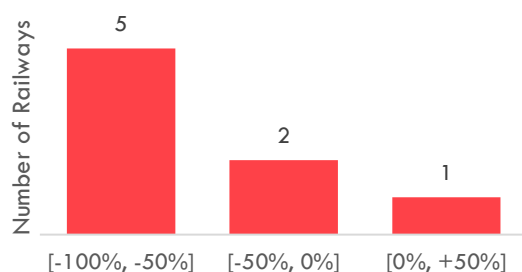
RAC Member Ridership

Passenger rail ridership has been significantly impacted by the COVID-19 pandemic and evolving restrictions. This section looks at ridership data for eight RAC members, representing intercommunity, commuter, and tourist rail operators.³

In Q4-21, seven out of eight members experienced lower ridership levels than they did in the same pre-pandemic period (Q4-19). Median ridership was down 58%.

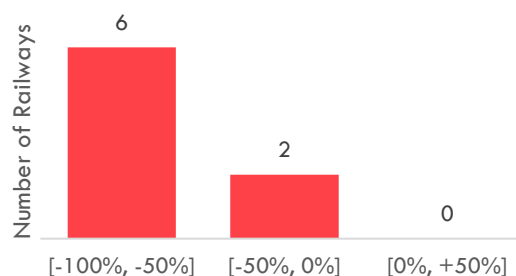
Comparing the full year of 2021 against 2019, all eight members experienced lower ridership levels in 2021. Median ridership was down 73%.

RAC Members, Ridership, Q4



Change in Ridership, Q4-21 vs Q4-19

RAC Members, Ridership, Annual



Change in Ridership, 2021 vs 2019

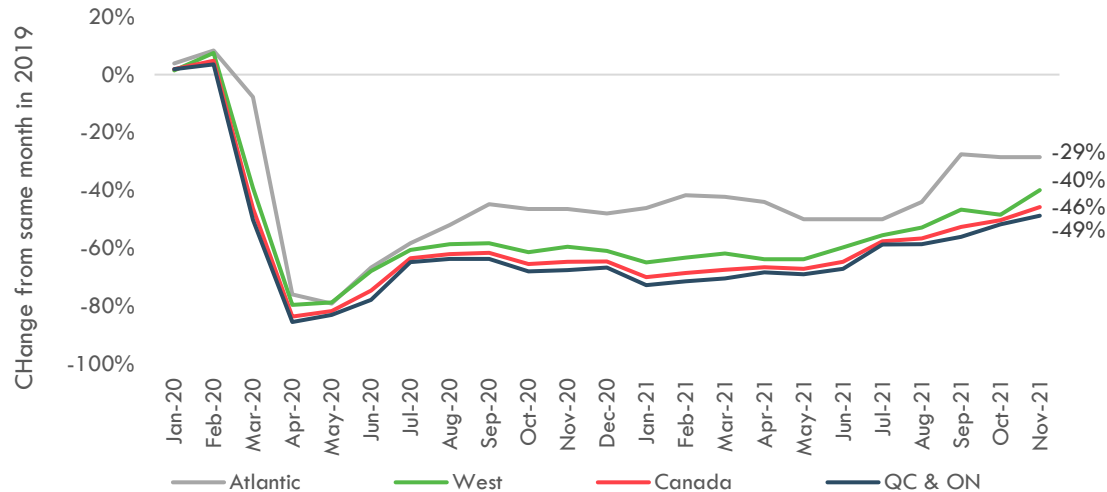
³ Quarterly ridership data was available for eight of RAC's members
(<https://www.railcan.ca/membership/member-railways/>).

Urban Transportation

From July 2020 through June 2021, urban transit ridership, which includes commuter rail, hovered around 65% below 2019 levels. Starting in July 2021, ridership began recover, and as of November, had risen to 46% below its 2019 level. This is the first time since the onset of the pandemic that urban transit ridership has recovered to over half of its pre-pandemic level.

Ridership impacts have been most severe in Quebec and Ontario throughout the duration of the pandemic.

Urban Transit Systems Ridership by Region



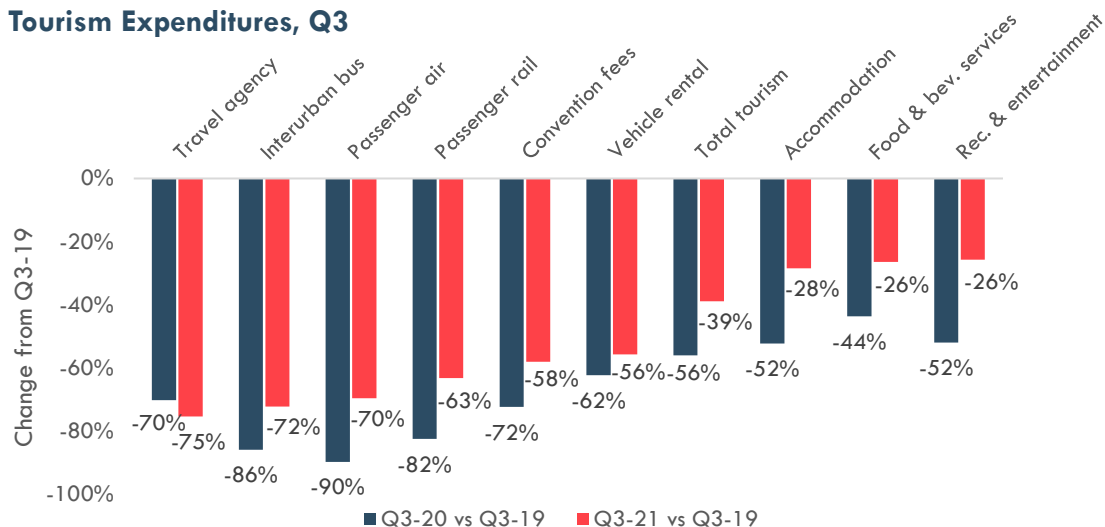
Source: Statistics Canada, [Monthly Passenger Bus and Urban Transit Survey](#)

Tourism Rail

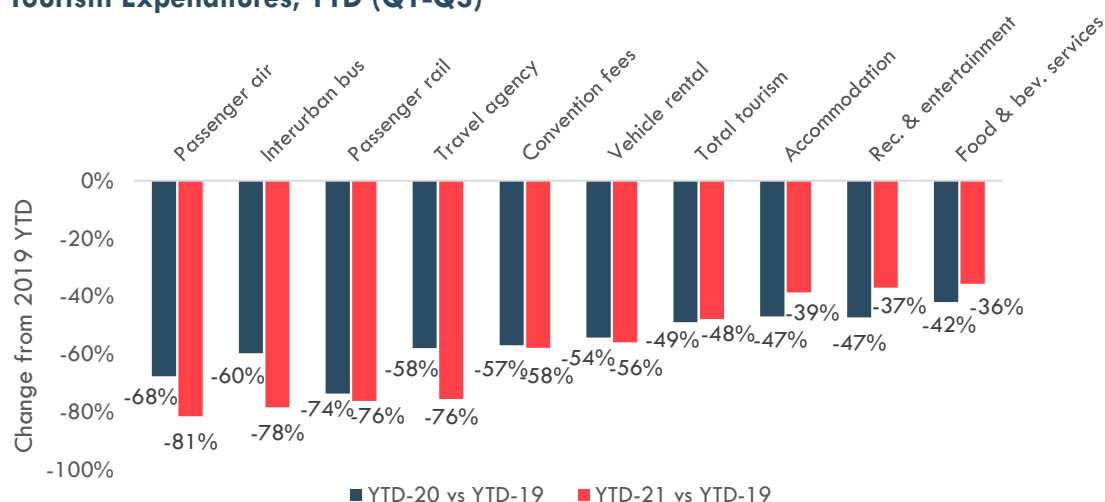
There is a considerable lag in data on tourism expenditures. Compared to Q3-19, total tourism expenditures in Q3-21 were down 39%, while tourism expenditures on passenger rail were down 63%. Data for the first three quarters of 2021 show that YTD total tourism expenditures were down 48% compared to 2019, while YTD tourism expenditures on passenger rail were down 76%.

As shown in the figures below, tourism rail has been among the most adversely impacted tourism industries.

Tourism Expenditures, Q3



Tourism Expenditures, YTD (Q1-Q3)



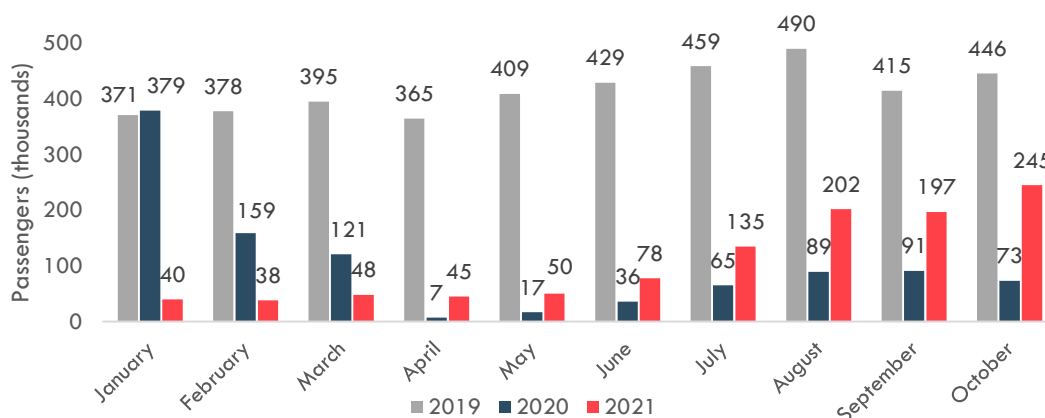
Source: Statistics Canada, [National Tourism Indicators](#)

Intercity Passenger Rail

Monthly ridership data is available for both VIA rail and Amtrak. Intercity passenger rail ridership in recent months has been higher than in 2020, however, ridership is still well-below pre-pandemic (2019) levels.

On a YTD basis, VIA rail ridership was 4% above 2020, but 74% below 2019.

VIA Rail Ridership, Monthly

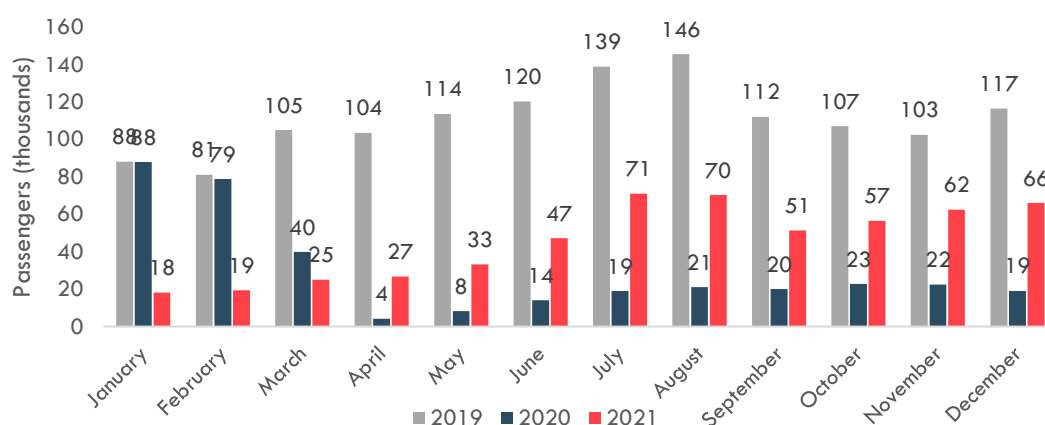


Source: Transport Canada, [Transportation activity indicators](#)

Amtrak has many routes throughout the U.S., and three routes that include a Canadian segment. Ridership on these three routes does not imply that passengers crossed the border, as they may have travelled a particular segment on either side of the border.⁴

Full 2021 data is available for Amtrak. Ridership on the routes with segments in Canada were adversely impacted by the pandemic; however, considerable gains were made in 2021. 2021 annual ridership was 53% above 2020, but 59% below 2019.

Amtrak Ridership on Routes with Segments in Canada, Monthly



Source: Amtrak, [Monthly Performance Reports](#)

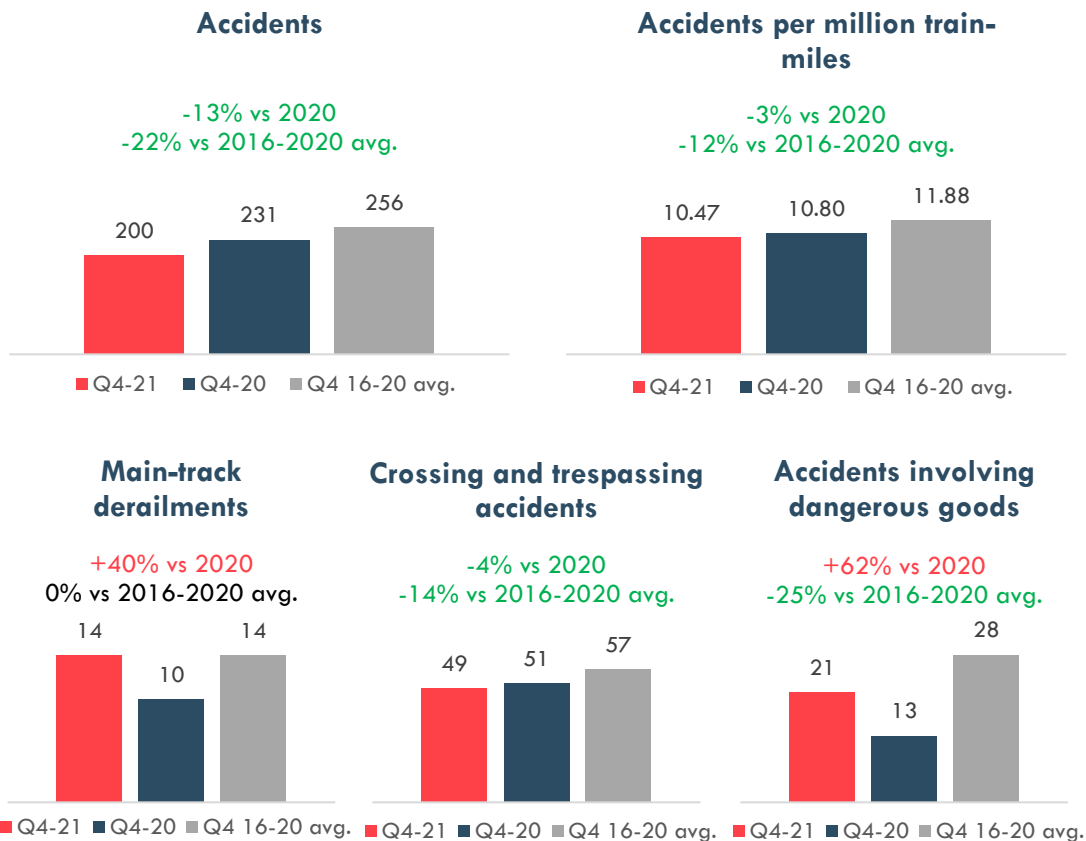
Note: Includes three routes (Maple Leaf; Cascades; Adirondack).

⁴ For example, the Maple Leaf route extends from New York City to Toronto; Cascades extends from Eugene Oregon to Vancouver; and Adirondack extends from New York City to Montreal.

Rail Safety Data

The Transportation Safety Board provides railway occurrence statistics of federally regulated railways in Canada.

In Q4-21, rail safety performance was strong. The total number of accidents and the accident rate (accidents per million train-miles) were lower than both Q4-20 and the Q4 2016-2020 average.⁵ The number of accidents in key accident categories were equal to or below the Q4 2016-2020 average, including main-track derailments (0% change), crossing and trespassing accidents (14% improvement) and accidents involving dangerous goods (25% improvement).



Source: Transportation Safety Board, [Monthly rail transportation occurrence statistics](#)

⁵ In the Transportation Safety Board's monthly statistical reports, data is compared to the previous year as well as the previous 5-year average.



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