



The Conference Board  
of Canada



SASKATCHEWAN  
CHAMBER *of* COMMERCE

# The Impact of Rail Access on Saskatchewan's Export Potential

Final Report

# Executive Summary

Saskatchewan's economy is strong and growing. In the last seven out of 10 years, Saskatchewan's growth has exceeded the national average. The Conference Board of Canada forecasts that Saskatchewan's long-term growth will also be greater than Canada overall between 2014 and 2035. The province's growth has depended on international exports. In 2013, Saskatchewan had just over \$32 billion in exports, which was the equivalent to 40 per cent of its nominal GDP. At \$29,000, Saskatchewan's exports per capita in that year were highest in Canada.

At the same time, getting exports to market is a greater challenge for Canada than many countries and within Canada, a greater challenge for Saskatchewan than for other provinces. This is a function of the fact that ocean transport is the cheapest form of bulk freight transportation, but Saskatchewan is thousands of kilometres from Canada's major international ports.

## Exports and Rail Transportation

Saskatchewan feeds and fuels many parts of the world through its exports of agri-food products and fertilizer inputs, along with crude oil and uranium. Crude oil remains the province's largest export by value, followed by potash and a variety of agricultural exports.

Table ES1. Export Values and Volumes of Saskatchewan's Ten Largest International Commodity Exports in 2013.

Commodity	Value (\$CAD millions)	Volumes (thousand tonnes)	Value per Tonne (\$CAD)
Crude oil	11,854	20,037	591.61
Potash (KCl)	5,580	15,342	363.71
Wheat	3,359	9,701	346.25
Canola seed	2,051	3,303	620.95
Canola oil	1,425	1,156	1,232.70
Lentils	1,149	1,767	650.25
Peas	1,110	2,576	430.90
Canola seed oil-cake and meal	686	1,768	388.01
Uranium	606	5.6	108,214.29
Other cereals: oats, barley; canary seeds	502	1,484	338.27



Traditionally, crude oil exports have found their way to markets in the United States (US) via pipeline while uranium exports are often trucked to port due in part to the high per-tonne value of uranium. The rest of the major exports, for the most part, rely on rail either to directly access the US market or to make their way to ports. As pipeline access becomes increasingly constrained, rail has also started to play a larger role in carrying crude oil. Using data from the 2012 Rail Commodity Origin and Destination Statistics survey (RCOD) and calculations of the approximate value of these rail shipments, it is estimated that over 30 million tonnes and over \$14 billion of the province's exports rely on rail for at least part of their journey to their final destination. This is close to half of the province's exports by value.

Table ES2. Saskatchewan's Largest Rail Commodities, Quantity and Estimated Value, 2012.

Rail Commodity	Harmonized System Commodity	Quantity transported by rail (thousands of tonnes)	Total estimated value (\$CAD millions)
<b>Potash</b>	Potash	12,548	5,399
<b>Wheat</b>	Wheat and durum	7,934	2,800
<b>Canola</b>	Canola seed	2,777	1,751
<b>Canola oil</b>	Crude and refined canola oil	1,297	1,631
<b>Fresh, chilled or dried vegetables</b>	Lentils and peas	1,804	923
<b>Fuel oil and crude petroleum</b>	Crude oil	1,439	857
<b>Other cereals</b>	Barley, rye, oats, corn, millet, canary seed, other cereals	1,833	562
<b>Animal feed</b>	Canola meal	836	292
<b>Other refined petroleum and coal products</b>	Bitumen, coal, peat, coke	87	88
<b>Total</b>		30,556	14,303

## Rail Transportation Challenges

Nationwide, commodity shippers in particular have voiced concerns that the availability of rail transportation is not meeting shipper demand. For example, grain shippers have stated that they are frequently left with full grain elevators, and are unable to accept additional grain from producers as trains are not supplied in a timely fashion, or in sufficient quantity, etc. 2013-14 was a record year for crop production, and large quantities of harvested grain were unable to get to market because of the high demand for rail freight transportation and poor weather conditions. The railways simply did not have sufficient capacity to meet the significant spike in grain supply. As a result, much of the 2013 harvest had to be stored for prolonged periods of time on the farms as grain elevators were at maximum capacity, depriving farmers of anticipated income and reducing the value of the harvested crops. The grain industry bore the brunt of these costs, but it was by no means exclusive to them; potash shipment were also well behind where they could have been, triggering a decrease in production. Despite the challenges, railways collectively did deliver 22 per cent more grain from Western Canada in the 2013-14 crop year than they did in the previous year.

## Plan for Growth

The Province of Saskatchewan has an ambitious Growth Plan that targets \$59 billion in exports by 2020 – a doubling of 2011 export values. In order to meet this target, rail transportation will certainly have to play a key role. The extent to which rail transportation demand would increase depends on the mix of commodities that make up that growth, as well as how much price (rather than volume) increases contribute to export growth. Using a plausible set of assumptions, which addresses 71 per cent of the \$59 billion target, it was possible to estimate the increase in railway originating tonnes for three broad categories of exports: potash, petroleum products and agri-food products (which includes canola oil and meal in addition to crop production). Overall, the minimum growth in railway originating tonnes from Saskatchewan implied by the Plan for Growth is over 20 million tonnes.

Table ES3. 2020 Projected Increase in Railway Originating Tonnes from Saskatchewan, Key Commodities (thousands of tonnes)

Commodity	2012 Actual	2020 Projection	Net Increase
Potash	12,548	21,575	9,027
Petroleum products	1,526	7,720	6,194
Agri-food products	16,481	21,340	4,859
Summed across commodities	30,555	50,635	20,080

## Rail Freight and Logistics Costs

As noted above, the value of many of Saskatchewan's key exports range from roughly \$300 to \$700 per tonne (the main exception being uranium). But the value of a given commodity depends on where it is. For example, the value of canola at the farm gate is different than it is at the port of export and different again from the value at the port of import. Rail transportation and logistics costs are the key reasons for these price differences.

For many of Saskatchewan's key exports, logistics costs and particularly rail transportation account for significant portions of prices that buyers eventually pay. Rail freight costs alone can account for up to 20 per cent of prices and when including other logistics costs this can increase to 30 per cent or more. Reducing those costs then has the potential to lower prices to buyers, expand the global reach of Saskatchewan's exports, or return a higher portion of the export price to exporters.

## Rail and Supply Chain Investments in Capacity

After what was a period of gradual decline, there have been significant ongoing and planned investments in key rail corridors, rolling stock, and inland and port storage facilities over the past several years. Perhaps one notable exception is investment in the hopper car fleet. The current fleet is aging and the replacement of the fleet would help to increase grain hauling capacity, since newer cars could increase the carrying capacity of grain unit trains by up to 25 per cent. For at least some international players who compete against Canadian and especially Saskatchewan-based exporters, fewer of these investments – and some not at all – are required. This is a function of the natural geographic advantage that many of these competitors have.

## The Economic Impact of Rail Service on Saskatchewan's Economy

As previously noted, the implications of the province's Plan for Growth for the rail system is, at minimum, an additional 20 million tonnes of goods originating from the province by 2020 (relative to 2012). This represents almost a 50 per cent increase in originating tonnage. In order to estimate the potential economic impact resulting from a limitation of railway or rail-based supply chain infrastructure, two alternate scenarios were created where the rail-based supply chain was only able to handle up to 80 or 90 per cent (20 or 10 per cent of demand unmet) of the projected minimum growth in railway originating tonnes for 2020. The negative provincial economic impact (including direct, indirect and induced effects) in these scenarios is estimated to be approximately \$3.6 billion and \$1.8 billion, respectively.

Table ES4. Estimated Provincial Economic Impact of Rail Export Commodities from Saskatchewan, 2020 (millions \$nominal)

Rail Commodity	NAICS Industries	Projected rail commodity export value	Projected GDP impact of rail exports	GDP Impact of Unmet Demand	
				10 per cent unmet	20 per cent unmet
<b>Petroleum products</b>	Non-conventional oil extraction; petroleum refineries	5,406	2,146	-215	-430
<b>Potash</b>	Potash mining	9,238	8,472	-847	-1,694
<b>Agri-food products</b>	Crop production; grain and oilseed milling; animal food manufacturing	11,180	7,438	-744	-1,487
<b>Total</b>		25,825	18,055	-1,806	-3,611


The 80 per cent scenario is considered to be particularly extreme, as it implies that only half of the projected growth in demand for originating tonnage is met by 2020. The 90 per cent scenario could also be considered unlikely; rather than strictly eliminating tonnage it is more probable that unreliable service issues would eat into the profitability of shippers by increasing their cost base or by reducing the price that they receive for their products. This lower profitability scenario would still negatively impact the GDP, the degree to which would be difficult to calculate but would likely be lower than the forecasted scenarios.

## Conclusion

Potential recommendations for improving the efficiency of Saskatchewan's rail-based supply chains and ensuring that they will not be a constraint to export growth in the future include:

- *Investigating the full impacts of the Maximum Revenue Entitlement (MRE).* The MRE is a limit on the average revenue per tonne that railways can earn on the shipment of regulated grains from Western Canada to the Port of Thunder Bay or to ports in British Columbia. As 15 years have passed since the MRE was implemented, a full and public review is warranted.





- *Reducing the cost of shipping by rail to and from the province.* Railways pay nearly \$40 million in fuel taxes annually to the Saskatchewan government as a result of a particularly high provincial fuel tax per litre (15 cents per litre). Given the dependence on railways to get products to market, it makes sense to at least bring fuel taxes in line with other provinces.

- *Encouraging greater and timelier communication across the logistics supply chain.* Better and timelier sharing of information can help shippers and railways prepare for disruptions. For example, faster real-time information from the railways to shippers when they become aware that delays will occur will help shippers avoid labour overtime costs.

- *Increasing coordination with governments and infrastructure providers outside of the province.* Saskatchewan and its economy has as direct an interest in investments and efficiencies at Port Metro Vancouver, Prince Rupert and Thunder Bay as it does in investments in freight infrastructure within the province. As a result, the Government of Saskatchewan has as much interest in being involved in supporting those investments either directly or indirectly.

- *Increasing supply chain options and redundancy.* For Saskatchewan – a province that is more landlocked than any other – any increased redundancy in terms of routing options to export markets is valuable. Whether this means helping to fund ice-breaking capacity on the Great Lakes and St. Lawrence Seaway or more indirect methods of enabling redundancy, it is a factor that should be considered if export growth continues to be a provincial priority.

- *Considering the full effects of legislative solutions while focussing efforts on long-term rather than short-term solutions.* Policies such as the Order-in-Council, which specified the minimum amount of grain to be moved may have unintended consequences. The possibility of such unintended consequences undermining supply chain efficiency should be

considered and monitored.

- *Determining the current capacity and the “right size” of on-farm storage.* The extent of on farm grain storage is currently unknown, but the need for storage was painfully evident during the 2013-14 crop year. Policymakers should investigate the barriers, financial or otherwise, to investing in more on farm storage in order to determine the value in some solutions.

- *Determining the Impact of Pipeline Expansion Opportunities.* The growing role played by rail in transporting crude oil is largely a result of current pipeline access becoming increasingly constrained. Governments need to make a concentrated effort to work through the political intricacies that have bottlenecked pipeline expansions and determine the impact, if any, on rail service for other commodities.

- *Examining Alternative Hopper Car Purchasing Arrangements.* The grain hopper car fleet in Canada is aging and in need of replacement. Newer cars are both shorter and lighter and as a result contribute to an increase in the carrying capacity of approximately 25 per cent per train. The federal and provincial governments should identify and remove the barriers to new hopper car purchasing, as it relates to potential ownership by railways, shippers, or third-parties.