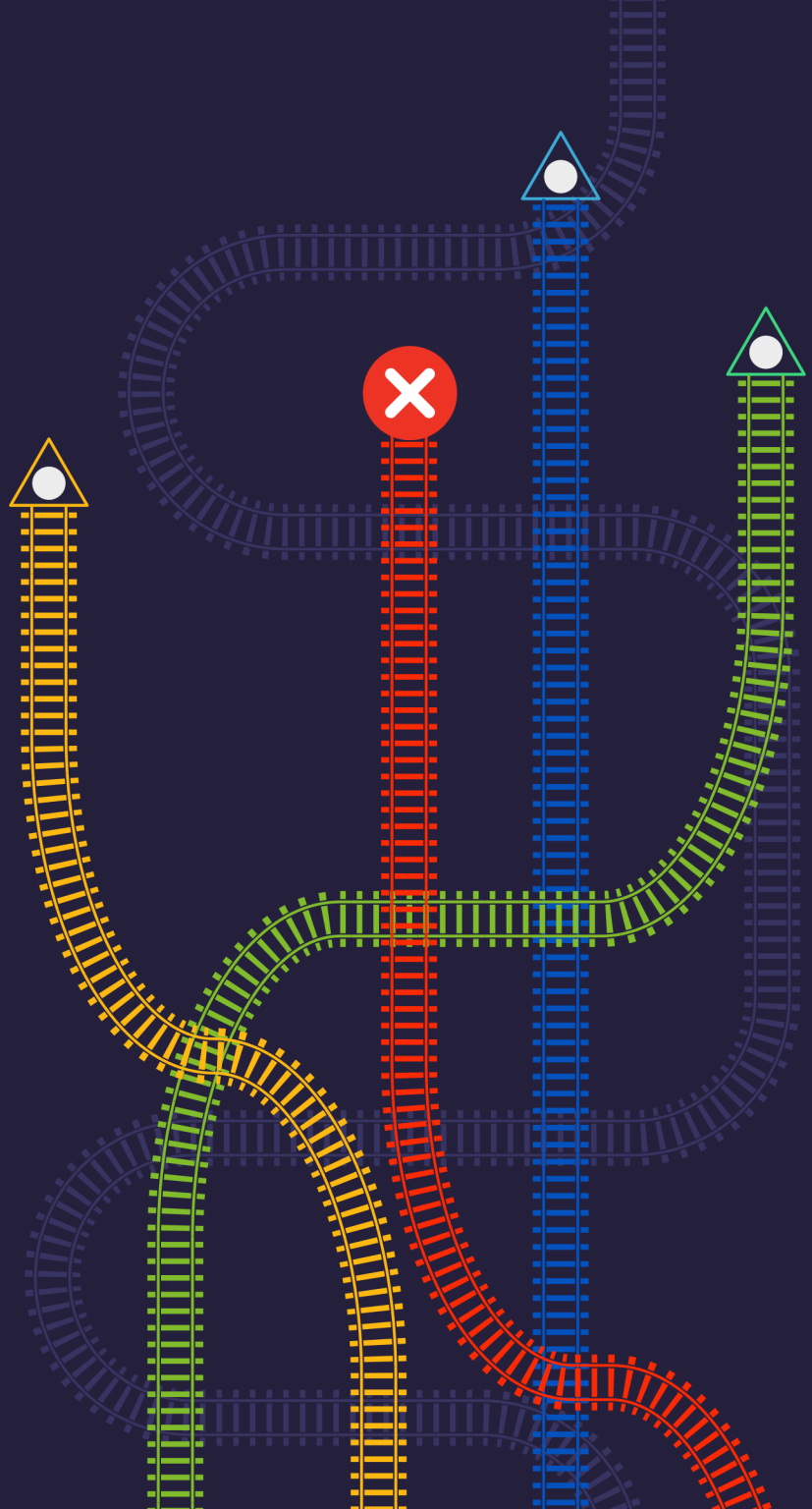


RailState

Facing a National Railway Strike:

How Rail Customers Can Minimize Losses From Major Service Disruptions

Executive Summary

With Canada on the brink of a strike of both major railways, rail customers face a complete shutdown of rail service and the potential loss of tens of millions in revenue.

This report provides a unique view into the structure of rail disruptions and details what rail customers can expect from a strike and recovery. As the only source of real-time data on rail network performance, RailState provides the needed insights to help shippers identify opportunities and make informed decisions to mitigate the risk from an impending strike and other rail service disruptions.

Key Points:

- **Imminent Threat**: A strike or lockout of both CN and CPKC could occur as early as May 21, 2024.
- **Economic Impact**: A national railway strike would halt the movement of C$1 billion worth of goods each day.
  - For bulk shippers, a lost trainload could be C$5million to C$10million (or more).
  - For manifest shippers, the lost revenue per carload could be C$10,000 to C$100,000.
- **Past Disruptions**: Historical trends following rail system disruptions show no significant capacity expansion post-disruption, emphasizing the lack of a "make-up" period for missed shipments.
  - Labor disputes are not the only source of rail disruptions. Significant interruptions occur many times per year, often from environmental events, including extreme cold (January 2024), wildfires (throughout the late summer and fall), and flooding events.
- **The State of the Canadian Rail Network**: Current and historical data on train volumes over major Canadian rail routes
  - Identifying areas of potential capacity
- **Risk Mitigation Planning**: A step-by-step approach to minimize losses from the impending strike and other types of rail disruptions.
  - Using insights on the state of the rail network, shippers can evaluate various mitigation strategies including:
    - ***Shipping Early***: Accelerate production and secure available rail capacity to send shipments before a strike occurs.
    - ***Alternative Routing***: Utilize strategic investments to explore different railways, ports, terminals, and temporary storage facilities.
    - ***Shift to Trucking***: Accurately timing modal decisions with real-time intelligence
  - Real-world applications of these strategies relying on RailState data to salvage millions in revenue

Next Steps:

- Engage with RailState for access to the only source of real-time insights on all train movements across the Canadian rail network, evaluate current and recent volumes on your most used routes and work with RailState's team to identify potential excess capacity

INTRODUCTION

A National Railway Strike Could Start as Soon as May 21

Canada faces the potential for a national shutdown of freight rail service in the coming months. Canadian National (CN) and Canadian Pacific Kansas City (CPKC) are currently in stalled labor negotiations with Teamsters Canada Rail Conference over safety and rest policies. The Teamsters represent approximately 6,000 conductors, yardworkers, and engineers across CN's network and roughly 3,200 at CPKC.

CN and CPKC both filed **Notices of Dispute on February 16, 2024**. A Notice of Dispute officially starts the clock for when failed labor negotiations could result in a strike or lockout.

On March 1, the government assigned a Federal Conciliation Officer, which started the 60-day clock on Conciliation. If this fails, the union and railroads enter a 21-day cooling off period.

Following the cooling off period, the union can initiate a work stoppage with 72-hours' notice. A national work stoppage at the Canadian railways could start **as early as May 21, 2024**.

If the parties are unable to come to an agreement and the government does not quickly intervene, freight rail service across Canada would come to a standstill. With an estimated C$380 billion in goods moving on Canadian railways each year, a shutdown could mean a stop on **C$1 billion in goods per day**.

The goods that would have been moved during a strike don't all get moved later, despite what many think about rail service.

After a disruption there is little to no "make up."

Notice of Dispute	**15 days** →	**Conciliation Officer Assigned**	**60 days** →	**Cooling Off Period**	**21 days** →	**Right to Strike/Lockout**
February 16, 2024		March 1, 2024		*April 30, 2024 (earliest)*		***May 21, 2024 (earliest)***
	Government must assign a conciliation officer within 15 days.		Parties engage in a conciliation process for 60 days. The parties can mutually agree to an extension.		A party must provide 72 hours' notice to the other part and the Minister of Labour to initiate a strike or lockout.	

No Increased Capacity After a Shutdown

After a complete shutdown or even more minor disruption, rail customers cannot rely on the railroads to expand capacity to make up for shipments that were missed during a shutdown. **There is no extra service coming in to save the day.**

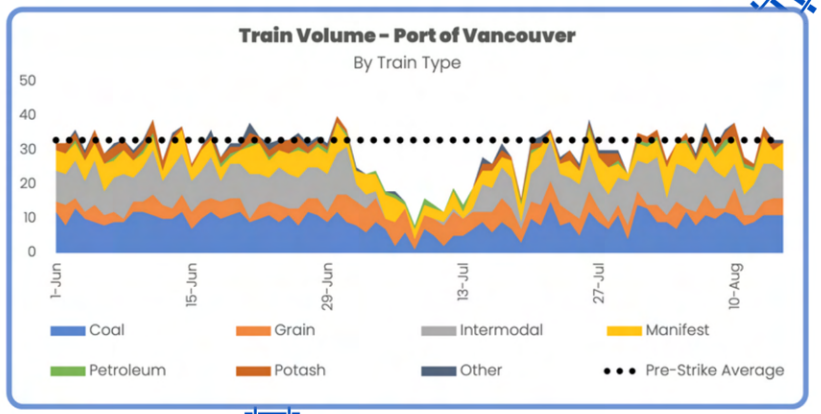
After disruptions train volumes returned to their pre-disruption volumes or even below the recent averages. This has been true for many past disruptions of the rail system, whether the disruptions result from rail strikes or other sources (such as dockworkers strikes, extreme cold, wildfires, or washouts.)

July 2023: Western Ports Dockworkers' Strike

A dispute between the British Columbia Maritime Employers Association and the International Longshore & Warehouse led to a stoppage of most freight moving through the western Canada ports. While not a direct action with the railroads, the two-week work stoppage halted almost all intermodal and most commodities through the ports, with the exception of grain and coal.

Before: 33.0 trains/day → After: 31.2 trains/day

Estimated Train Deficit: 205

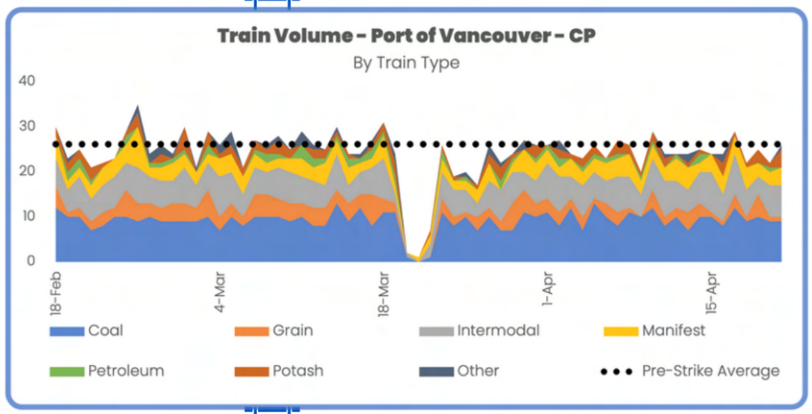


March 2022: 2.5-day CP Strike

In the most recent railroad strike, a work stoppage at CP began at 12:01am, Sunday, March 20 and lasted until noon on Tuesday, March 22. Train volume through CP's most important rail corridor to the Port of Vancouver plummeted. It took less than a day for train traffic to return after the strike, but total train volumes stayed below average.

Before: 26.1 trains/day → After: 24.1 trains/day

Estimated Train Deficit: 65



DISRUPTIONS

Major Disruptions Are Common, The Time to Prepare is Now

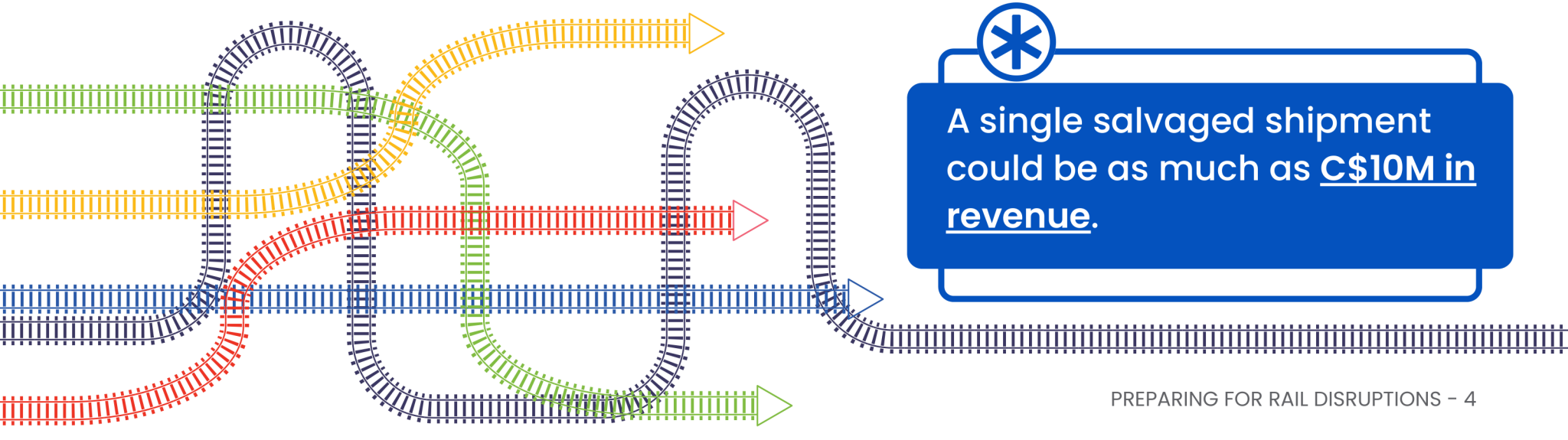
Recent labor disputes are not the only examples of rail shutdowns. Disruptions are not rare events, they happen many times each year and the pattern is the same: a steep decline in train volumes for some amount of time followed by a return to service that is at or below earlier train volumes.

Some other, notable disturbances include:

- **January 2024** - More than a week of extreme cold throughout western and central Canada caused a decrease in train volumes and train lengths. Total car movements through the Port of Vancouver were 35.4% below average.
- **August 2023** - Wildfires in British Columbia caused regular delays to traffic into Vancouver.
- **July 2023** - the main line to Halifax was washed out in heavy rains and remained unusable for a full week.
- **November 2021** - Washouts near Chilliwack, BC disrupted both CN and CP rail traffic in the Directional Running Zone ("DRZ"). Traffic shut down for 9 days. In the month after the washout, train volumes through the DRZ only hit 78% of their earlier average.

With a constant risk of disruptions and no ability to make up lost service, you can't rely only on the railroads to keep your supply chain moving.

It's up to you to take action. That starts with having the right information to navigate disruptions and ensure that you aren't on the losing end when service goes down.



A single salvaged shipment could be as much as C$10M in revenue.

RAILSTATE

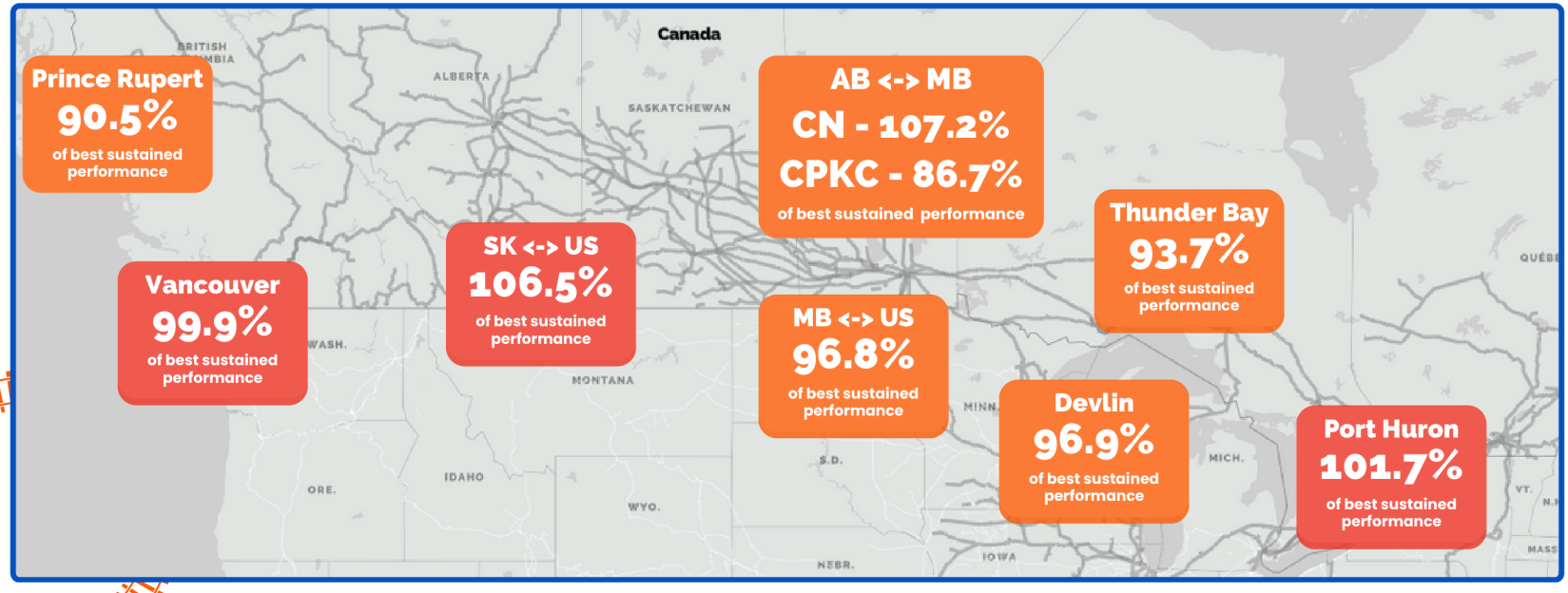
The Current State of the Canadian Rail Network

The opportunities for your supply chain depend on what's happening across the Canadian rail network.

The limiting factor for railroad capacity in the short term is availability of crews (and to a lesser extent locomotives). It is a business decision. The railroads cannot make significant crew additions quickly because crew levels are managed to handle planned volume. In the aftermath of a shutdown, there are not a bunch of extra crews made available to move additional trains. However, some lanes may have short-term capacity. The volume the railroads have been able to sustain on a given route is a key factor in understanding the potential capacity for that route and what opportunity there is for additional shipments. **RailState is the only source of this real-time data**.

The map shows how current train volumes (first two weeks of March) on major routes on the Canadian network compare to the volumes the railroads have been able to sustain for a 2-month period within the past year - their "best sustained performance."

A route operating at or above the "best sustained performance" likely has no potential to handle additional volume.



RAILSTATE TRENDS

Train Volumes on Major Routes - Ports

In the first half of March, traffic through the Vancouver area on CN and CPKC is operating right at the best sustained performance level of the past year, with volumes through Vancouver at **99.9%** of the performance of the past year.

There is likely no immediate potential for additional volumes.

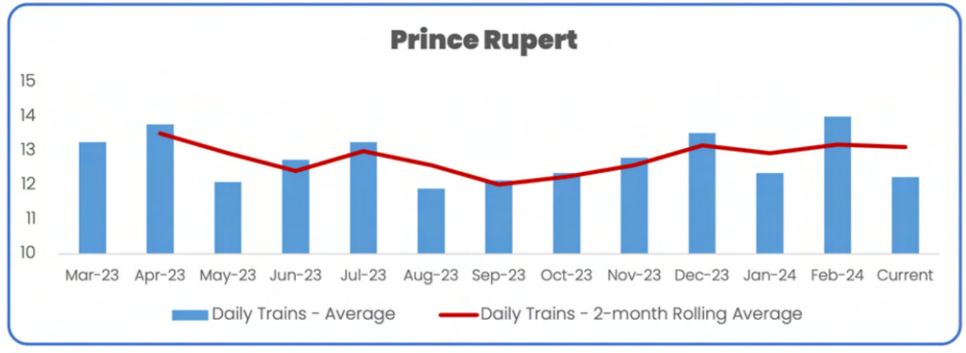
Traffic through Prince Rupert is **BELOW** (90.5%) the best sustained performance of the past year.

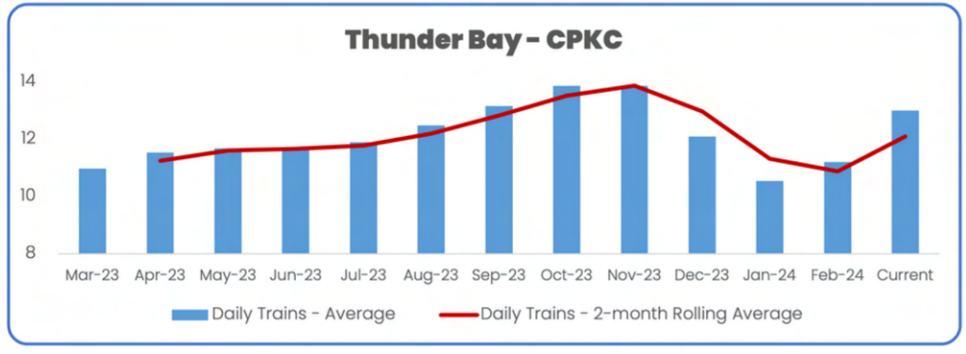
CN is operating 2 fewer trains per day in March than in February of this year.

Compared to March of last year, Prince Rupert is seeing 1 fewer train per day.

Traffic through Thunder Bay on CPKC is currently **BELOW** (93.7%) the best sustained performance of the past year.

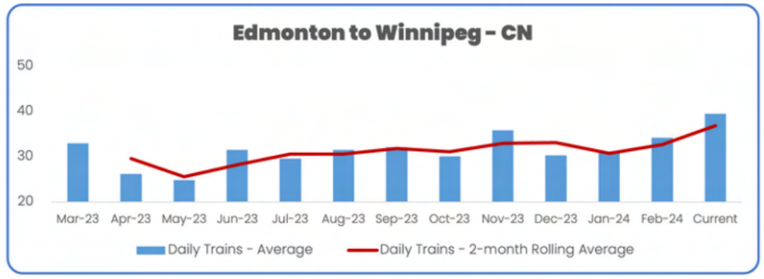
There have been 2 more trains per day through Thunder Bay in March than in February of this year. Thunder Bay is also seeing 2 more trains per day than in March 2023.



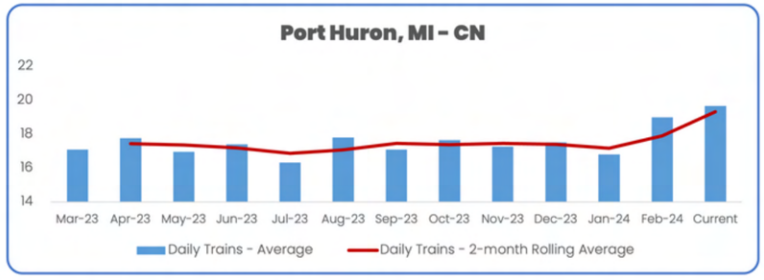


Train Volumes on Major Routes - By Carrier

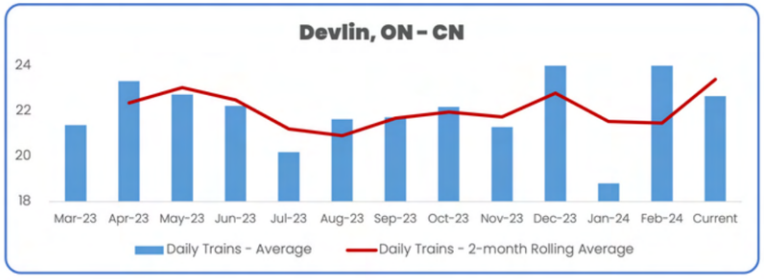
Currently operating **ABOVE** (107.2%) the performance CN has sustained in the past year.



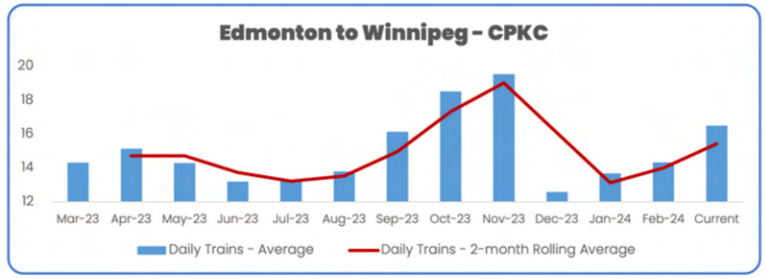
Currently operating **ABOVE** (101.7%) the performance CN has sustained in the past year.



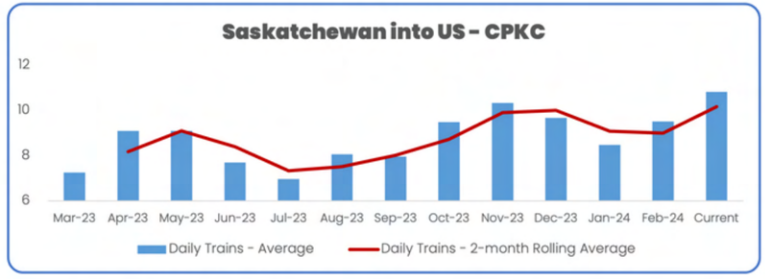
Currently operating **BELOW** (96.9%) the performance CN has sustained in the past year.



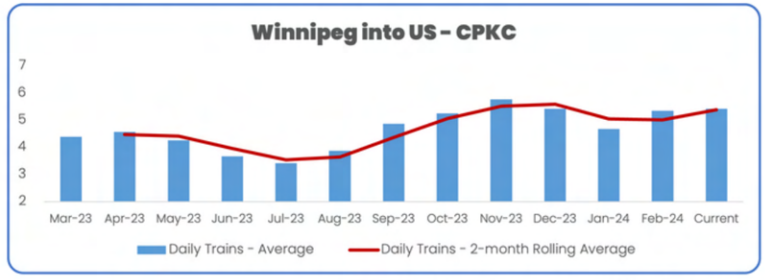
Currently operating **BELOW** (86.7%) the performance CPKC has sustained in the past year.



Currently operating **ABOVE** (106.5%) the performance CPKC has sustained in the past year.



Currently operating **BELOW** (96.8%) the performance CPKC has sustained in the past year.



What You Can Do: How To Reduce Your Risk

With the railroads unable to make up volumes after a disruption, **your missed shipments could become permanent losses**.

These losses, however, will not be shared equally. Some lanes are more resilient than others - they have more current capacity in terms of crew availability, locomotives, train capacity on existing trains, and number of trains to move more volumes before a strike and return to normal service after a strike. That available capacity will be used by those who plan ahead and can identify the best ways to **keep shipments moving before, during, and after a disruption**.

To minimize your potential losses, it's up to you to take action as early as you can.

That means **understanding the state of your rail supply chain**, thoroughly analyzing the options available, and implementing the strategies most likely to succeed. There are a number of strategies you could implement to mitigate the impact of a national strike. The three that rail shippers use frequently are:

#1

Ship Early

Shift inventory and/or accelerate production and secure available rail capacity to send shipments before the start of a strike.

#2

Alternative Routing

Use optionality you have created through strategic investments such as:

- different railways
- multiple ports/terminals
- warehouses and transloads
- multiple manufacturing facilities
- temporary storage facilities

#3

Shift to Trucking

Move shipments to trucks as needed when rail capacity is unavailable.

***A fourth strategy is to do nothing and hope for the best.** This is the strategy many rail customers take. It is not recommended. A national rail strike may be avoided in the coming months but significant disruptions on the rail network that last days or weeks are regular occurrences. Accepting the unreliability of the rail network and incorporating losses into your annual plan is easy. It does not have to be inevitable. Proactive planning with the right tools and information can help you minimize losses during disruptions and seize opportunities to increase sales.

PLANNING

Creating a Risk Mitigation Plan

With real-time rail network insights from RailState you can evaluate any of the strategy options. Our expert staff can also help you understand how to use our tools to execute those strategies. For most companies, moving only one shipment that otherwise would have been missed will generate a 3x - to 10x ROI.

Step 1: Understand Your Company's Risk

- Where are you in your current shipment plan?
- Are you behind due to internal operations or previous rail disruptions?
- What is the potential revenue loss from one day of missed shipments? Two days? More?

Step 2: Review Inventory and Production Adjustments

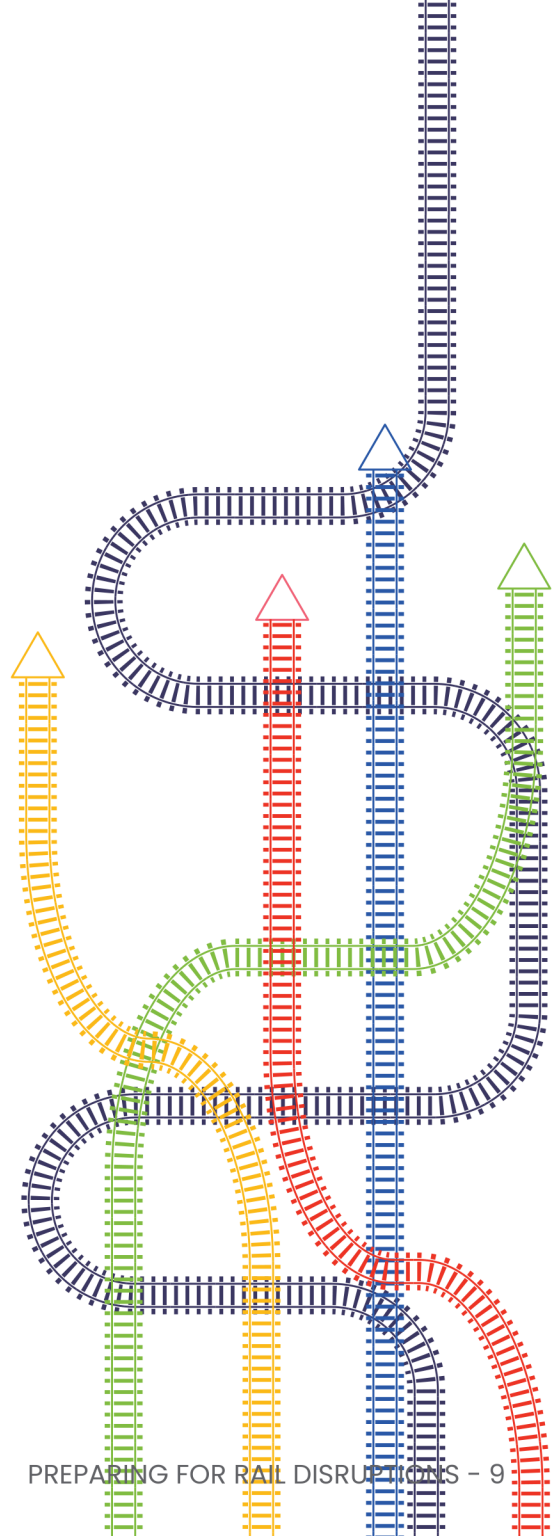
- Do you have enough inventory to ramp up shipments quickly?
- Can you accelerate your production schedule?
- Will your customers accept earlier shipments?
- Can your facility handle additional railcars?

Step 3: Evaluate Strategy Options

- Is it possible to ship early?
- Are alternative routes available?
- How do increased costs from trucking compare to potential losses from missed shipments?

Step 4: Execute

- Deploy the strategy or strategies most likely to succeed



TAKING ACTION

Manifest Shippers

Who: Companies that ship by carload. Producers in energy, lumber, chemicals, automotives, and other products.
Risk from one lost carload: C$10,000 to C$100,000

Strategy #1 - Ship Early	Strategy #2 - Alternative Routing	Strategy #3 - Shift to Trucking
Insight you need: Is there available capacity on your routes?	**Insight you need:** Is there available capacity on your alternative routes?	**Insight you need:** When has capacity returned to normal?
How to Evaluate Review trends on your routes using RailState data • Manifest train **volume** for the previous 30, 90, 180 days • Manifest train **length** over the same period If train volume in recent periods has been higher than the current volumes, or train length has been greater than current lengths, there could be incremental capacity available to you. For railroad-supplied cars, **identify empty car pipeline** • Count and location of cars (e.g. boxcars, gondolas, flatcars) incoming to your facility • Estimated travel time to facility	**How to Evaluate** Review trends on alternative routes and to all your destination areas using RailState data • Manifest train **volume** for the previous 30, 90, 180 days • Manifest train **length** over the same period If train volume in recent periods has been higher than the current volumes, or length has been greater than current lengths, there could be incremental capacity available to you in some of your lanes. For railroad-supplied cars, **identify empty car pipeline** • Count and location of cars (e.g. boxcars, gondolas, flatcars) incoming to your facility • Estimated travel time to facility	**How to Evaluate** If there is not likely to be available rail capacity for Strategy #1 and #2, shift to trucking early. During recovery • Monitor capacity on your routes and alternative routes to know when performance returns to normal • Monitor empty car pipeline to identify sufficient supply
Action to take • Discuss with your rail carrier plans to ship ahead and provide forecast volumes. • Request additional cars from railroad based on knowledge of likely empty car volume and distance from your facility. • Compare additional costs to risk of lost shipments	**Action to Take** • Modify shipping strategy if possible, shift shipping locations, prioritize your shipments on lanes with potential capacity. • Discuss with your rail carrier plans to ship ahead and provide forecast volumes. • Request additional cars from railroad based on knowledge of likely empty car volume and distance from your facility • Compare additional costs to risk of lost shipments	**Action to take** • Secure truck capacity before competition, at better rates. • Return to rail service with optimal timing to eliminate the additional cost of premium transportation as soon as possible.

IN ACTION

Locating Capacity Using RailState Data to Locate Empty Boxcars

Solution

RailState tracks every train and every railcar in Canada, so we have visibility to the entire boxcar supply in Canada. RailState also has data on the transit times from various parts of the system to the forest products loading areas. We have used this data to help a forest products shipper get visibility into their empty boxcar supply.

Methodology

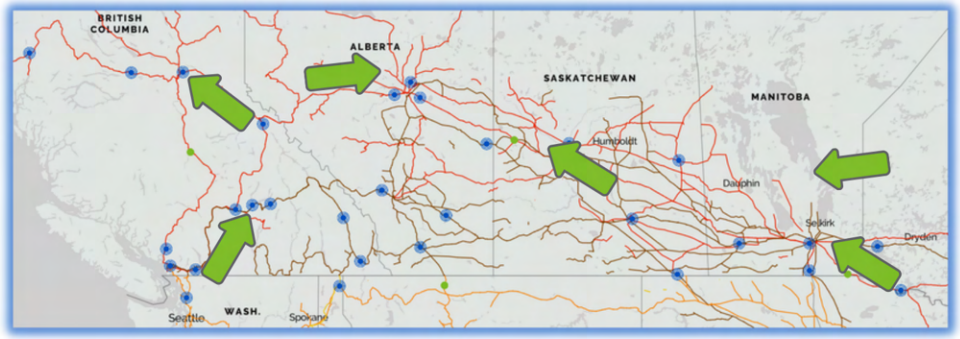
STEP 1:
We mined our large database of train and railcar movements in Canada to identify the major flows of boxcars from destination markets in Vancouver (exports) and from the US border back toward the loading area in AB.

STEP 2:
Based on our understanding of the boxcar flows, we divided the railway into several zones and, based on the most recent sighting at a RailState sensor, identified the total boxcars currently in each zone.

STEP 3:
Based on our historical data of transit times in Canada, we then identified the transit time from each zone to the loading area.

Empty Boxcar Flows

RailState has a view of most car movements in Canada



Total Empty Boxcar Pipeline

3 Day Average Supply by Zone and Days to Placement at Mills North of Edmonton (CN)

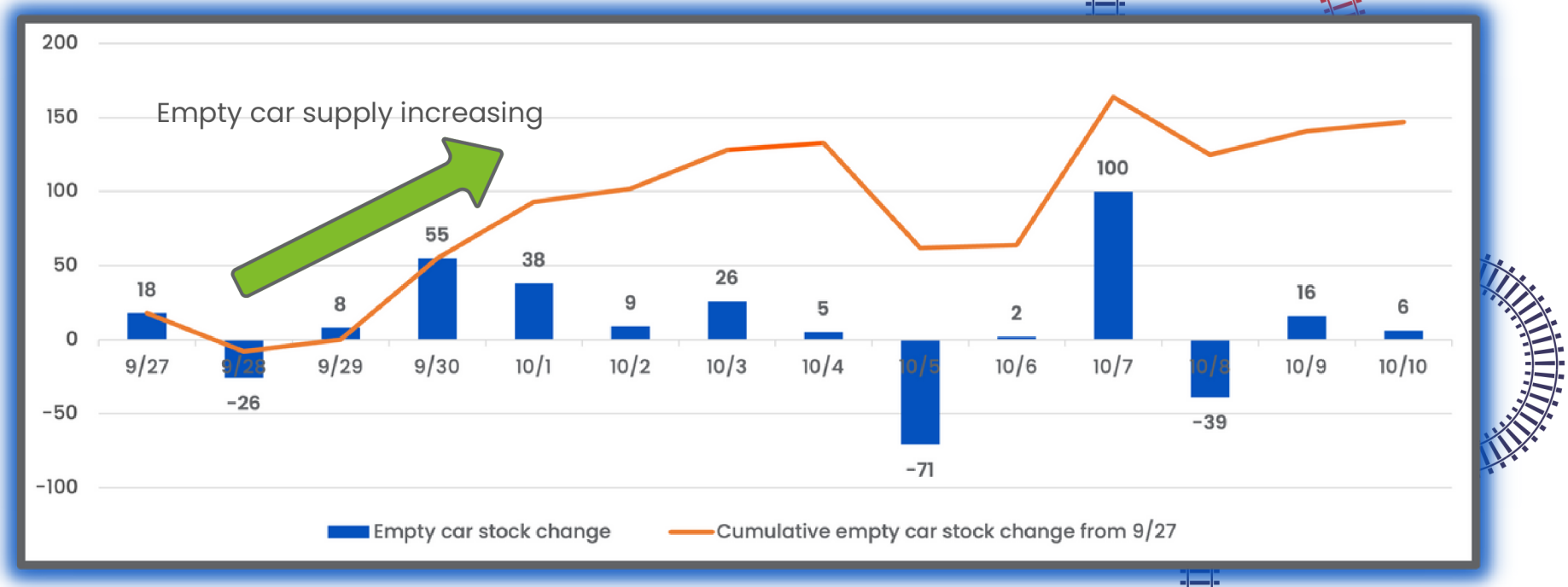
IN ACTION

Quantifying Empty Boxcar Supply in Each Zone

STEP 4:
RailState monitors and reports daily the supply of boxcars in each zone. We are continuously gathering historical data so the customer knows the typical supply in each zone and can now see when supply starts to drop in a zone. When that happens, the customer can now see an empty car supply problem start to happen two to five days away. The customer can also now understand what percent of the available supply they are receiving and if that percentage changes.

For Each Zone - Tracking Change in Total Empty Car Supply

Change in Empty Boxcar Supply - Edmonton CN



TAKING ACTION

Bulk Shippers

Who: Companies that ship by the trainload. Commodity producers in coal and energy, potash/fertilizer, and grain products.
Risk from one lost shipment: C$5million to C$10million (or more)

Strategy #3 of shifting to trucking is generally not available to bulk shippers. The higher cost of trucking at the large quantities needed to be shipped make trucking not economically viable in most situations.

Strategy #1 - Ship Early	**Strategy #2 - Alternative Routing**
Insight you need: Is there available capacity on your routes?	**Insight you need:** Is there available capacity on your alternative routes?
How to Evaluate • Train volume for the previous 30, 90, 180 days • Mix of train types (coal, grain, potash, intermodal, manifest) over same period • Transit times by train type If train volume in recent periods has been higher than the current volumes, even if for a few days or weeks, there could be incremental capacity available to you.	**How to Evaluate** • Identify potential alternative routes and review trends trends on your routes using RailState data: • Train volume for the previous 30, 90, 180 days • Mix of train types (coal, grain, potash, intermodal, manifest) over same period • Transit times by train type If train volume in recent periods has been higher than the current volumes, even if for a few days or weeks, there could be incremental capacity available to you.
Action to take • Approach the railway about shipping ahead. You have data now that indicates there may be capacity on this line. Work with them to schedule your additional shipments at times they can best handle it.	**Action to Take** • Approach the railway about shifting volumes to alternative origins, destinations, or routes (e.g. different port, different mine than planned) You have data now that indicates there may be capacity on this line. Work with them to schedule your additional shipments at times they can best handle it.

STRATEGY #1 AND #2 IN ACTION

July 2023 Dockworkers' Strike: Accelerated Shipments and Alternative Routes

In July 2023, a labor stoppage at the western ports curtailed the majority of export flows. Some commodities, however, were still able to move. Canadian law requires that most grain continue to move for export during this kind of work stoppage.

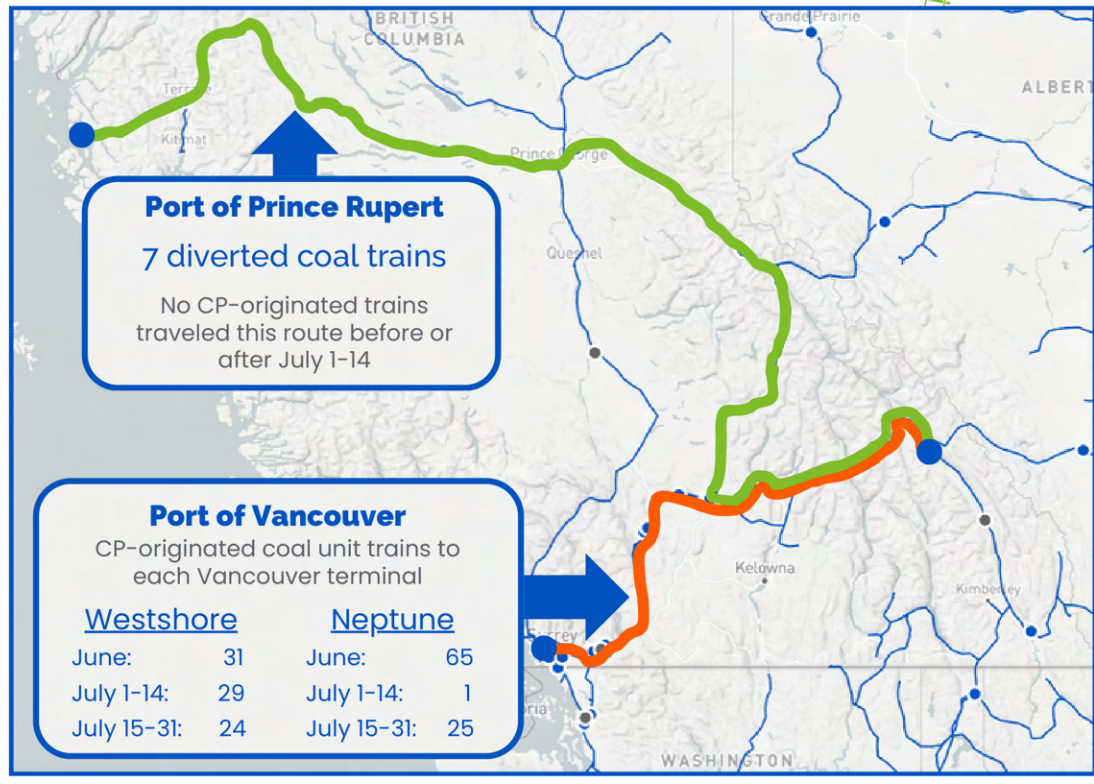
Westshore Terminals, an export terminal dedicated to coal, in Vancouver and one terminal at Prince Rupert, were not subject to the same labor agreement as the other western terminals experiencing the work stoppage. That meant that the railroad capacity through British Columbia remained the same as before the strike. It was demand that fell.

Rail routes in British Columbia now had significant excess capacity, and some bulk shippers took advantage. **Grain shippers moved product earlier than usual** and also moved more grain to Prince Rupert that would typically go to the Port of Vancouver. Grain train volume increased 78% to Prince Rupert and 22% to Vancouver during the labor stoppage.

Coal shippers with agreements on both CN and CPKC used alternative routes to send coal on a much longer journey to Prince Rupert instead of Vancouver (which had a constrained ability to export coal with only one terminal operating).

Coal train volume to Prince Rupert increased 52% while coal traffic to Vancouver fell 37% during the work stoppage. This coal shipper incurred increased costs from the longer route but moving seven additional coal trains during this period was worth tens of millions of dollars in profit.

Coal Moved on Alternative Routes



CONCLUSION

Taking Action Now: What To Do Next

Get the Real-Time Insights You Need with RailState

- Engage with RailState for access to the only source of real-time insights on all train movements across the Canadian rail network
- Measure current and recent volumes on your most used routes and work with RailState's team to identify potential excess capacity

Negotiate for Additional Capacity

- If you can advance volume, even a small amount, inform the railroad and modify your forecast to advance May volumes. Ask for additional cars if using railroad-supplied cars, additional train slots if a unit train shipper, or inform the railroad of plans to increase volume if you're a manifest shipper with your own cars
- If the railroad is cooperative, work with them to slot the additional volume on days/times that works best with their operations
- If the railroad is uncooperative, escalate the discussion, indicate they have provided capacity previously, enlist your customers to help, and push as hard as you can

Continue to Monitor Your Rail Supply Chain

- If the railroad remains uncooperative, monitor volumes on your routes in real time during the strike and recovery
- Identify areas of potential excess capacity during the recovery and negotiate with the railroad
- Understand if you have been fairly treated
  - Did the railroad handle additional trains before or after the shutdown?
  - Identify who received that capacity, and use that to apply pressure with regulators and other customers, which may increase leverage over the long term

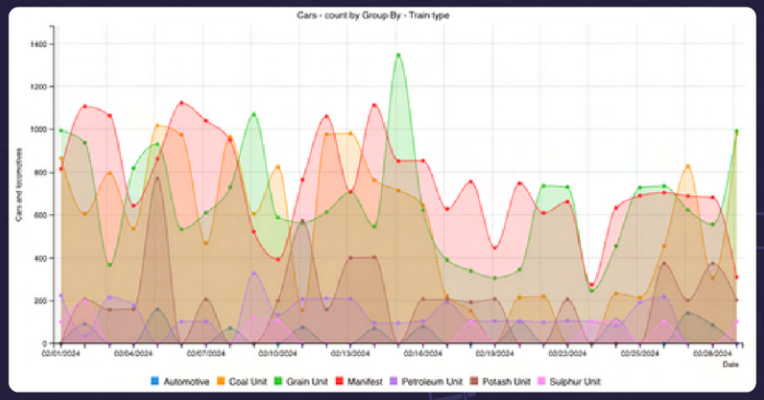
Plan for the Next Disruption

- No one knows the precise date of the next rail network disruption but other disruptions are inevitable in the coming months
- Plan ahead by identifying areas of opportunity for increased optionality and build additional resiliency into your rail supply chain

Know What's Up Ahead with RailState

Real-Time Network Insights

A bird's-eye view of your rail supply chain with instant views into performance and timely alerts on the issues and routes that matter to you most

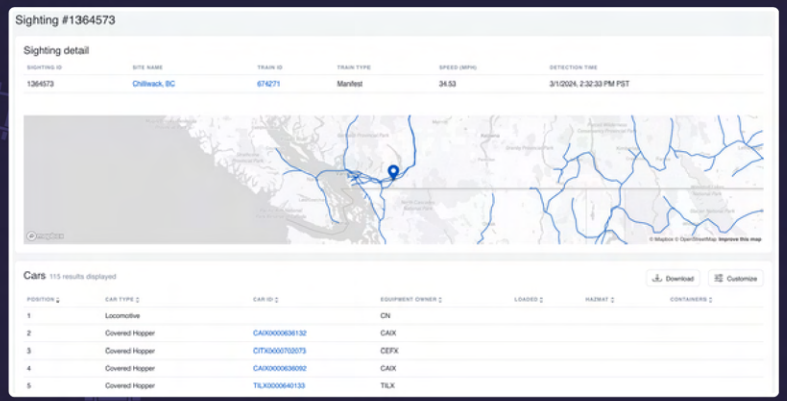


Critical Trend Analysis

Understand what's impacting your shipments and your competition, and identify areas of opportunity with easy analysis across all performance metrics

Detail Down To The Car Level

Unparalleled levels of granularity - from network level performance data down to individual train consists with car IDs



Learn more at www.railstate.com