



July 1, 2022
Industry Update

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What do we want to see in this industry?

Resilient operations able to provide consistent service across all parts of the economic cycle.

With regard to the four big US railroads, we're unfortunately a long way from this ideal and it feels like they need a back-to-basics reboot as more customer-focused and service-centric organizations. Easy for us to say; hard to do.

RAILROADS

The State of the Rails – US System Deteriorates

This is a periodic report that primarily discusses operational trends for the North American Class I railroads. This edition incorporates weekly operating data through June 24. Note that StatCan in Canada didn't update weekly metrics on Friday morning as it typically does, likely due to Canada Day, so some of our charts for CN and CP only run through June 10.

US Rail System Still Deteriorating, On Balance

We're now in the second half of 2022, when the four major US Class I have committed to turning their operations around, but the current state of play is not encouraging. Only Union Pacific has made any progress in recent months, but that has been from a low base and fading somewhat over the last two weeks. We would regard UP and Norfolk Southern as now in a "steady state" and it's the other two we're more worried about in terms of trajectory.

BNSF's intermodal business, in particular, is really struggling and in no shape to handle peak season volumes, which typically start around mid-August. Last week, BNSF Intermodal hit new lows in terms of network velocity (28.9 mph vs. 32.3 average in 2021) and on-time performance (only 57% of containers deramped within 24-hours of schedule), and a new high in terms of intermodal cars sitting idle for 48-hours or longer (1,610 out of 19,969 intermodal cars-on-line). To be fair, weather and other external factors had an impact. More broadly, the full system has seen record trains holding for crews over the last six weeks and a high in reworks to 1,789 at a rework rate of 13.4% last week.

Over in the east, CSX is coming off two bad weeks, recording multi-year lows in velocity and multi-year highs in trains holding for crews, terminal dwell, and the proportion of cars-on-line sitting idle for 48 hours or more. Last week on-time performance in its manifest network hit a new record low of 64%.

While it pains us to recount these statistics, for what it's worth we're confident both BNSF and CSX have the talent to turn this around and fully expect them to do so, but you can't start getting better until you stop getting worse and more patience will, unfortunately, be required from all of us.

The Double-Edged Sword of 4th of July

Last week we talked about 4th of July as both a blessing and a curse for the US railroads and we'll dig into that a little more here. On the positive side, the holiday on Monday, subsequent four days of heavily reduced customer activity, and bookending weekends represents the second biggest drop in volume pressure of the year, behind of course the Christmas to New Years period. Historically, weekly volumes temporarily subside by 14% at NS, 13% at CSX, 11% at UP, and 8% at BNSF. These are big drops in volume pressure over a 9-day period, which is both positive and badly needed given the current state of affairs. However...

This period also represents peak summer vacation season, and the networks can obviously ill-afford to lose crews during a crew capacity crunch. In terms of putting some numbers around it, if we look at the monthly seasonality in the four years prior to the pandemic, mid-month crew headcount fell by 0.5% on average from mid-June into mid-July for the US rail industry. For some reason it's more pronounced in the east, with CSX and NS down 3.3% and 0.8%, respectively, versus -0.2% at UP and +0.5% at BNSF. Clearly these mid-month statistics also understate the crew shortfalls over the first ~nine days of July. By July 15th the heavy vacation effect has partially normalized.

The railroads are of course well aware of this dynamic and no doubt doing all they can to buy out/stagger/delay vacations next week, but it likely won't be completely successful and we're still looking at a situation where the opportunity try to improve operations during the volume pressure reprieve will be diluted by temporarily increased crew scarcity.

Crew Deficit: ~4,100

Updating our crew models with the most recent data points for network velocity (last week) results in the following updated estimates with regard to the minimum number of additional crews required to trigger a service recovery. We've regressed slightly, with net velocity for the four major systems slightly slower last week, which pushes our estimated crew deficit from ~4,000 to ~4,100.

In terms of predicting the order in which these systems operationally inflect for the better, look at the % Deficit column on the far right. The smaller the number, the closer to recovery.

Train & Engine Headcount (April) versus Estimated Crews Required to Trigger a Service Rebound

Railroad	Actual Crews	Required Crews	Crew Deficit	% Deficit
Union Pacific	13,748	14,530	782	5.7%
BNSF	14,578	16,082	1,504	10.3%
CSX	7,046	8,077	1,031	14.6%
Norfolk Southern	7,921	8,667	746	9.4%
Total	43,293	47,356	4,063	9.4%

Source: STB and Loop Capital estimates.

Some important caveats to note with regard to this table:

1. Some of the railroad's T&E crew headcount numbers (Actual Crews) include trainees, which are higher as a percentage of total now than historically, which in turn makes the crew deficit numbers look slightly better (smaller) than they actually are.
2. When railroads are running poorly, crew capacity is diluted by *non-productive crew starts*, such as deadheads (repositioning crews by road transport) and recrews (replacing a crew due to an unanticipated expiration of the allowable 12 hours).
3. It will likely take several months before conductor graduates in the field are satisfactorily productive.

For an explanation of how we arrive at the numbers in the table, click [here](#).

The State of the Rails

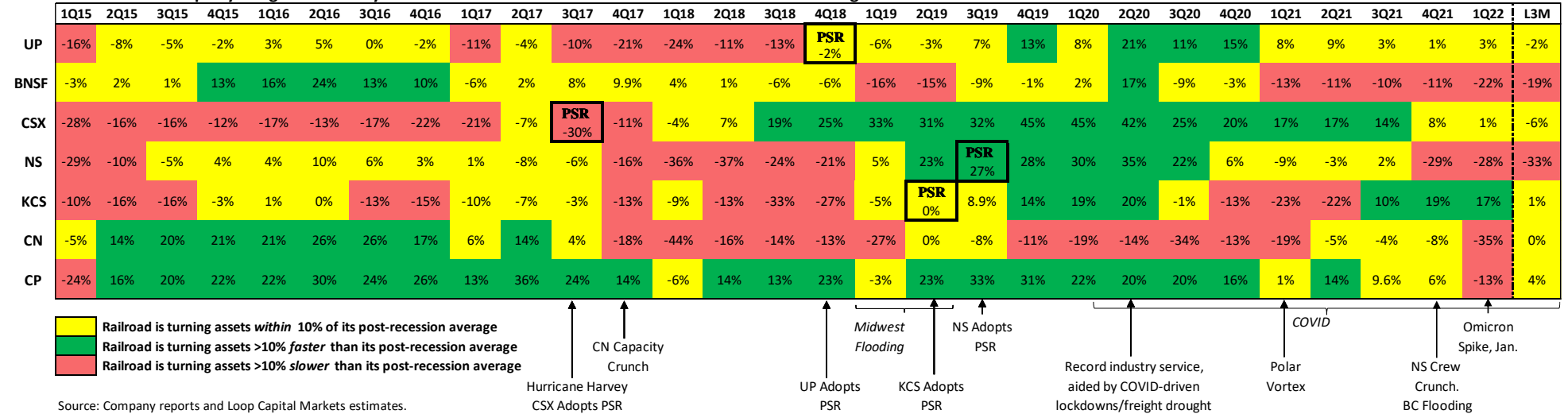
Running well/fast: None.

Running OK/normal: Canadian Pacific, Canadian National, Union Pacific, CSX, Kansas City Southern.

Running poorly/slow: Norfolk Southern, BNSF.

Note that while CSX and Union Pacific are categorized as turning assets within 10% of their post-recession average (yellow), this is a little generous because their switches to PSR resulted in a structural reduction in terminal dwell; hence a lower bar they're now measured against. Customer feedback and on-time performance data has them deep in the red.

Service Matrix: Equally-weighted Velocity + Terminal Dwell versus each Railroad's Post-recession Average



Source: Company reports and Loop Capital Markets estimates.

Post-recession defined as Q1 2010 through the present.

L3M = Last 3 Months (last 13 weeks trailing average).

How does the chart work?

e.g. Velocity 10% better than its post-recession average + dwell 10% better than its post-recession average = 20%.

Velocity 10% worse + Dwell 10% worse = -20%.

Velocity 10% better + Dwell 10% worse = 0%.

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Note on Data Definitions

There’s a lot of data in this document and it obviously originates from the railroads themselves. While most of this data is standardized in terms of how it is defined and measured, in some cases it is not. For example, CSX measures trains holding differently to Norfolk Southern. Similarly, some railroads measure velocity inclusive of intermediate delays and dwell in yards (gross velocity), while others measure it exclusive of terminal dwell. The companies are free to measure these things however they like, but given these differences readers should primarily focus on how these metrics change over time at each individual railroad and be careful with regard to comparing any single measure across multiple railroads. We also make the assumption the data is accurate given it is reported weekly by the railroads to their primary regulator, the Surface Transportation Board. There have been occasions in the past where errors have been discovered, but the companies have addressed these promptly with restated corrections.

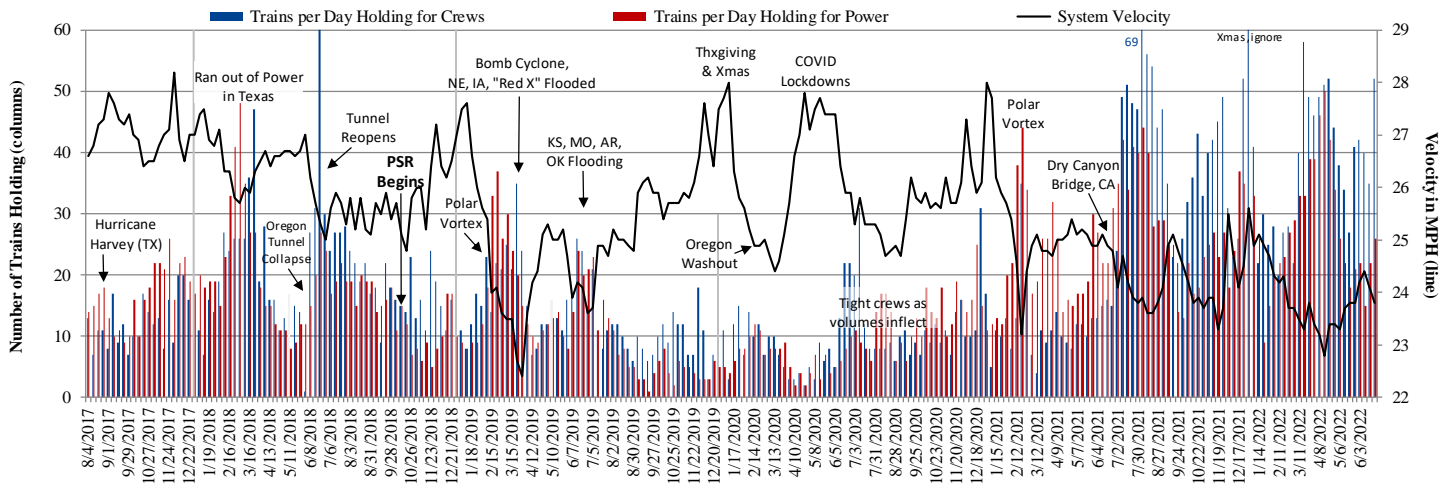


Union Pacific

Last week UP saw a second small tail-off in network velocity following the volume-light Memorial Day week. Of more concern was a significant increase in trains holding for crews, which came in at 52 per day last week—a two-month high. Trains holding for power also increased to 26 per day compared to 22 per day the prior week.

Trains Holding and Speed

Figure 1: Union Pacific Velocity (higher is better) and Trains per Day Holding for Power and Crews (lower is better)

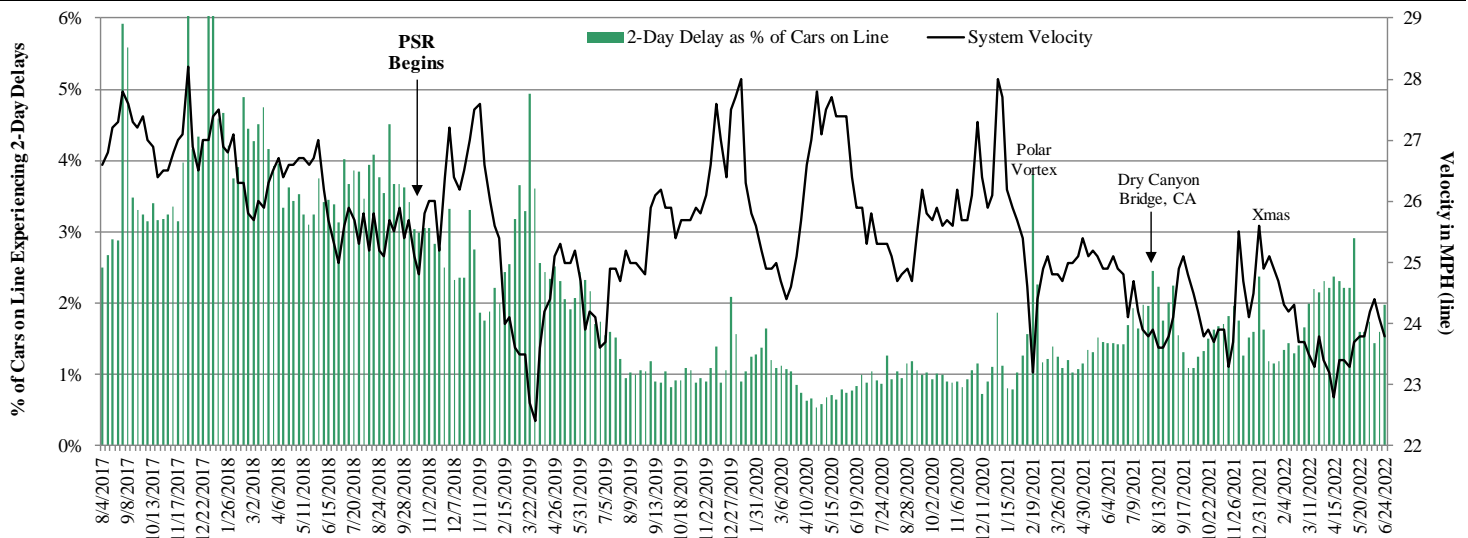


Source: Union Pacific and Loop Capital Markets. UP trains holding is based on a daily snapshot that counts the number of trains delayed as at a certain time every day.

2-Day Delays

A corroborating backslide here, with cars sitting idle form 48-hour or more increasing to 2.0% of the active fleet versus 1.6% in the prior week.

Figure 2: Union Pacific Velocity and the Percentage of Cars-on-Line that have not moved in 48-hours or more (lower is better)

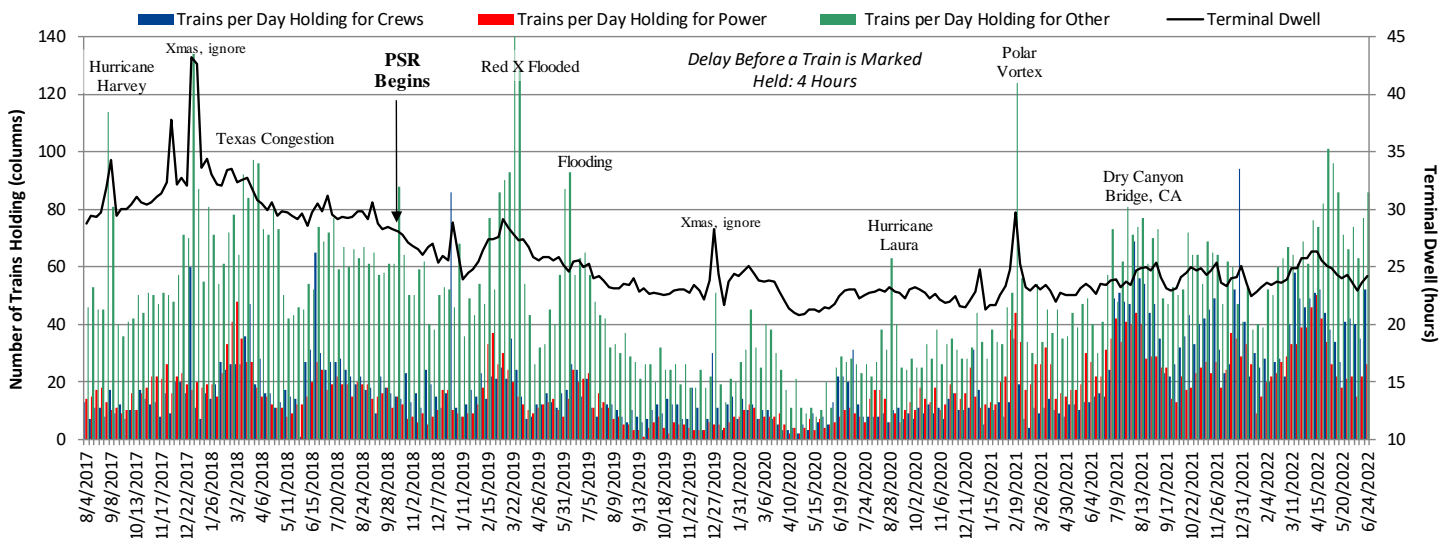


Source: Union Pacific and Loop Capital Markets

Trains Holding for Power, Crews, and 'Other'

Trains holding for all reasons other than power and crews also higher, to a six-week high of 86 per day.

Figure 3: Union Pacific Trains per Day Holding for Power, Crews and 'Other'

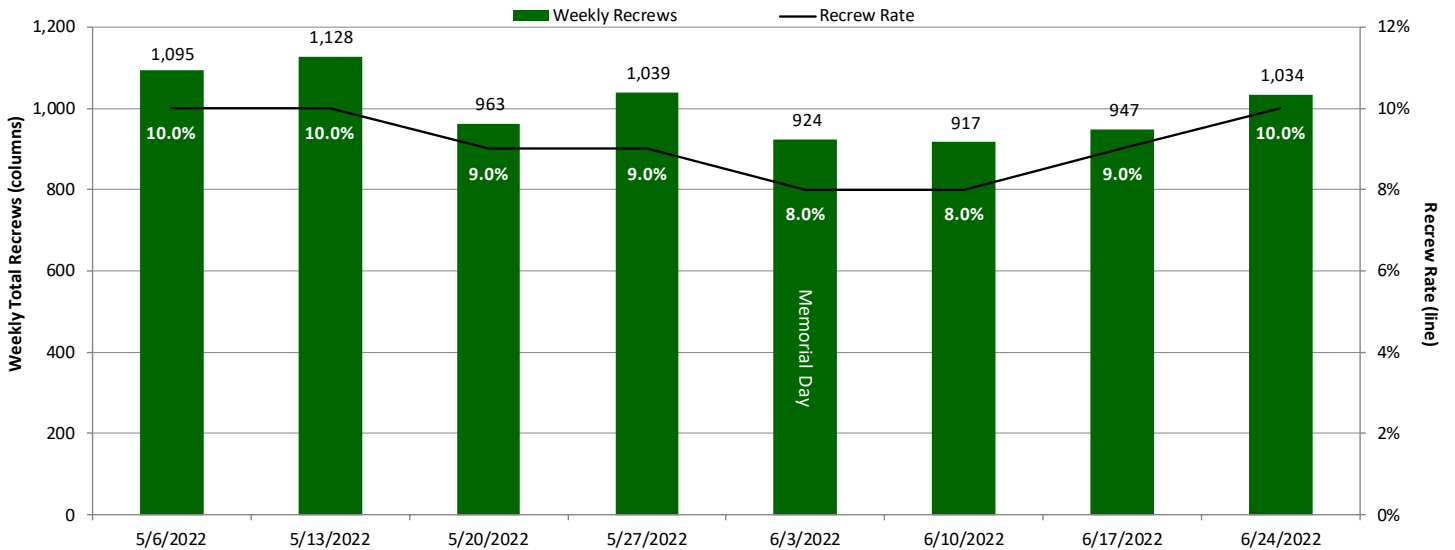


Source: Union Pacific and Loop Capital Markets. UP trains holding is based on a daily snapshot that counts the number of trains delayed as at a certain time every day.

Recrews

We now have two months of recrew data. The Memorial Day effect has now worn off and we're back above 1,000 recrews per week at a 10% recrew rate.

Figure 4: Union Pacific Weekly Recrews and Recrew Rate

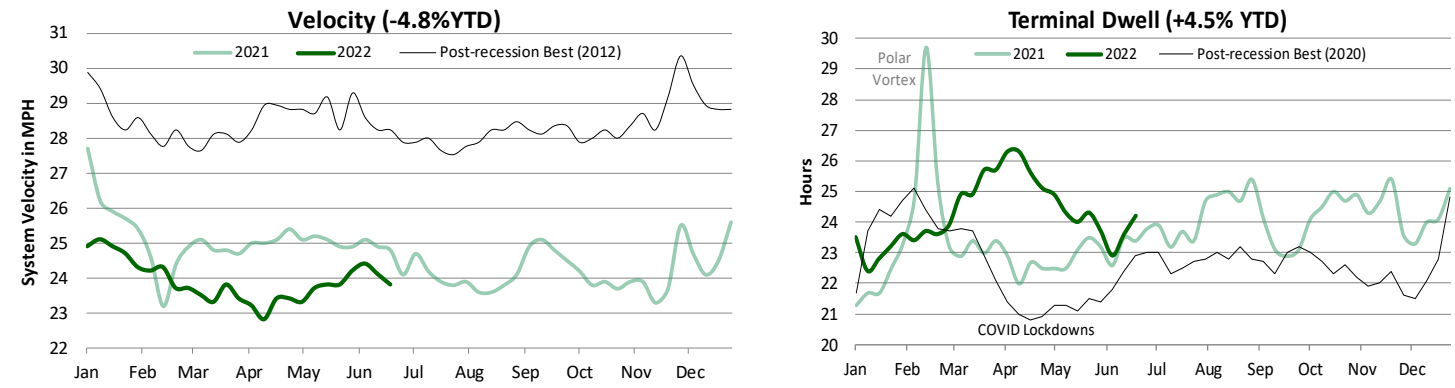


Source: Union Pacific and Loop Capital. A recrew is an unanticipated crew change due to the original crew exhausting their legally allowable hours.

YoY System Velocity and Terminal Dwell

Both these charts aren't far off year-ago levels, but the current trend for both is a worsening.

Figure 5: Union Pacific System Velocity and Terminal Dwell



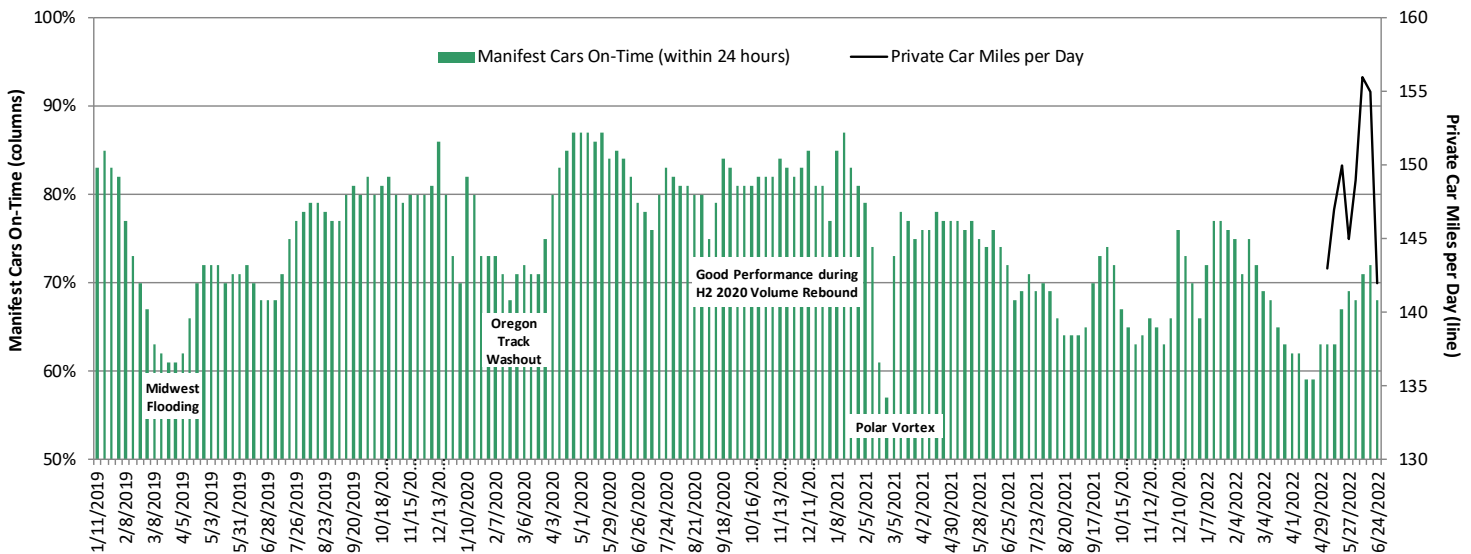
Source: Union Pacific and Loop Capital Markets

Manifest Network On-Time Performance

After a nice recovery trend since late April, manifest on-time performance took a step backwards from 72% to 68% last week. This was accompanied by a significant drop in private car miles per day, from 155 to 142.

Manifest service accounts for about 57% of average daily trains starts at UP.

Figure 6: Union Pacific Manifest Network On-Time Performance and Car Miles Per Day



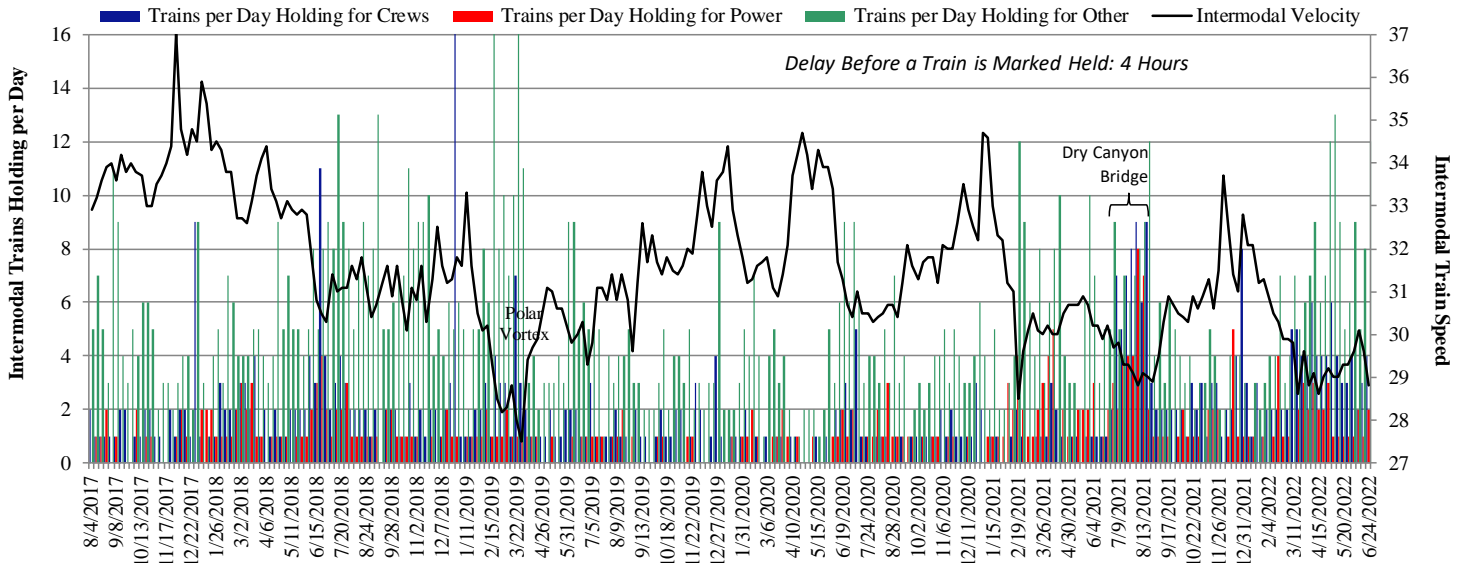
Source: Union Pacific and Loop Capital Markets

Intermodal Network Efficiency

Train Speed and Trains Holding

Intermodal continues to be a struggle, with speed once again nudging towards a multi-year low. Last week intermodal trains holding for crews was worse (3 to 4), power was worse (1 to 2) and 'other' was worse (8 to 12). Intermodal on-time performance fell from 73% to 63%. For perspective, UP's three-year low is 61%, which was set a month ago.

Figure 7: Union Pacific Intermodal Average Train Speed and Trains Holding for Crews, Power & Other

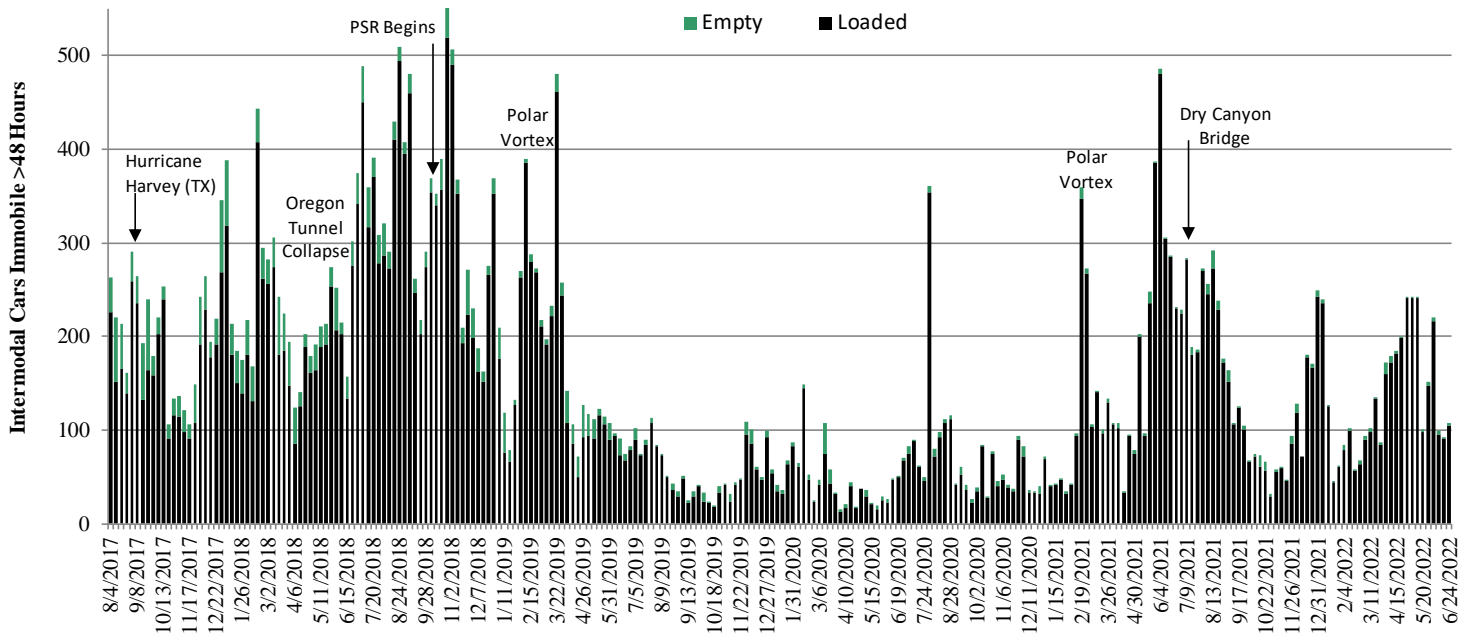


Source: Union Pacific and Loop Capital Markets

2-Day Delays

Intermodal cars sitting idle for 48-hours or more still running around 100 over the last three weeks.

Figure 8: Union Pacific Intermodal Cars Immobile for 48 Hours or More (lower is better)



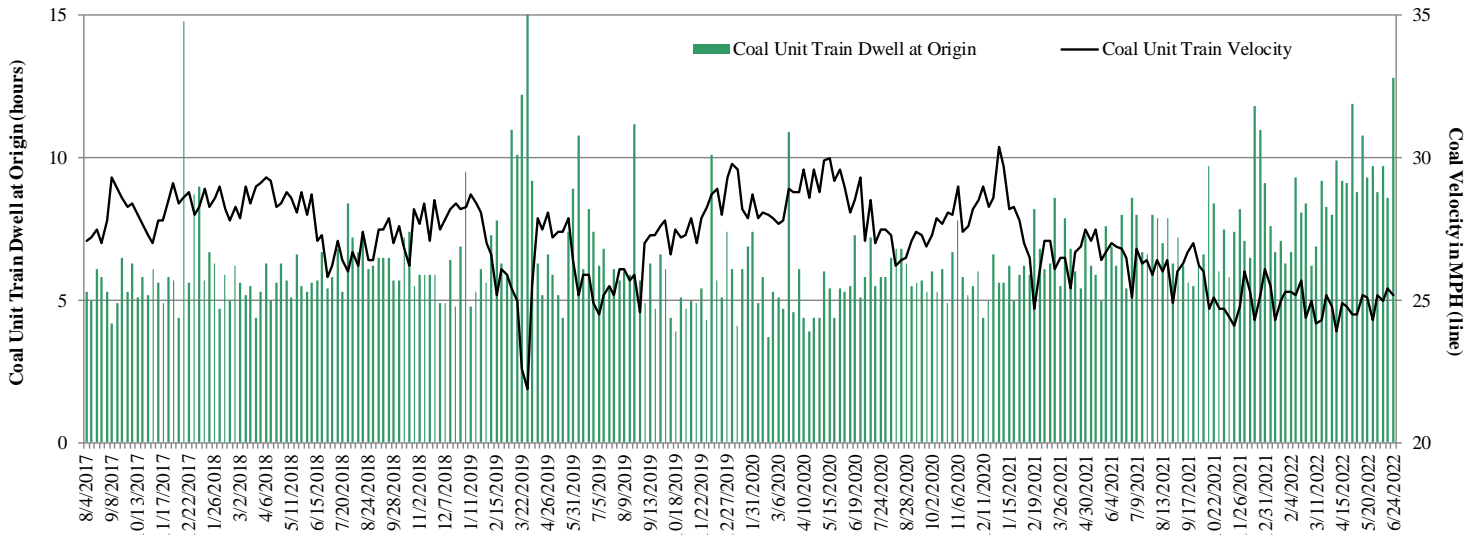
Source: Union Pacific and Loop Capital Markets

Coal Train Efficiency

These charts show two measures of unit train efficiency. The first is the average number of hours trains dwell at origin prior to departure. These columns are in green and lower is obviously better. The second is the average velocity line of these trains in mph between origin and destination. Clearly higher is better.

UP's coal network on-time performance was 73% in the most recent week; down from 88% the week prior.

Figure 9: Union Pacific Coal Unit Train Dwell at Origin (lower is better) and Coal Unit Train Velocity (higher is better)

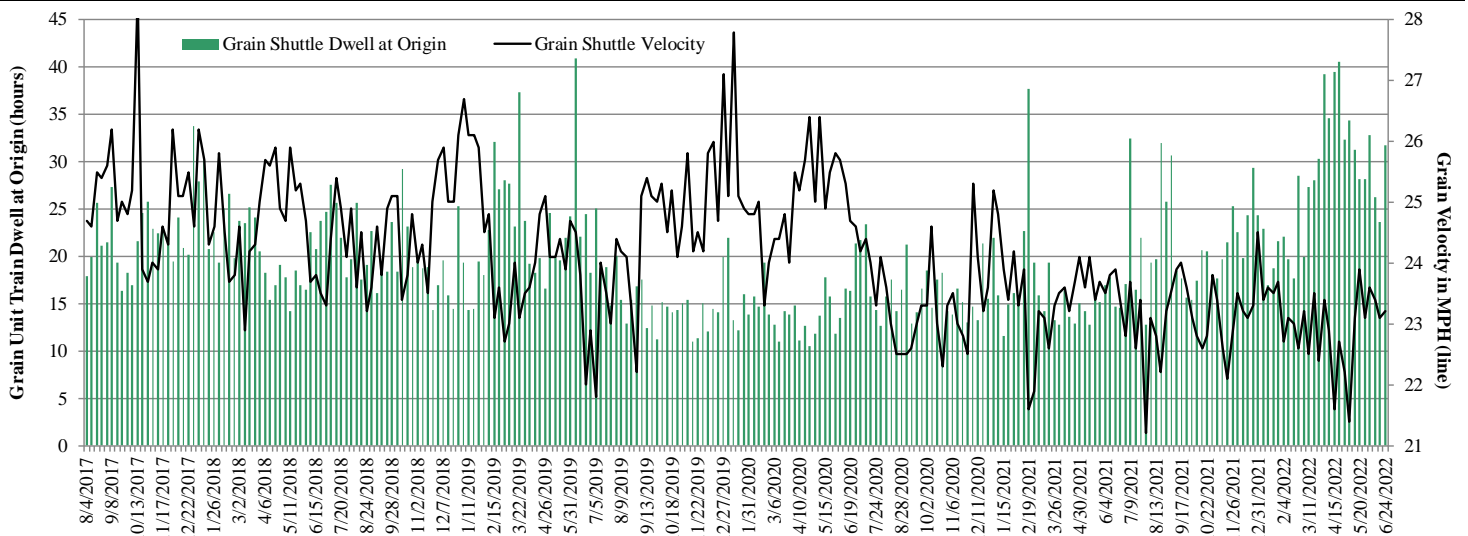


Source: Union Pacific and Loop Capital Markets

Grain Train Efficiency

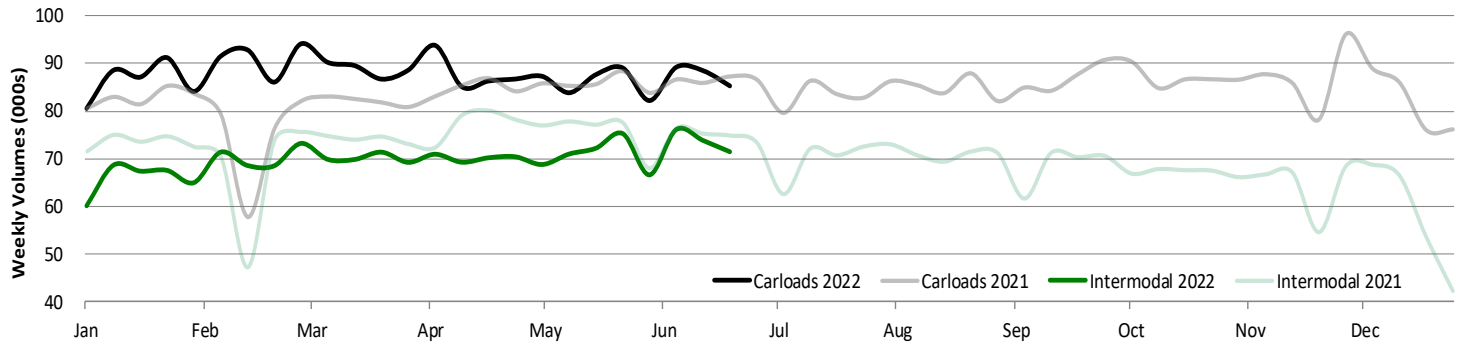
Dwell at origin still highly elevated. Grain network on-time performance was 60% last week vs. 70% the week before.

Figure 10: Union Pacific Grain Shuttle Train Dwell at Origin (lower is better) and Grain Shuttle Train Velocity (higher is better)



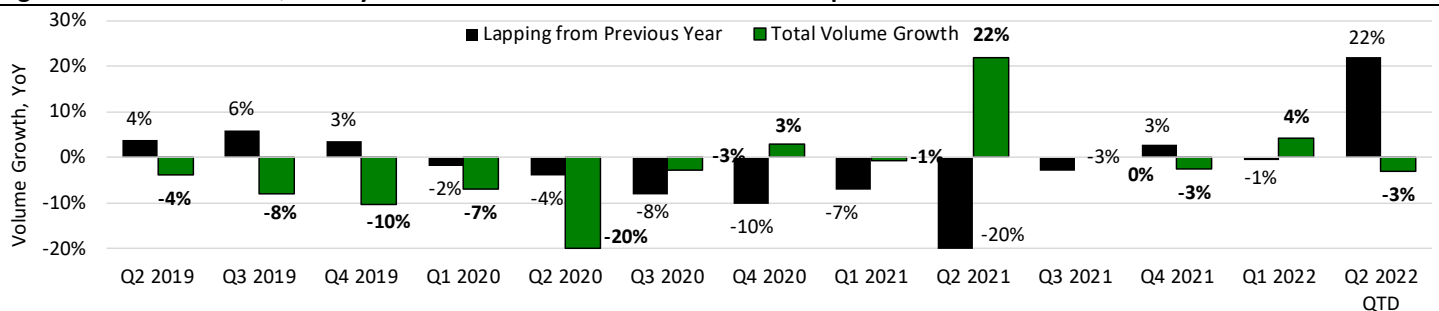
Source: Union Pacific and Loop Capital Markets

Union Pacific Volumes Through Week Ending 6/25/22



Reporting Segment	Commodity	Year-to-Date			Q2 Quarter-to-Date			Week Ending 6/25/22		
		2021	2022	Δ	2021	2022	Δ	2021	2022	Δ
Grain & Grain Mill (13% of Sales)	Grain	194.4	175.5	(9.7%)	94.8	80.8	(14.8%)	6.9	6.6	(3.5%)
	Grain Mill Products	79.6	88.2	10.8%	39.4	43.1	9.3%	3.1	4.1	31.7%
	Total Grain & Grain Mill	274.1	263.7	(3.8%)	134.2	123.9	(7.7%)	10.0	10.7	7.5%
Fertilizer (3% of sales)	Nonmetallic Minerals	25.8	25.9	0.5%	16.3	16.8	2.8%	1.4	1.4	(2.6%)
Food & Refrigerated (5% of Sales)	Food & Kindred Products	109.6	113.9	3.9%	55.7	55.4	(0.5%)	4.2	4.3	2.0%
	Farm Products, Ex. Grain	7.7	7.0	(10.0%)	3.5	3.1	(12.7%)	0.3	0.2	(15.8%)
	Total Food & Refrigerated	117.3	120.8	3.0%	59.2	58.5	(1.2%)	4.5	4.5	0.9%
Coal & Renewables (9% of Sales)	Coal	334.4	388.6	16.2%	174.7	176.3	0.9%	16.6	12.8	(23.3%)
	Coke	15.5	15.2	(2.0%)	8.5	8.3	(2.2%)	0.6	0.8	35.5%
	Primary Forest Products	7.4	10.7	44.3%	3.8	5.2	37.5%	0.3	0.5	56.6%
	Total Coal & Renewables	357.3	414.5	16.0%	187.0	189.8	1.5%	17.6	14.1	(19.9%)
Industrial Chemicals/Plastics (9% of Sales)	Chemicals	458.5	497.1	8.4%	234.1	240.4	2.7%	18.7	18.9	1.4%
	All Other Carloads	95.4	81.5	(14.6%)	50.4	39.9	(20.7%)	3.9	3.1	(22.1%)
	Total Chemicals & Plastics	553.9	578.6	4.5%	284.4	280.4	(1.4%)	22.6	22.0	(2.7%)
Metals & Minerals (9% of Sales)	Crushed Stone, Sand & Gravel	160.5	193.5	20.6%	88.3	101.2	14.5%	7.5	8.6	13.3%
	Stone, Clay & Glass Products	71.4	78.2	9.5%	39.2	39.9	1.7%	3.1	3.3	5.5%
	Metals & Products	57.0	69.0	21.0%	30.5	33.8	11.1%	2.3	2.6	12.5%
	Iron & Steel Scrap	20.7	25.0	20.9%	10.6	12.9	21.6%	1.0	1.0	8.4%
	Metallic Ores	18.1	16.9	(6.6%)	9.7	7.9	(18.8%)	0.7	0.6	(10.1%)
	Total Metals & Minerals	327.7	382.6	16.8%	178.3	195.6	9.7%	14.6	16.0	10.1%
Forest Products (5% of Sales)	Lumber & Wood Products	64.2	65.4	1.7%	33.2	32.3	(2.5%)	2.3	2.6	9.2%
	Pulp, Paper & Allied Products	47.1	47.7	1.4%	23.0	22.2	(3.5%)	2.0	1.7	(15.2%)
	Total Forest Products	111.3	113.1	1.6%	56.1	54.5	(2.9%)	4.3	4.2	(2.0%)
Energy & Specialized (11% of Sales)	Petroleum Products	115.5	106.4	(7.8%)	54.9	51.2	(6.6%)	5.1	4.6	(9.2%)
	Waste & Other Scrap	18.5	21.1	13.9%	9.2	10.6	15.2%	0.9	0.8	(3.6%)
	Total Energy & Specialized	134.0	127.5	(4.8%)	64.1	61.8	(3.5%)	6.0	5.5	(8.4%)
Automotive (10% of Sales)	Total Automotive	174.4	179.4	2.8%	82.6	88.6	7.2%	6.5	6.9	6.9%
TOTAL CARLOADS		2,075.8	2,206.0	6.3%	1,062.2	1,069.8	0.7%	87.3	85.2	(2.3%)
Intermodal (19% of Sales)	Containers	1,769.5	1,673.7	(5.4%)	905.9	841.4	(7.1%)	71.9	68.8	(4.4%)
	Trailers	81.2	81.1	(0.2%)	40.2	35.6	(11.4%)	3.0	2.8	(8.6%)
	TOTAL INTERMODAL	1,850.8	1,754.8	(5.2%)	946.0	877.0	(7.3%)	75.0	71.5	(4.5%)
TOTAL		3,926.6	3,960.8	0.9%	2,008.3	1,946.8	(3.1%)	162.2	156.8	(3.3%)

Figure 11: Union Pacific Quarterly Volume Growth and Associated YoY Comps



Source (all charts and tables): Union Pacific and Loop Capital Markets

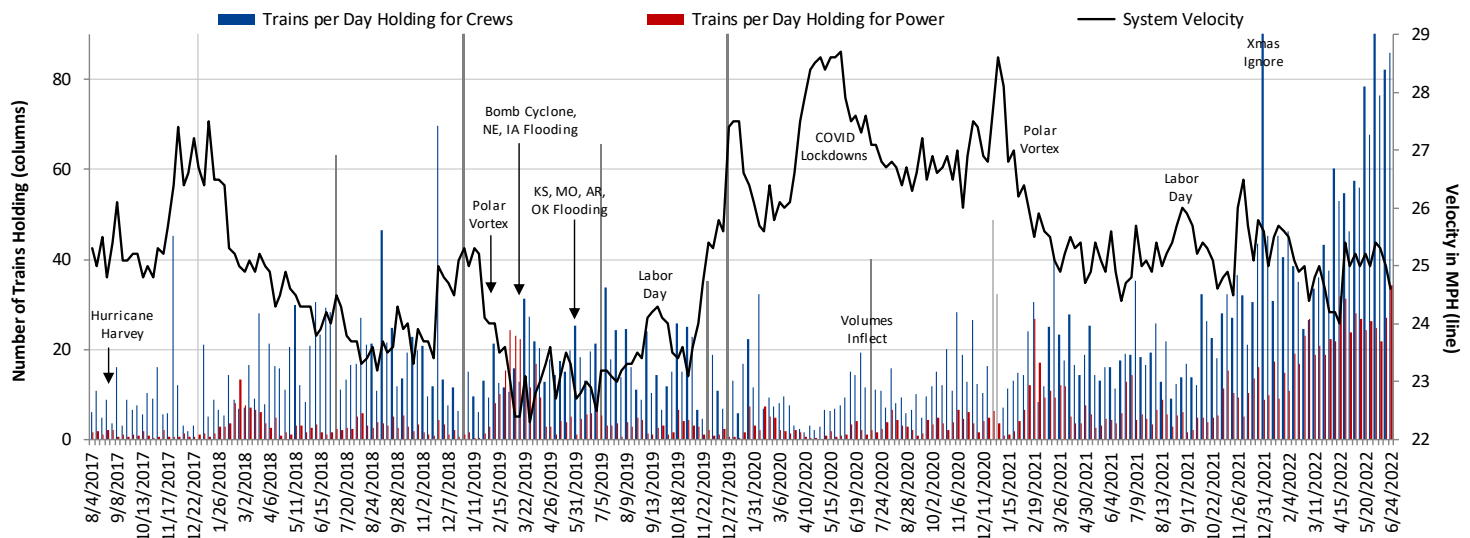


BNSF

BNSF's network velocity downticked for a third consecutive week, last week. Trains holding for crews and power both extremely elevated, at 86 and 34 per day, respectively. That power number is a new high.

Trains Holding and Speed

Figure 12: BNSF Velocity (higher is better) and Trains per Day Holding for Power and Crews (lower is better)

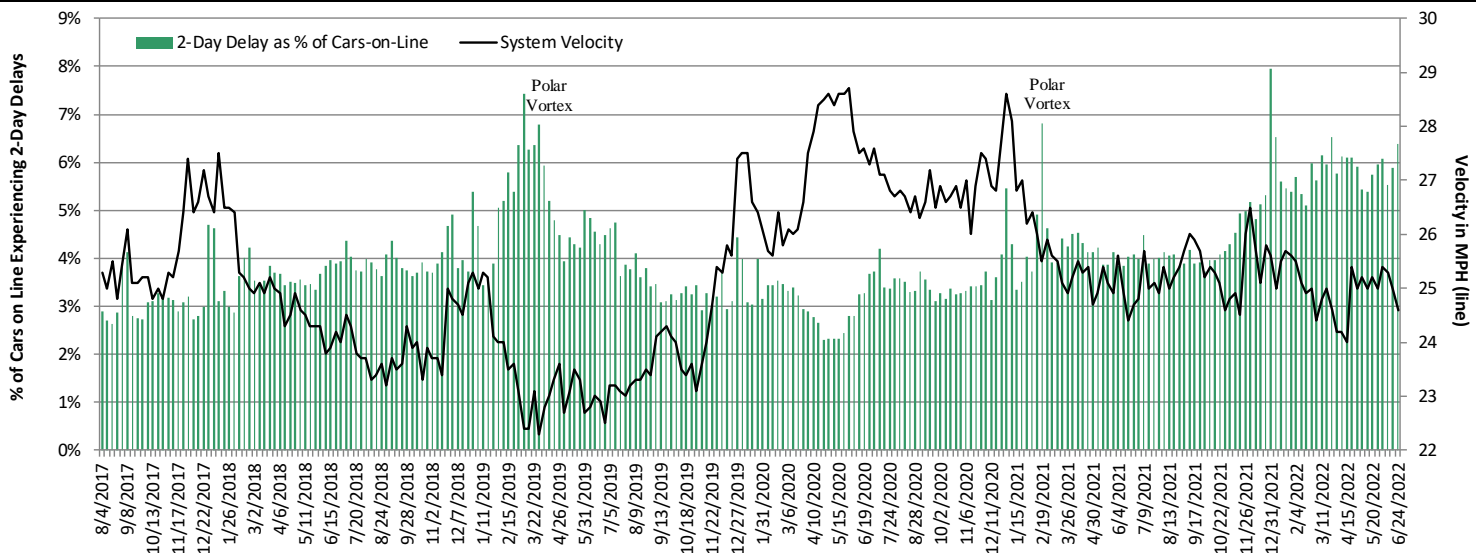


Source: BNSF and Loop Capital Markets. BNSF trains holding is based on a daily snapshot that counts the number of trains delayed as at a certain time every day.

2-Day Delays

Regressed to 6.4% of cars-on-line last week; the highest since mid-March (6.5%).

Figure 13: BNSF Velocity and the Percentage of Cars-on-Line that have not moved in 48-hours or more (lower is better)

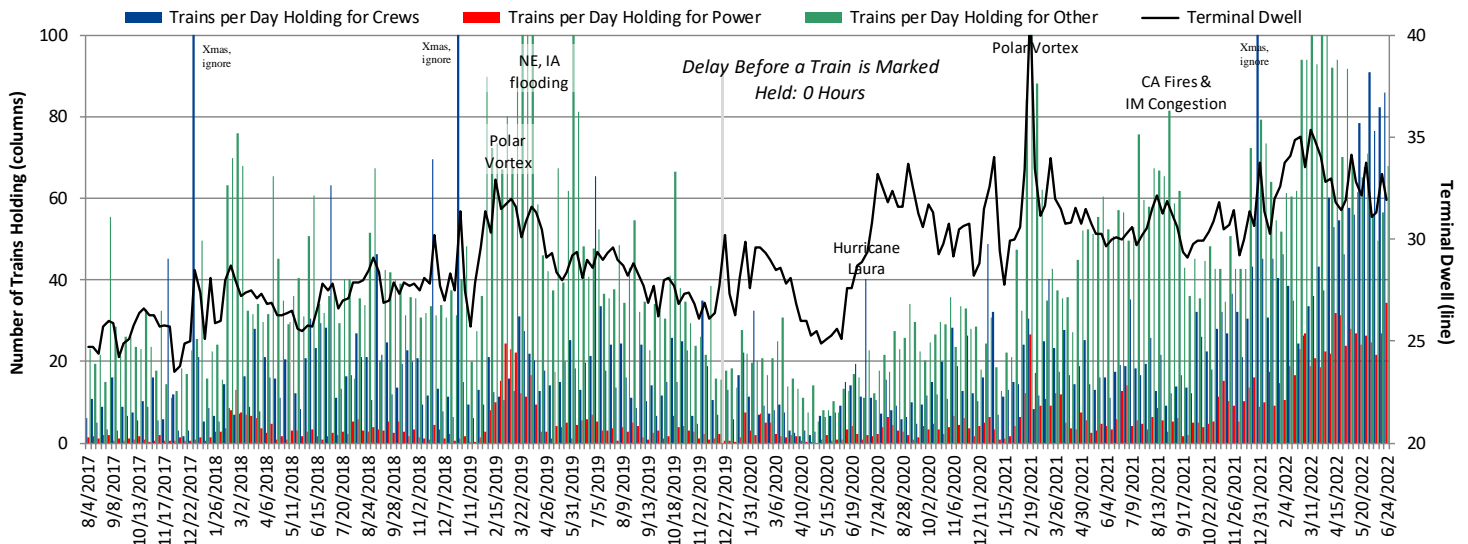


Source: BNSF and Loop Capital Markets

Trains Holding for Power, Crews, and 'Other'

Trains holding for 'other' also sequentially worse, from 57 to 68 per day. That's high, but not as bad as the March/April period.

Figure 14: BNSF Trains per Day Holding for Power, Crews and 'Other'

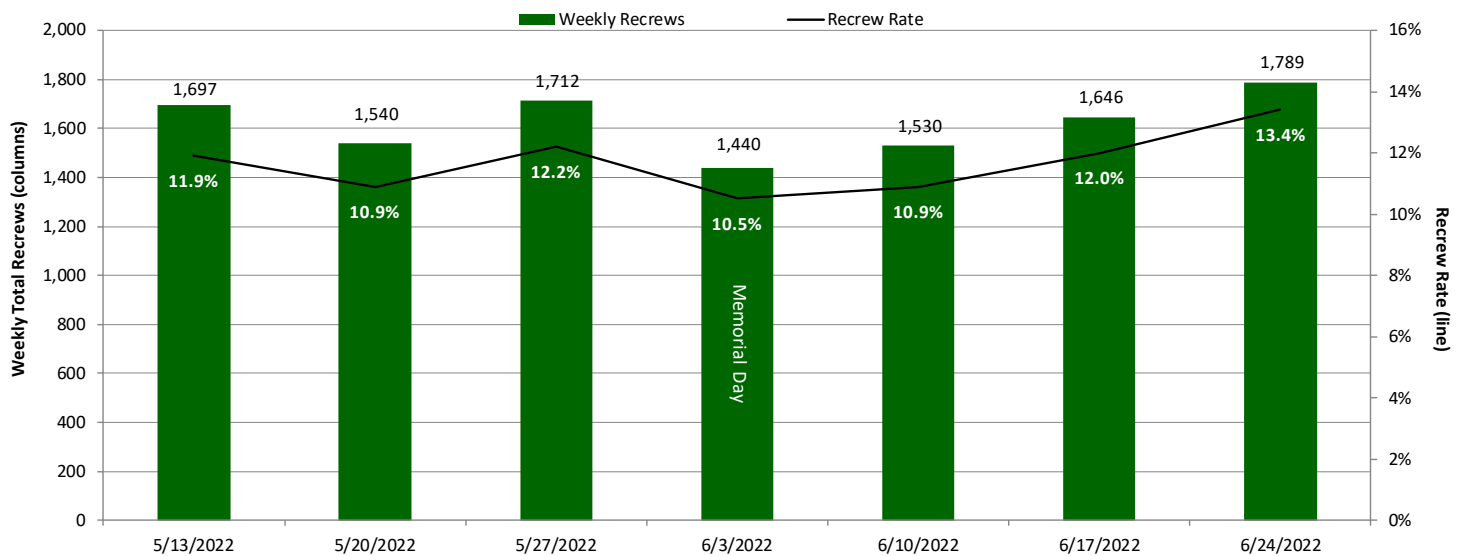


Source: BNSF and Loop Capital Markets. BNSF trains holding is based on a daily snapshot that counts the number of trains delayed as at a certain time every day.

Recrews

More cause for concern, with a new high number of recrews last week: 1,789 at a recrew rate of 13.4%.

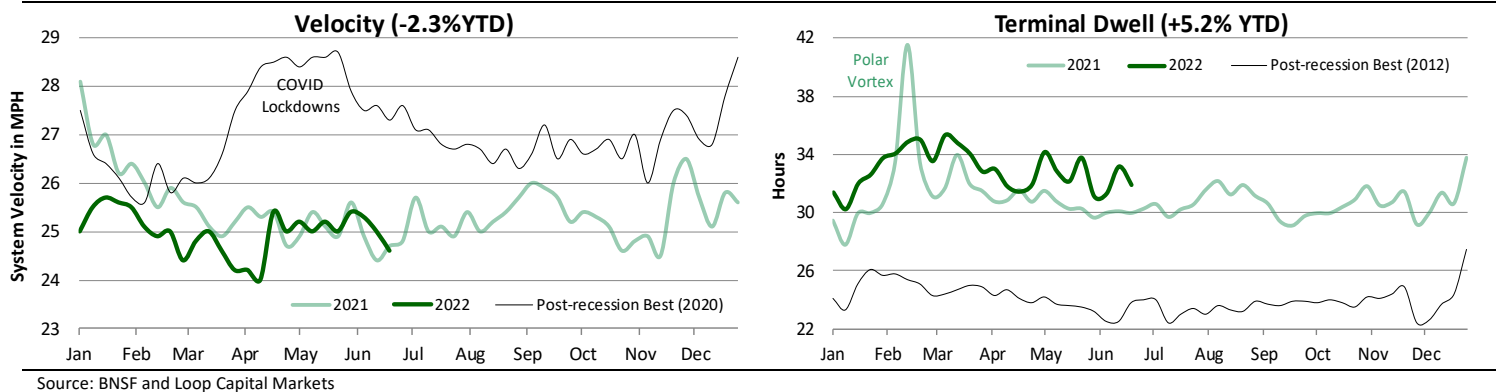
Figure 15: BNSF Weekly Recrews and Recrew Rate



Source: BNSF and Loop Capital. A recrew is an unanticipated crew change due to the original crew exhausting their legally allowable hours.

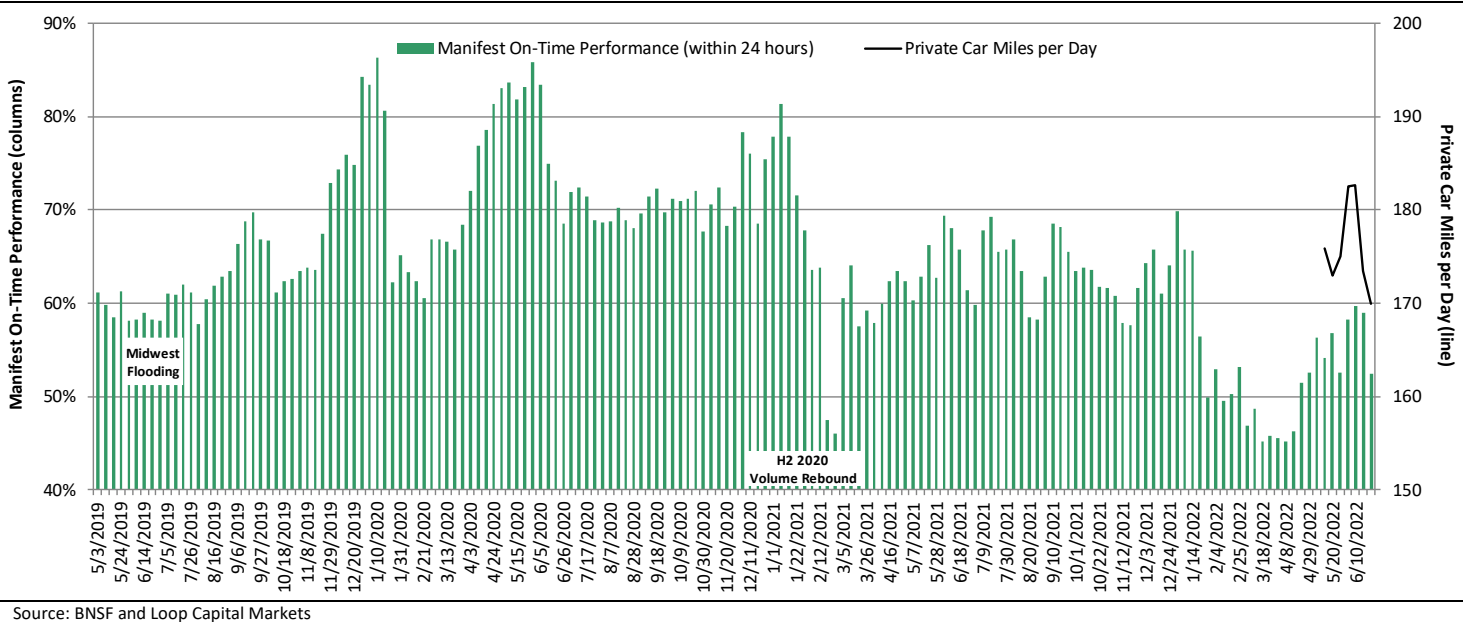
System Velocity and Terminal Dwell

Velocity could be worse given the state of the accompanying metrics. Dwell still oscillating around ~32.5 hours in recent weeks.

Figure 16: BNSF High Level Velocity and Terminal Dwell


Manifest Network On-Time Performance

A step back in on-time performance last week, from 59% to 52%. Private car miles also down a little, from 174 to 170 miles per day as BNSF turns customer assets slower.

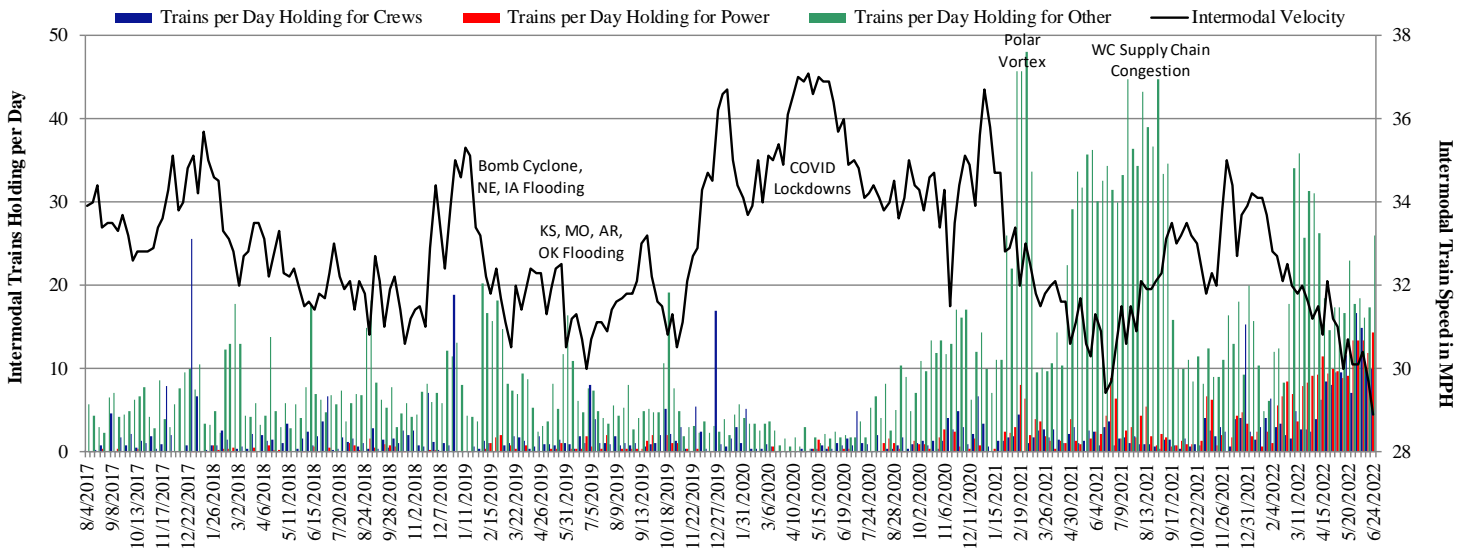
Figure 17: BNSF Manifest On-Time Performance and Car Miles Per Day


Intermodal Network Efficiency

Train Speed and Trains Holding

At this point intermodal is a 5-alarm fire for BN. Intermodal train speed hit a new low last week and on average 50 trains per day were held: 10 for crews, 14 for power, and 26 for all other reasons. On-time performance, defined as the percentage of containers and truck trailers that are deramped (lifted off the train) within 24-hours of the originally scheduled arrival time, fell from 61% to a new record low 57% last week.

Figure 18: BNSF Intermodal Average Train Speed and Trains Holding for Crews, Power & Other

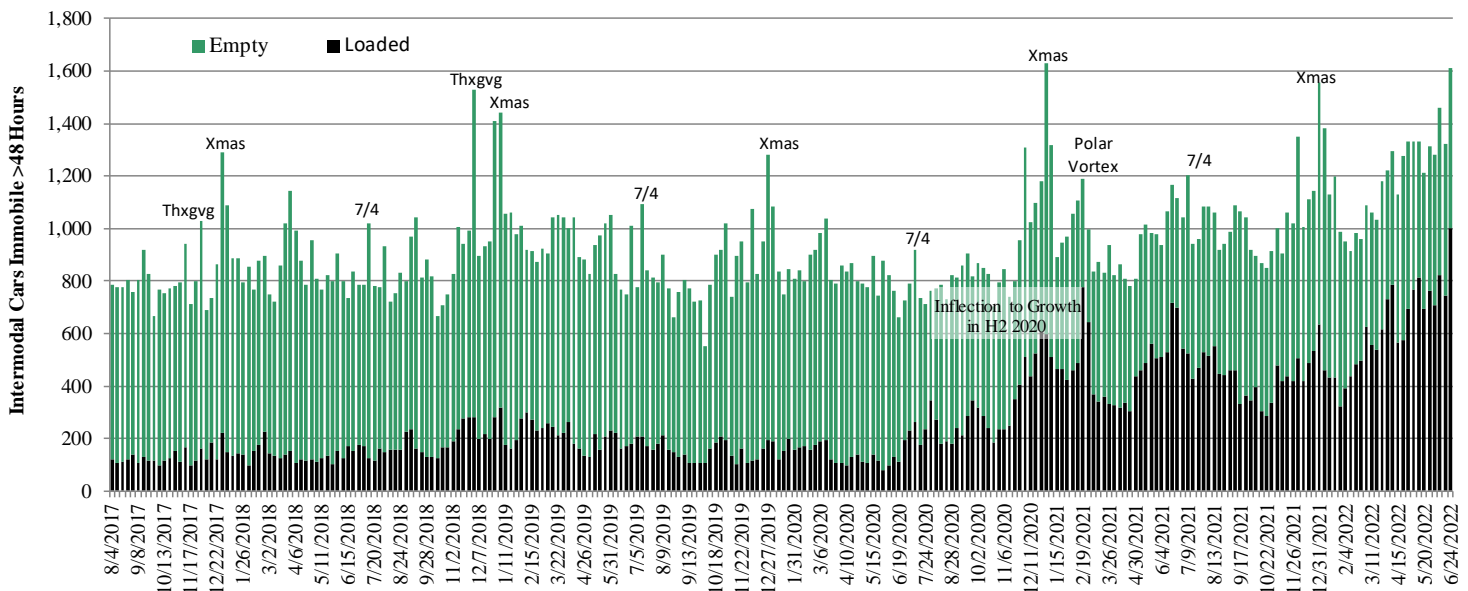


Source: BNSF and Loop Capital Markets

2-Day Delays

Another new high that we don't want to see: 1,001 loaded and 609 empty intermodal platforms were slow to move last week.

Figure 19: BNSF Intermodal Cars Immoblie for 48 Hours or More

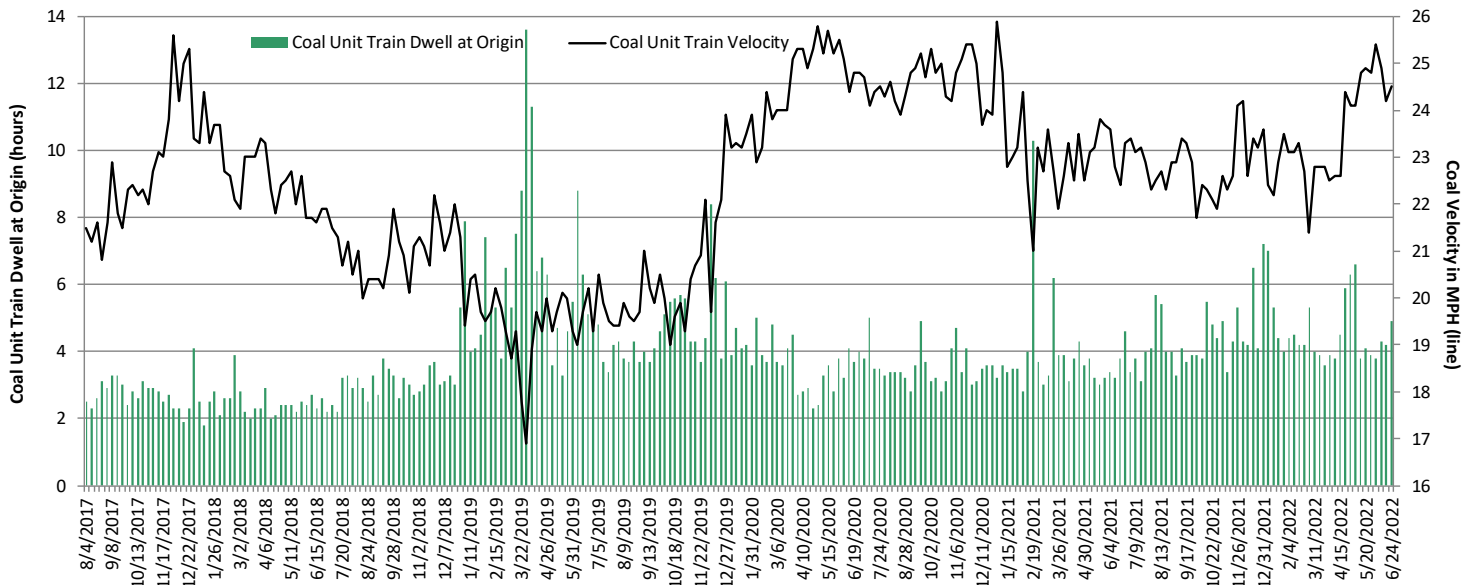


Source: BNSF and Loop Capital Markets

Coal Train Efficiency

Some good speed here and dwell times at origin in the normal range. Coal network on-time performance last week was 67%.

Figure 20: BNSF Coal Unit Train Dwell at Origin (lower is better) and Coal Unit Train Velocity (higher is better)

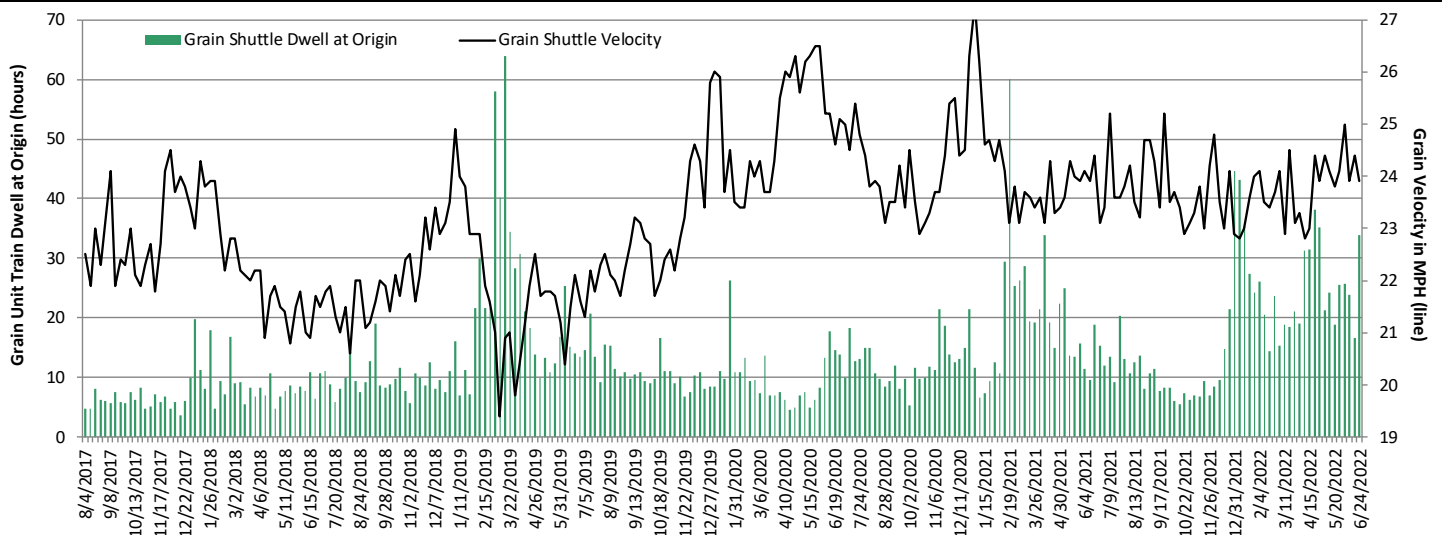


Source: BNSF and Loop Capital Markets

Grain Train Efficiency

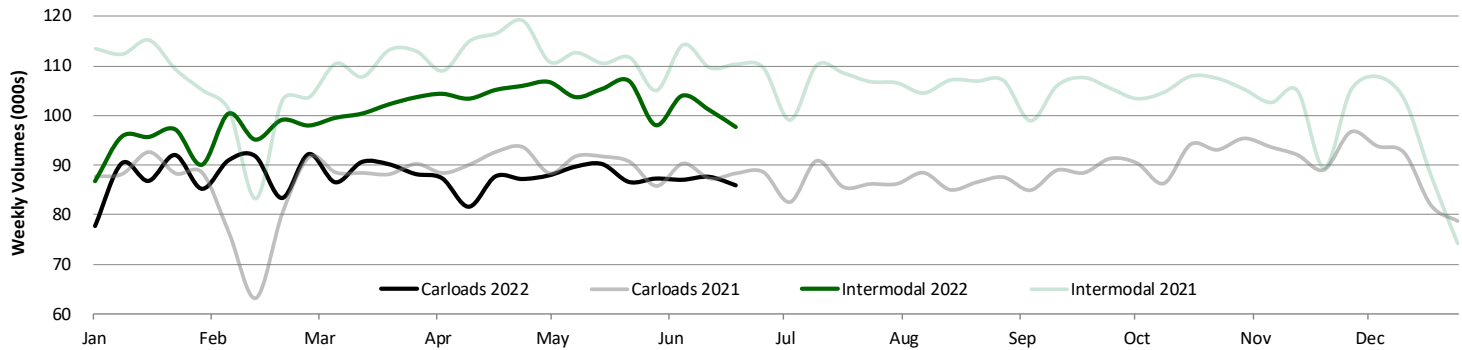
Grain train speed is back in its normal band but dwell at origin stepped up last week. On-time arrivals were 59%.

Figure 21: BNSF Grain Shuttle Train Dwell at Origin (lower is better) and Grain Shuttle Train Velocity (higher is better)



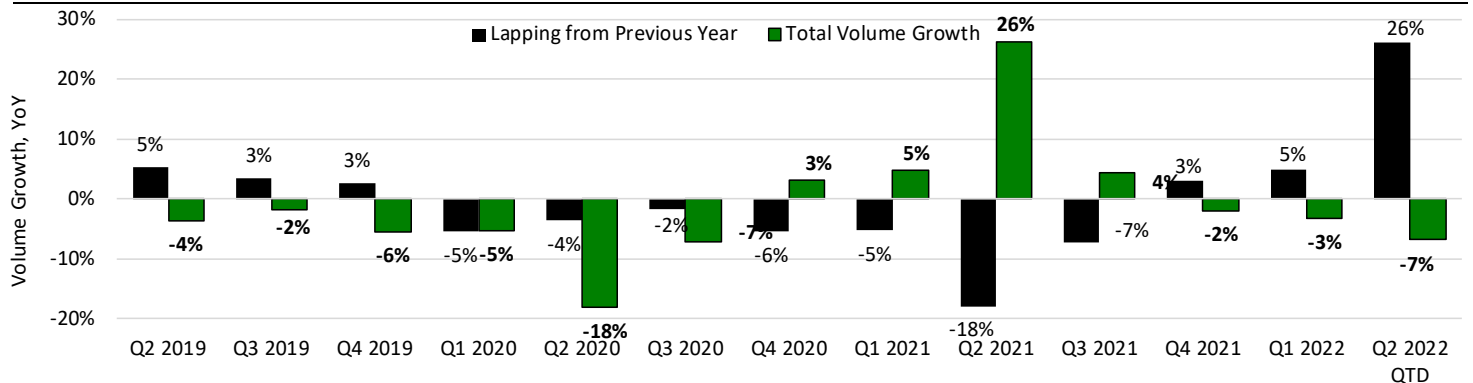
Source: BNSF and Loop Capital Markets

BNSF Volumes Through Week Ending 6/25/22



Reporting Segment	Commodity	Year-to-Date			Q2 Quarter-to-Date			Week Ending 6/25/22		
		2021	2022	Δ	2021	2022	Δ	2021	2022	Δ
Autos	Motor Vehicles & Equipment	109.7	111.2	1.4%	53.2	56.5	6.2%	4.2	5.0	18.8%
Industrial Products (26% of Sales)	Petroleum Products	151.2	131.4	(13.1%)	72.1	66.4	(7.9%)	5.6	5.4	(2.9%)
	Chemicals	226.8	239.0	5.4%	116.0	113.9	(1.8%)	8.7	9.4	7.9%
	Crushed Stone, Sand & Gravel	100.3	109.1	8.9%	56.8	55.9	(1.5%)	4.7	4.4	(6.3%)
	Metallic Ores	69.1	64.1	(7.3%)	33.4	28.2	(15.7%)	2.9	2.3	(20.4%)
	Stone, Clay, & Glass Products	61.4	60.4	(1.7%)	33.2	31.2	(6.2%)	2.6	2.4	(8.4%)
	Metals & Products	46.9	48.1	2.6%	25.2	22.4	(11.1%)	2.1	1.9	(8.7%)
	All Other Carloads	70.8	64.6	(8.8%)	37.0	30.6	(17.4%)	3.2	2.6	(18.5%)
	Lumber & Wood Products	44.3	43.5	(1.9%)	22.8	23.8	4.5%	1.9	1.7	(12.1%)
	Pulp, Paper, & Allied Products	34.2	33.6	(1.9%)	16.6	16.2	(2.5%)	1.4	1.2	(13.2%)
	Iron & Steel Scrap	22.5	23.1	2.6%	10.9	12.5	14.5%	0.9	0.9	(5.9%)
	Coke	11.7	12.0	3.0%	5.9	5.7	(3.4%)	0.5	0.6	1.8%
	Nonmetallic Minerals	10.9	11.6	6.8%	5.6	5.7	0.4%	0.4	0.5	5.7%
	Waste & Other Scrap	10.3	11.9	16.2%	5.6	6.2	11.3%	0.4	0.6	31.3%
	Primary Forest Products	1.2	1.2	2.4%	0.7	0.6	(7.2%)	0.1	0.0	(31.1%)
	Total Industrial	861.5	853.6	(0.9%)	441.9	419.4	(5.1%)	35.5	33.8	(4.7%)
Coal (18% of Sales)	Coal	703.1	741.4	5.4%	367.1	354.5	(3.4%)	29.9	28.5	(4.7%)
Agricultural (21% of Sales)	Grain	327.8	298.5	(8.9%)	158.4	143.6	(9.3%)	10.7	10.8	0.9%
	Grain Mill Products	109.0	106.0	(2.8%)	54.1	52.2	(3.4%)	4.8	4.1	(15.2%)
	Food & Kindred Products	74.8	81.6	9.2%	35.5	39.9	12.4%	2.8	3.3	16.5%
	Farm Products, Ex-Grain	14.0	11.4	(18.6%)	6.9	5.4	(22.6%)	0.4	0.4	21.0%
	Total Agricultural	525.5	497.5	(5.3%)	254.8	241.0	(5.4%)	18.7	18.6	(0.5%)
	TOTAL CARLOADS	2,199.9	2,203.7	0.2%	1,117.1	1,071.4	(4.1%)	88.3	85.9	(2.7%)
Intermodal (35% of Sales)	Containers	2,448.2	2,293.0	(6.3%)	1,245.2	1,172.3	(5.9%)	99.5	89.7	(9.8%)
	Trailers	298.0	223.8	(24.9%)	148.6	99.6	(33.0%)	10.9	7.9	(26.9%)
	TOTAL INTERMODAL	2,746.2	2,516.7	(8.4%)	1,393.8	1,271.9	(8.7%)	110.4	97.7	(11.5%)
	TOTAL	4,946.1	4,720.4	(4.6%)	2,510.9	2,343.3	(6.7%)	198.6	183.6	(7.6%)

Figure 22: BNSF Quarterly Volume Growth and Associated YoY Comps



Source (all charts and tables): BNSF and Loop Capital Markets

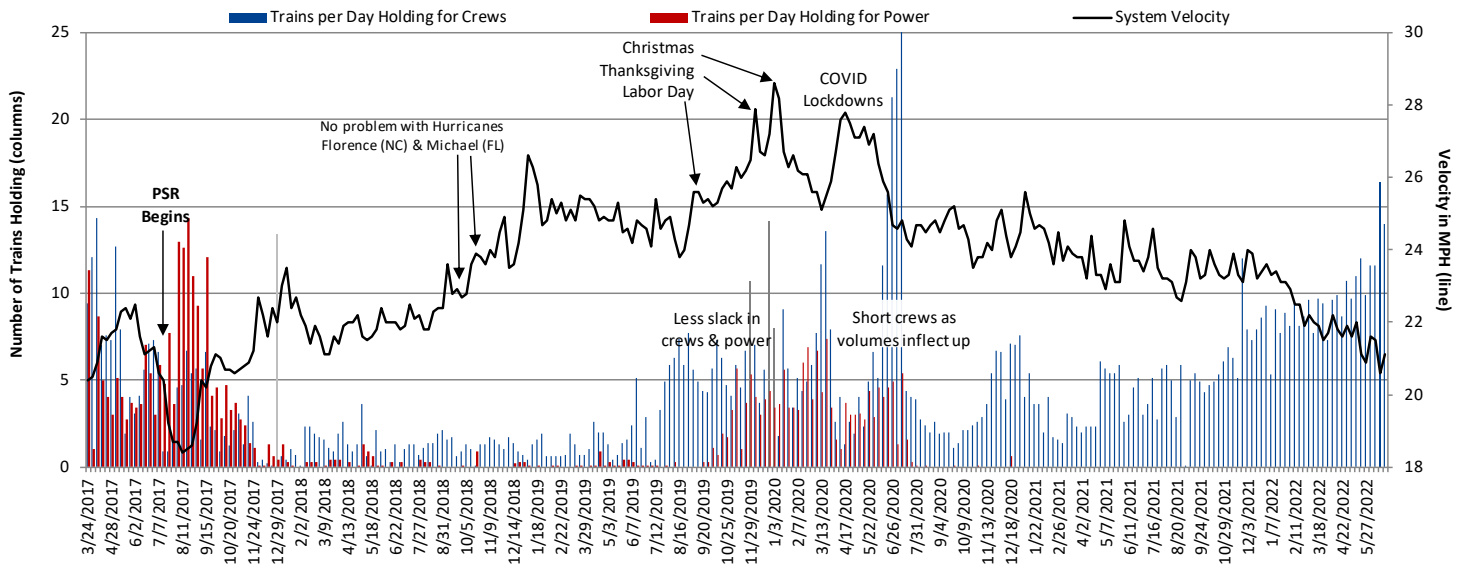


CSX

Network velocity thankfully upticked off its low last week and trains holding for crews also retreated a little sequentially, from 16 to 14 per day. Both remain poor in absolute terms, however. The only good news in the chart is that CSX continues to be successful in preventing its crew problem from also triggering a power problem (due to slow cycle times).

Trains Holding

Figure 23: CSX Velocity (higher is better) and Trains per Day Holding for Power and Crews (lower is better)

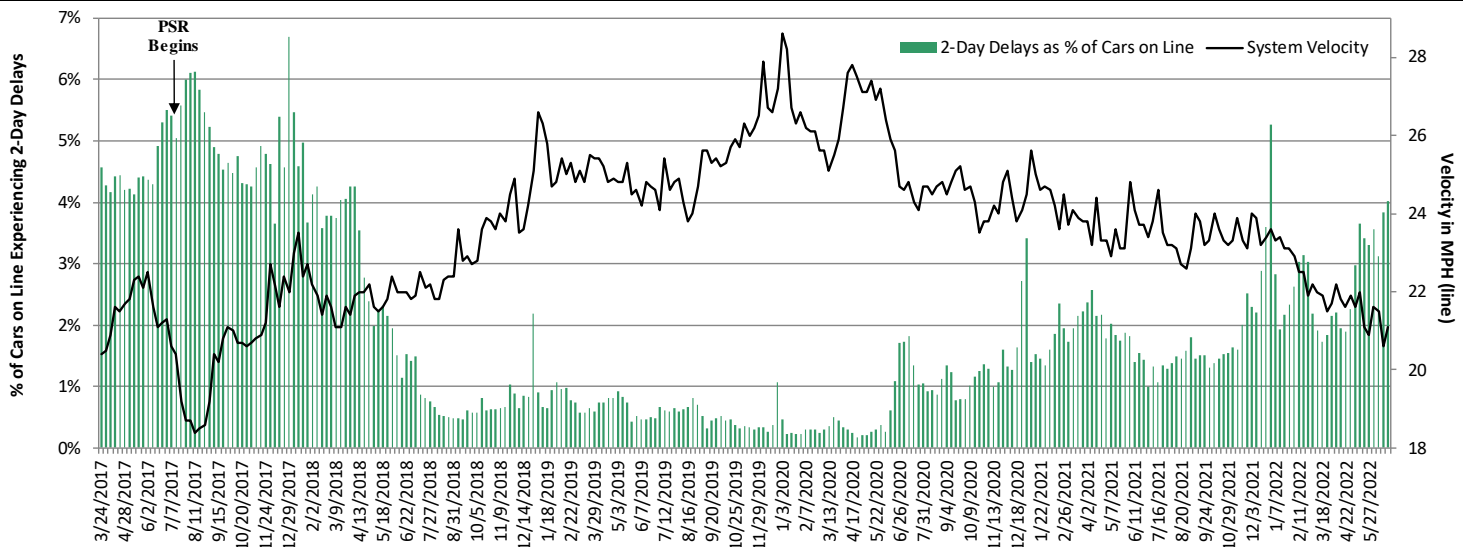


Source: CSX and Loop Capital. CSX trains holding is based on a daily snapshot that counts the number of trains delayed as at 3:30 AM every day (which genius came up with 3:30 AM?)

2-Day Delays

No inflection here, with cars sitting idle for 48-hours or more increasingly from 3.8% to 4.0% of cars-on-line last week.

Figure 24: CSX Velocity and the Percentage of Cars-on-Line that have not moved in 48-hours or more (lower is better)

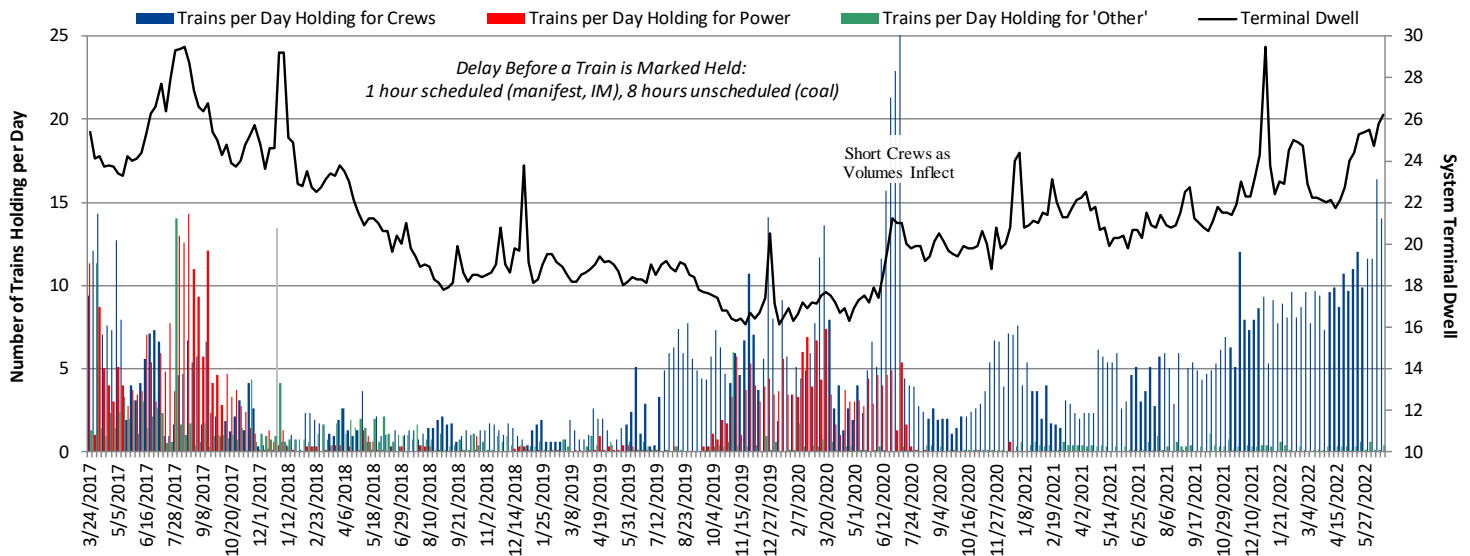


Source: CSX and Loop Capital Markets

Trains Holding for Power, Crews, and 'Other'

Terminal dwell also refusing to inflect and moving to another multi-year high last week (again ignore the Xmas 2021 spike).

Figure 25: CSX Trains per Day Holding for Power, Crews and 'Other'



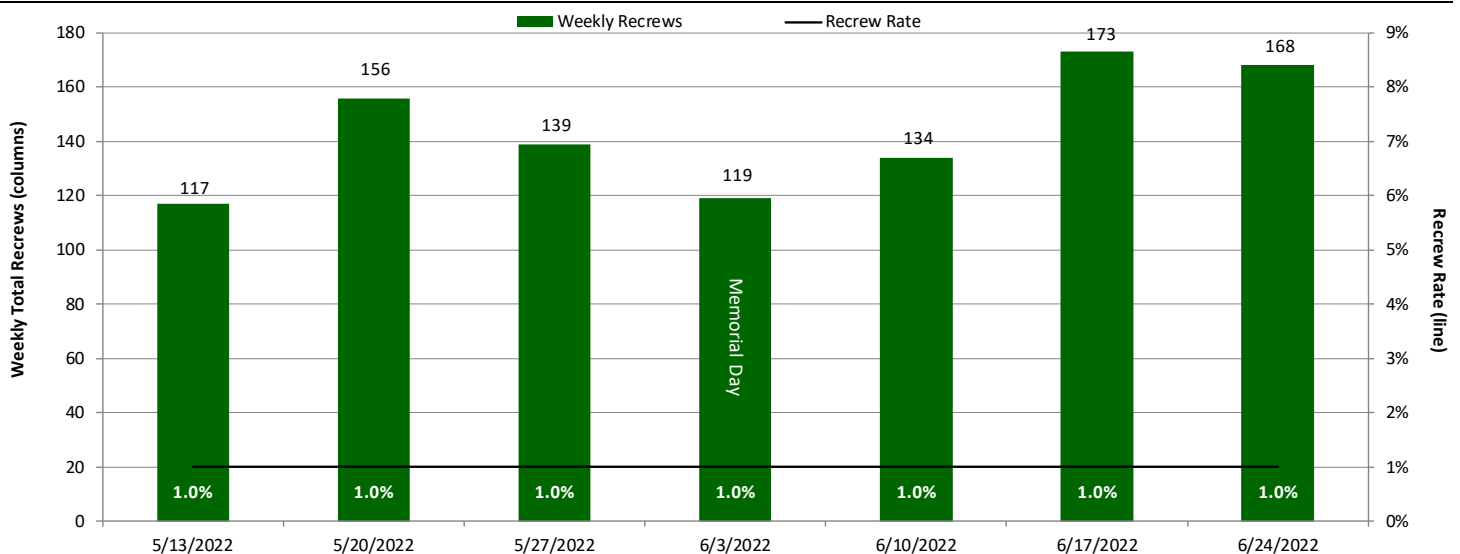
Source: CSX and Loop Capital Markets. CSX trains holding is based on a daily snapshot that counts the number of trains delayed as at 3:30 AM every day.

Recrews

Recrews running around 170 over the last two weeks.

Ignore the recrew rate, which is based on an unusual CSX formula that renders it immaterially small and not insightful (aka useless).

Figure 26: CSX Weekly Recrews and Recrew Rate

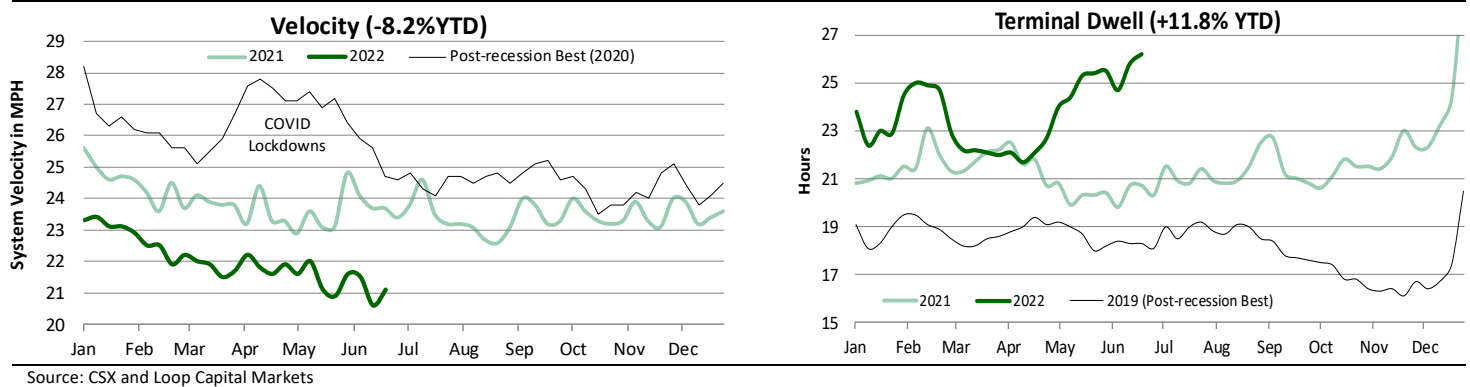


Source: CSX and Loop Capital. A recrew is an unanticipated crew change due to the original crew exhausting their legally allowable hours.

System Velocity and Terminal Dwell

Dwell is off more than velocity, YoY, at this point (12% vs. 8%).

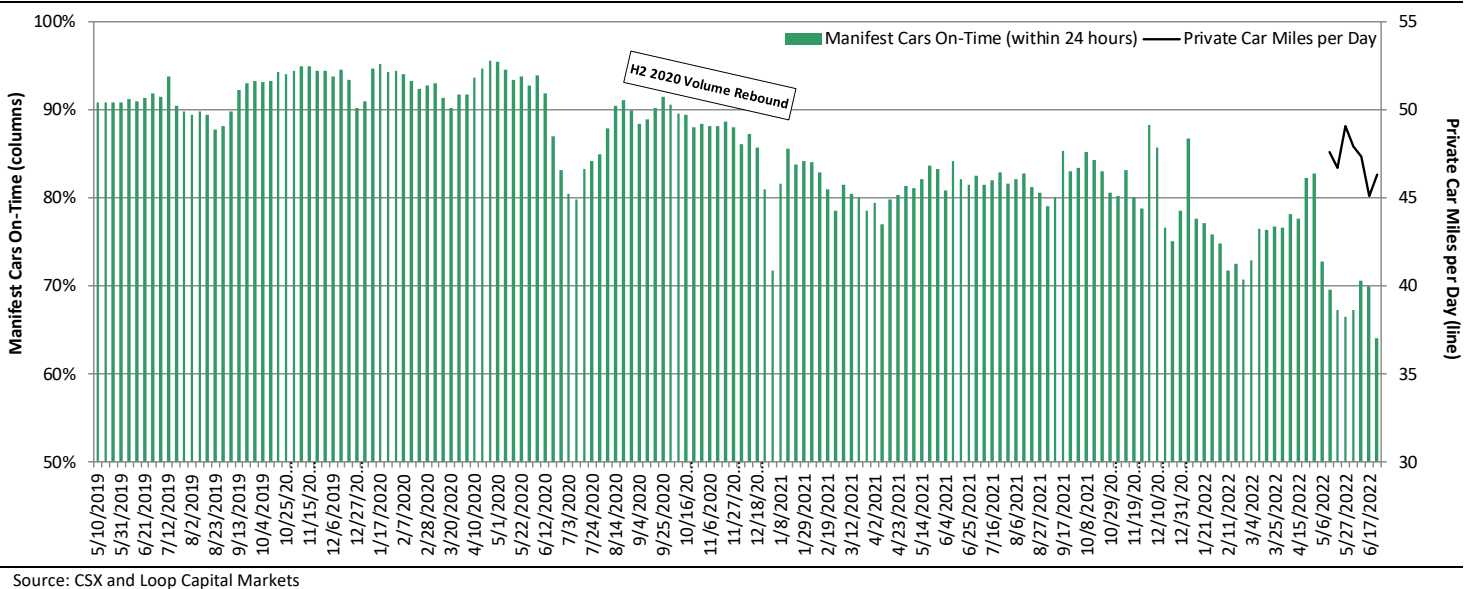
Figure 27: CSX High Level Velocity and Terminal Dwell



Manifest Network On-Time Performance

Last week CSX's manifest network hit a new low of 64% on-time to within 24-hours, down from 70% the prior week. Private car miles per day relatively stable at 46 miles.

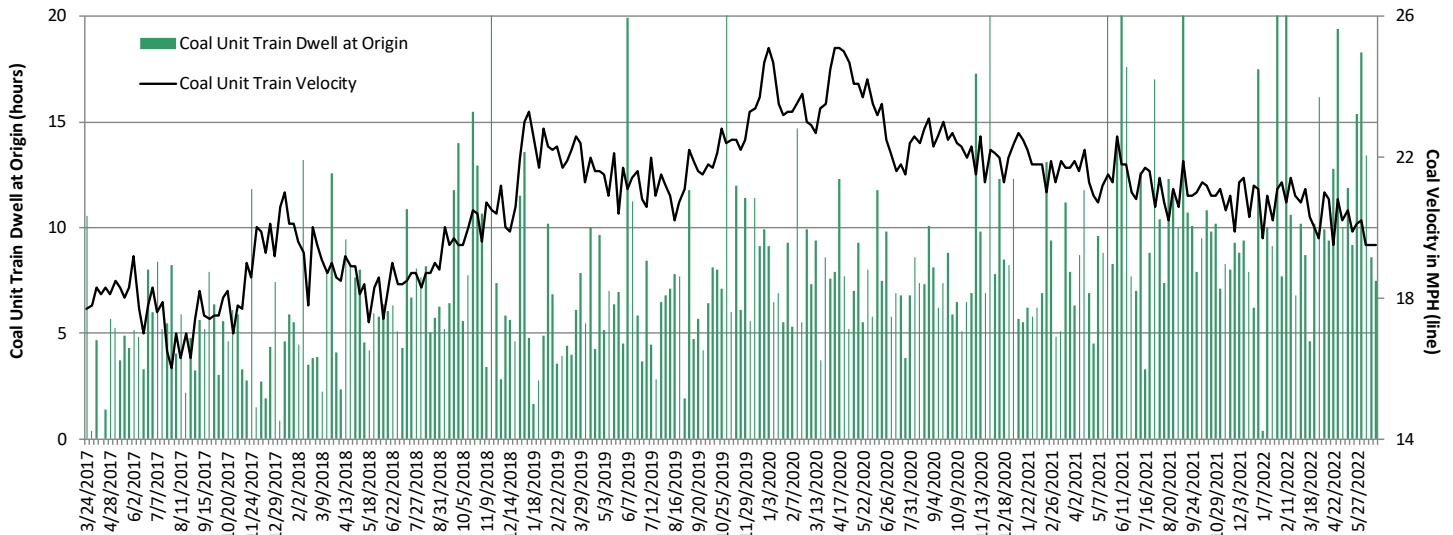
Figure 28: CSX Manifest Network On-Time Performance and Car Miles Per Day



Coal Train Efficiency

Typically, extremely volatile dwell at origin for CSX's coal trains; train speed much more stable but has experienced a slow fade in recent months. 93% of coal trains on-time last week, down 1% sequentially.

Figure 29: CSX Coal Unit Train Dwell at Origin (lower is better) and Coal Unit Train Velocity (higher is better)

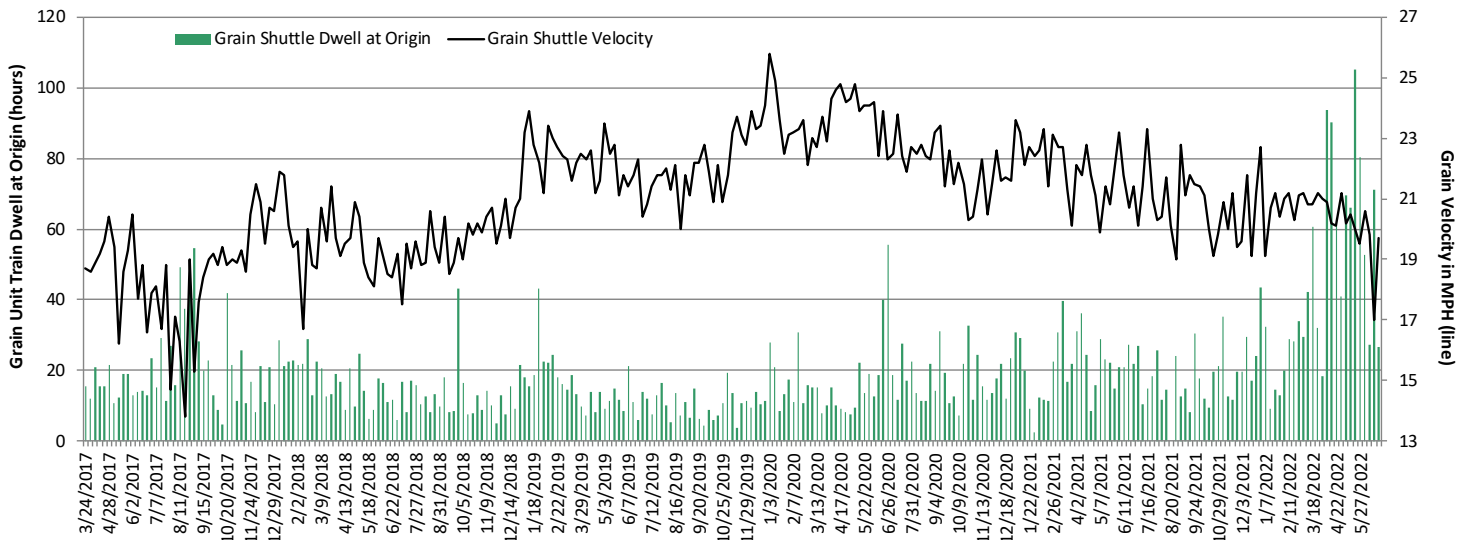


Source: CSX and Loop Capital Markets

Grain Train Efficiency

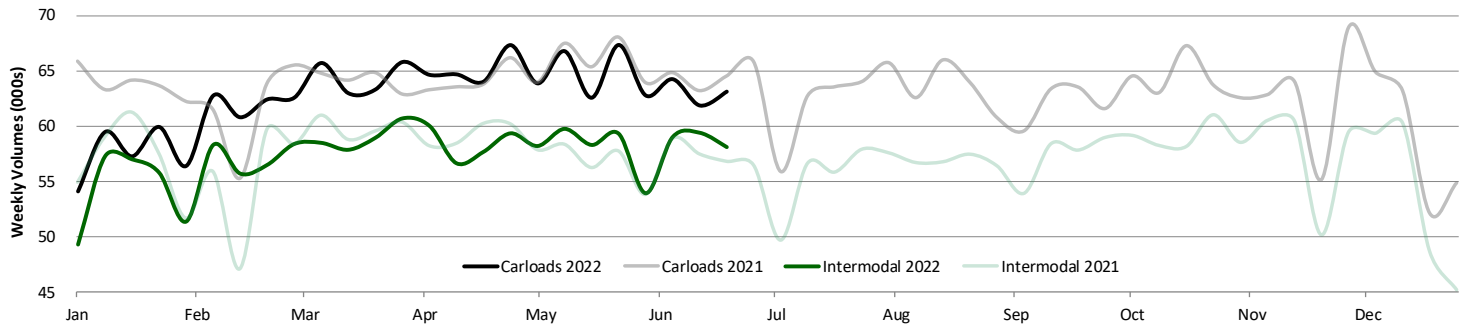
A rebound in grain train velocity last week and improved dwell at origin, however on-time performance dropped from 83% to 75% in sequential weeks.

Figure 30: CSX Grain Shuttle Train Dwell at Origin (lower is better) and Grain Shuttle Train Velocity (higher is better)



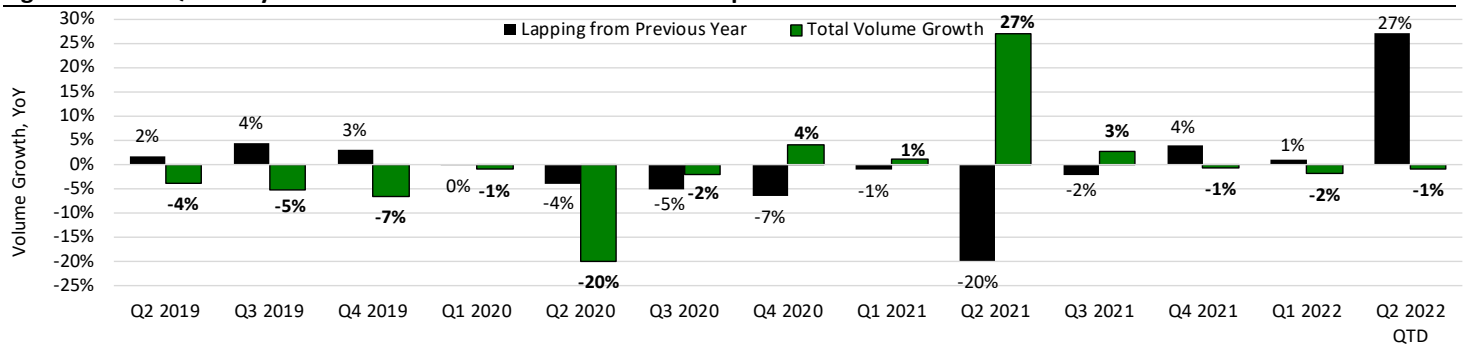
Source: CSX and Loop Capital Markets

CSX Volumes Through Week Ending 6/25/22



Reporting Segment	Commodity	Year-to-Date			Q2 Quarter-to-Date			Week Ending 6/25/22		
		2021	2022	Δ	2021	2022	Δ	2021	2022	Δ
Coal (17% of Sales)	Coal	318.0	298.7	(6.1%)	159.5	155.5	(2.5%)	13.3	12.3	(7.3%)
	Metallic Ores	16.2	15.0	(7.6%)	9.1	9.3	1.7%	0.8	0.7	(5.6%)
	Coke	28.4	27.5	(3.1%)	13.2	12.8	(3.1%)	1.0	1.1	5.3%
	Total Coal	362.6	341.2	(5.9%)	181.9	177.6	(2.3%)	15.1	14.1	(6.3%)
Chemicals (20% of Sales)	Chemicals	263.9	266.1	0.9%	132.4	130.0	(1.9%)	10.0	10.3	2.4%
	Petroleum Products	66.1	56.3	(14.8%)	29.2	26.7	(8.5%)	2.5	1.9	(24.1%)
	Total Chemicals	330.0	322.5	(2.3%)	161.6	156.7	(3.1%)	12.5	12.2	(2.9%)
Automotive (10% of Sales)	Motor Vehicles & Equipment	161.0	159.3	(1.0%)	74.5	80.6	8.2%	6.3	6.3	0.8%
Agricultural (10% of Sales)	Grain	74.4	73.1	(1.7%)	35.2	35.7	1.4%	2.9	2.8	(2.2%)
	Grain Mill Products	54.3	55.5	2.2%	27.2	26.3	(3.4%)	2.1	2.2	3.3%
	Total Agricultural	128.7	128.6	(0.0%)	62.4	62.0	(0.6%)	5.0	5.0	0.1%
Forest Products (7% of Sales)	Pulp, Paper & Allied Products	75.9	75.9	0.0%	37.7	37.5	(0.4%)	3.0	2.8	(4.0%)
	Lumber & Wood Products	31.5	29.8	(5.6%)	16.2	15.2	(6.2%)	1.2	1.2	3.1%
	Primary Forest Products	15.4	15.1	(1.4%)	7.4	7.5	0.3%	0.8	0.7	(2.7%)
	Total Forest Products	122.8	120.8	(1.6%)	61.3	60.2	(1.8%)	4.9	4.8	(2.1%)
Metals (4% of Sales)	Metals & Products	78.6	71.2	(9.4%)	39.7	34.3	(13.6%)	3.4	2.7	(18.7%)
	Iron & Steel Scrap	33.6	35.4	5.3%	16.6	17.6	6.2%	1.4	1.4	5.0%
	Total Metals	112.2	106.6	(5.0%)	56.3	51.9	(7.7%)	4.7	4.2	(11.9%)
Phosphates & Fertilizers (4% of Sales)	Non-metallic Minerals	66.1	63.8	(3.4%)	33.9	29.5	(12.9%)	2.8	2.7	(3.9%)
Minerals (5% of Sales)	Crushed Stone, Sand, & Gravel	108.1	116.3	7.6%	60.1	63.6	5.7%	4.6	5.2	12.4%
	Stone, Clay, & Glass Products	63.8	62.3	(2.4%)	34.1	32.2	(5.8%)	2.7	2.6	(3.8%)
	Total Minerals	171.9	178.7	3.9%	94.3	95.7	1.5%	7.3	7.8	6.5%
Waste & Equipment (3% of Sales)	Municipal Waste & Other Scrap	65.8	65.6	(0.3%)	34.6	33.6	(2.8%)	2.8	2.7	(3.3%)
	All Other Carloads	26.4	26.6	0.6%	13.5	14.1	4.3%	1.0	1.1	5.9%
	Total Waste & Equipment	92.2	92.2	(0.0%)	48.1	47.7	(0.8%)	3.8	3.7	(0.9%)
Food & Consumer (2% of Sales)	Food & Kindred Products	54.7	57.0	4.1%	28.2	28.4	0.6%	2.0	2.2	10.7%
	Farm Products Ex. Grain	4.1	3.6	(13.1%)	2.0	1.6	(21.1%)	0.1	0.1	(15.8%)
	Total Food & Consumer	58.8	60.5	2.9%	30.2	29.9	(0.8%)	2.1	2.3	9.1%
TOTAL CARLOADS		1,606.3	1,574.3	(2.0%)	804.5	792.0	(1.6%)	64.5	63.1	(2.2%)
Intermodal (15% of Sales)	Containers	1,387.9	1,396.1	0.6%	692.9	696.6	0.5%	54.7	56.6	3.5%
	Trailers	55.4	45.1	(18.6%)	27.5	20.1	(26.8%)	2.1	1.5	(29.4%)
	TOTAL INTERMODAL	1,443.3	1,441.2	(0.1%)	720.4	716.7	(0.5%)	56.8	58.1	2.3%
TOTAL		3,049.6	3,015.5	(1.1%)	1,524.9	1,508.7	(1.1%)	121.3	121.2	(0.1%)

Figure 31: CSX Quarterly Volume Growth and Associated YoY Comps



Source (all charts and tables): CSX and Loop Capital Markets

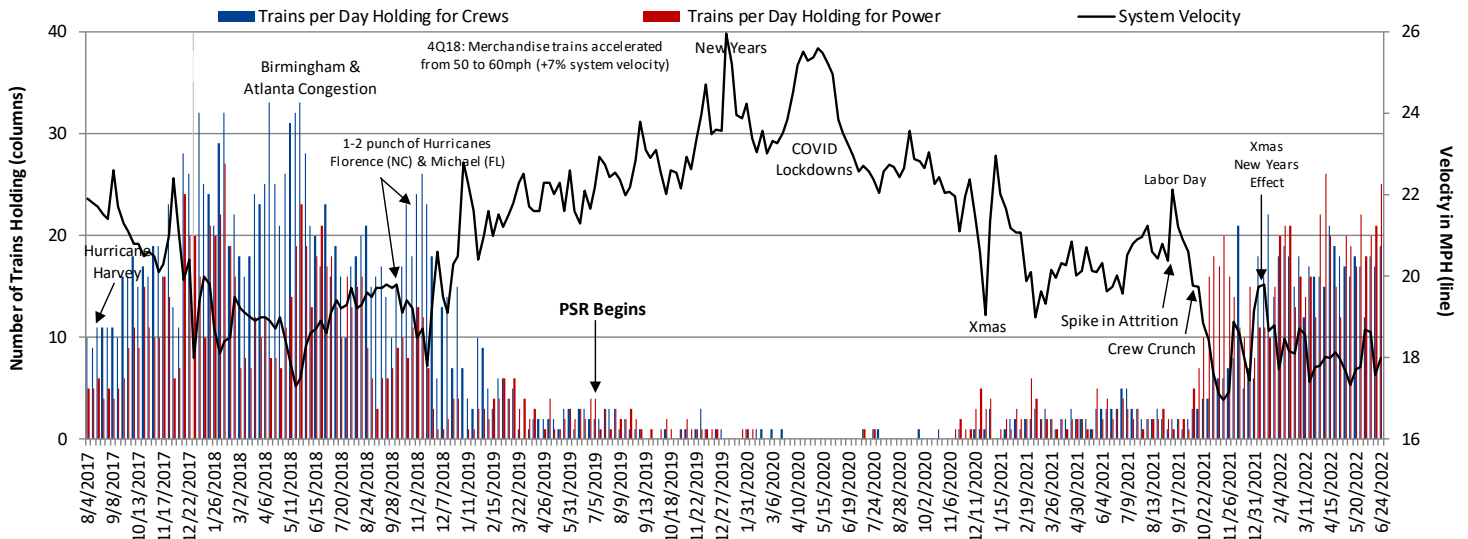


Norfolk Southern

Network velocity upticked from 17.6 to 18.0 mph last week. However, trains holding for crews and power both a little worse sequentially, with crews held 17->19 and power held 21->25.

Trains Holding

Figure 32: Norfolk Southern Velocity (higher is better) and Trains per Day Holding for Power and Crews (lower is better)

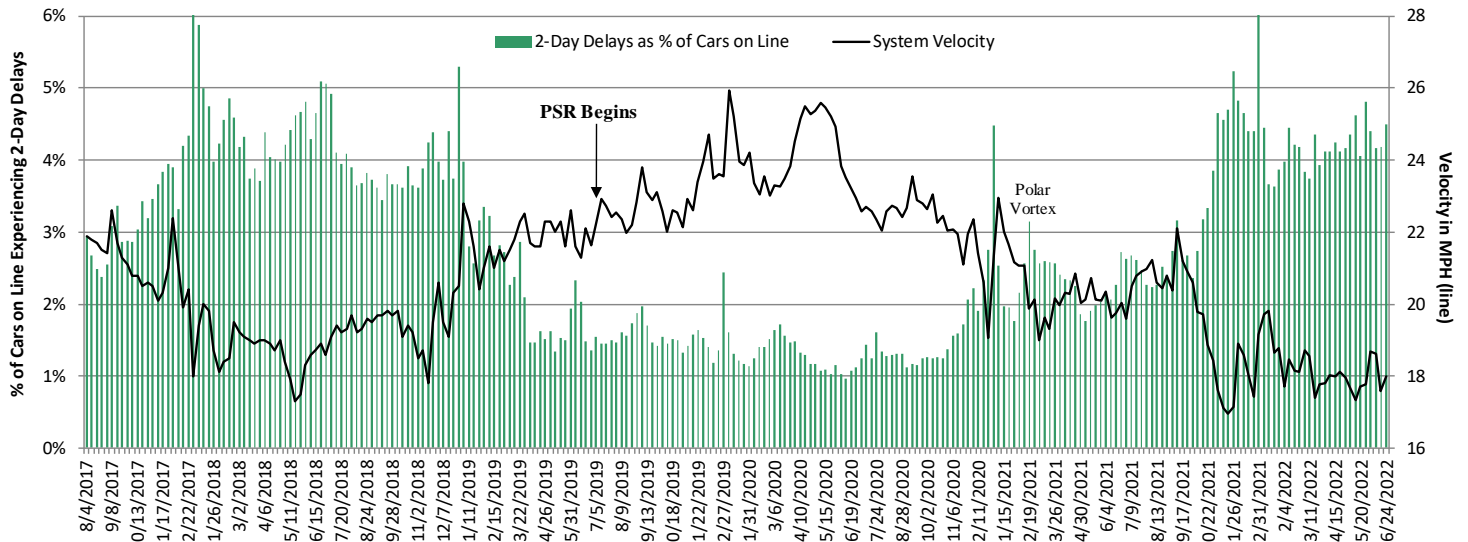


Source: Norfolk Southern and Loop Capital Markets. NS trains holding is based on a daily snapshot that counts the number of trains delayed as at 6 AM every day.

2-Day Delays

A backstep here with 4.5% of cars-on-line slow to move last week vs. 4.2% the prior week.

Figure 33: Norfolk Southern Velocity and the Percentage of Cars-on-Line that have not moved in 48-hours or more (lower is better)

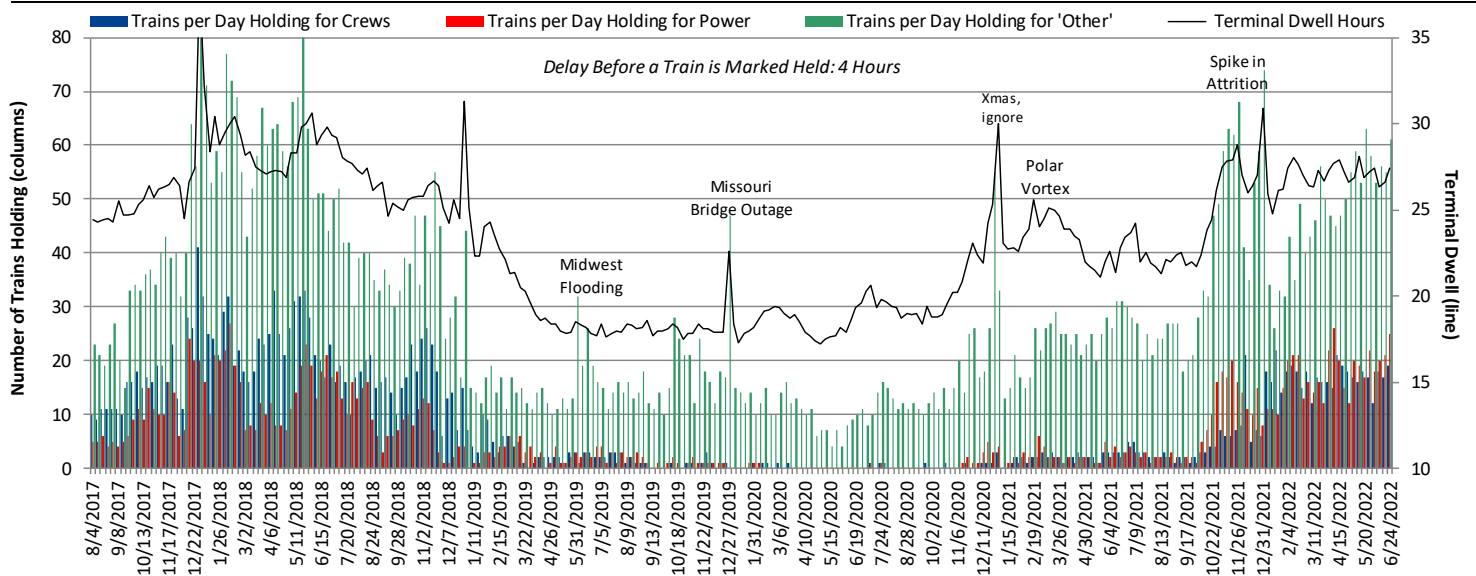


Source: Norfolk Southern and Loop Capital Markets

Trains Holding for Power, Crews, and 'Other'

A similar unwanted uptick here, with trains holding for all reasons other than crews and power up from 55 to 61 per day in sequential weeks. Terminal dwell has been elevated and rangebound now since late October last year.

Figure 34: Norfolk Southern Trains per Day Holding for Power, Crews and 'Other'

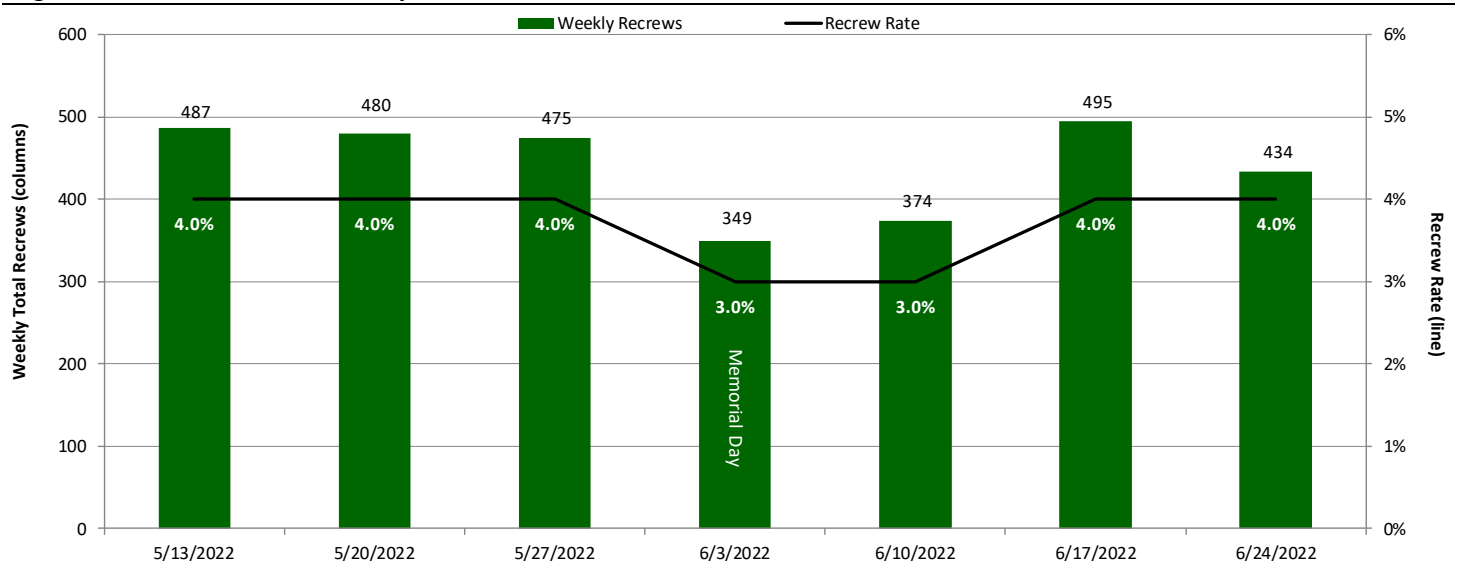


Source: Norfolk Southern and Loop Capital Markets. NS trains holding is based on a daily snapshot that counts the number of trains delayed as at 6 AM every day.

Recrews

We saw fewer recrews last week compared to four of the prior six weeks and we'll take it. We're not yet sure how NS is calculating its recrew rate, but like CSX it doesn't appear particularly insightful.

Figure 35: Norfolk Southern Weekly Recrews and Recrew Rate

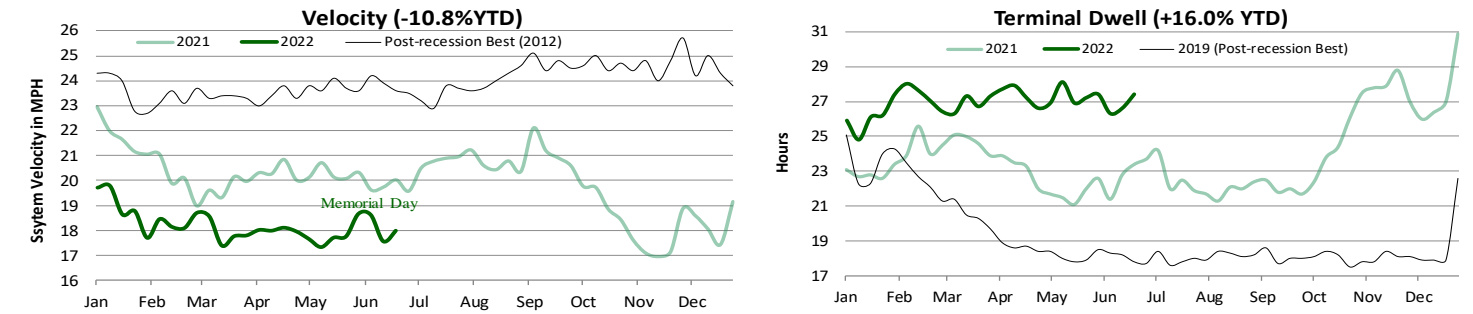


Source: Norfolk Southern and Loop Capital. A recrew is an unanticipated crew change due to the original crew exhausting their legally allowable hours.

System Velocity and Terminal Dwell

You can see the recent Memorial Day bump in speed has now been given back. Dwell still rangebound.

Figure 36: Norfolk Southern Velocity and Terminal Dwell



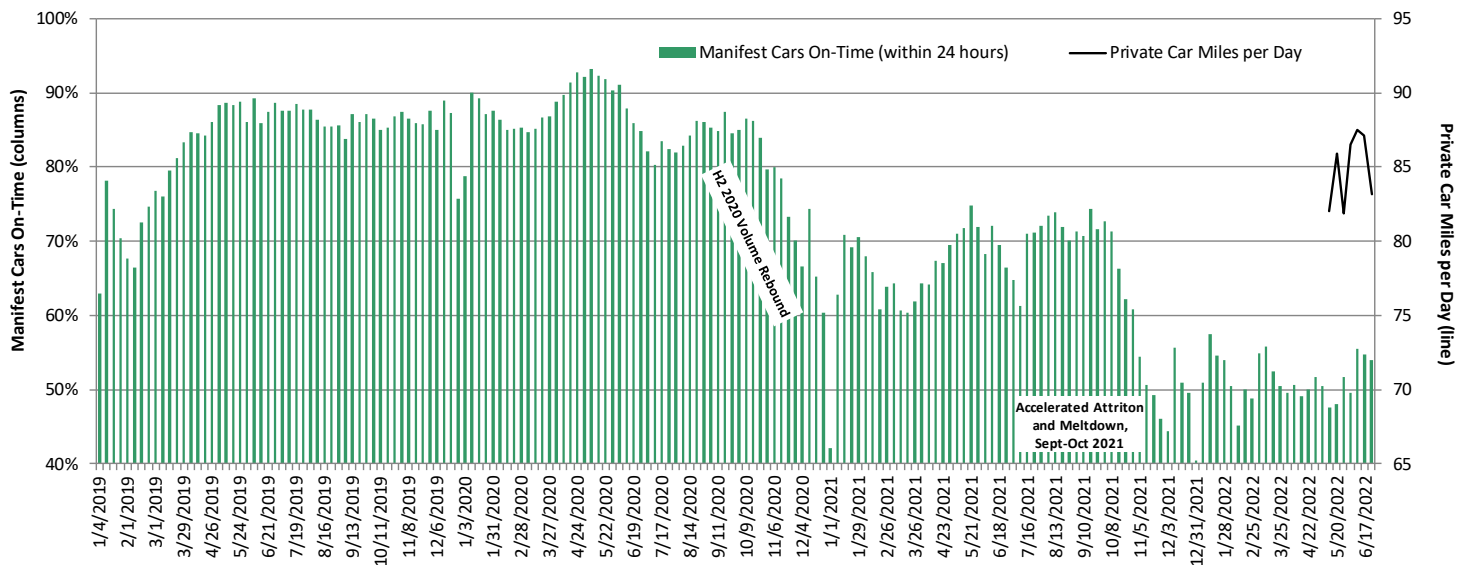
Source: Norfolk Southern and Loop Capital Markets

Manifest Network On-Time Performance

Above the psychologically critical 50% mark for the last three weeks and coming in at a (still disastrous) 54% last week. Private car miles per day fell from 87 to 83 sequentially.

Manifest service represents about 55% of NS's average daily train starts.

Figure 37: Norfolk Southern Manifest Network On-Time Performance and Car Miles Per Day



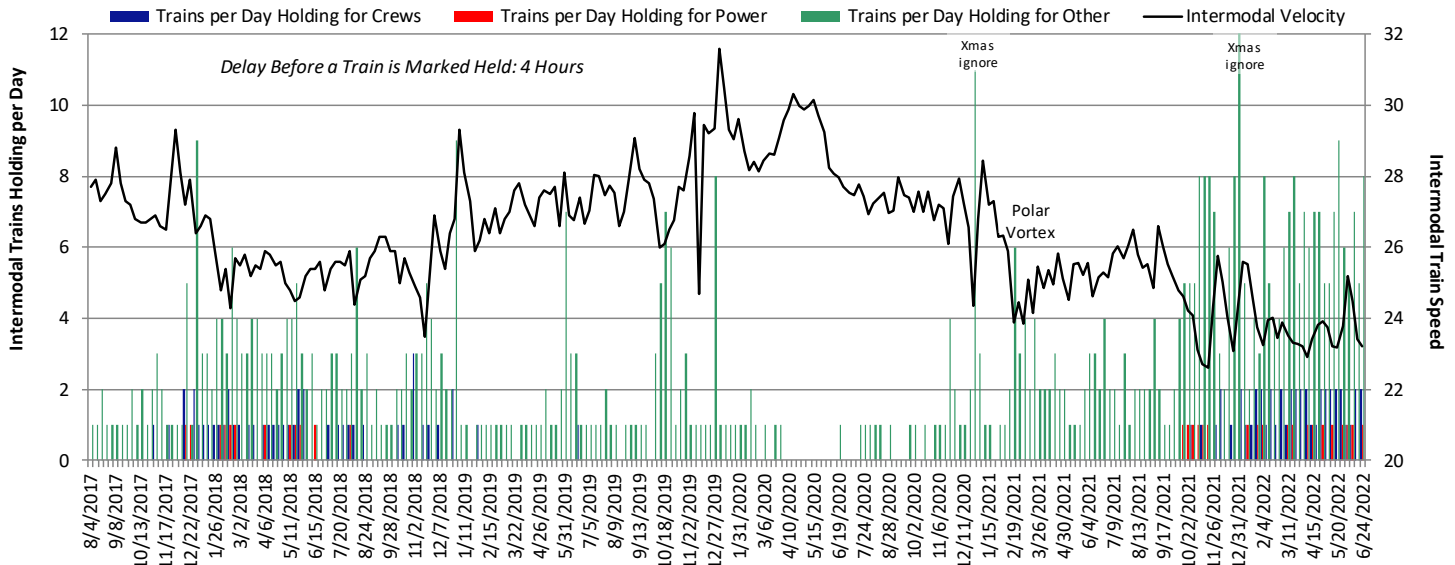
Source: Norfolk Southern and Loop Capital Markets

Intermodal Network Efficiency

Train Speed and Trains Holding

Intermodal network speed has tailed-off in the three weeks since Memorial Day with 11 trains held last week, on average: 2 for crews, 1 for power, and 8 for other reasons. On-time performance last week was flat sequentially, at 90%.

Figure 38: Norfolk Southern Intermodal Average Train Speed and Trains Holding for Crews, Power & Other

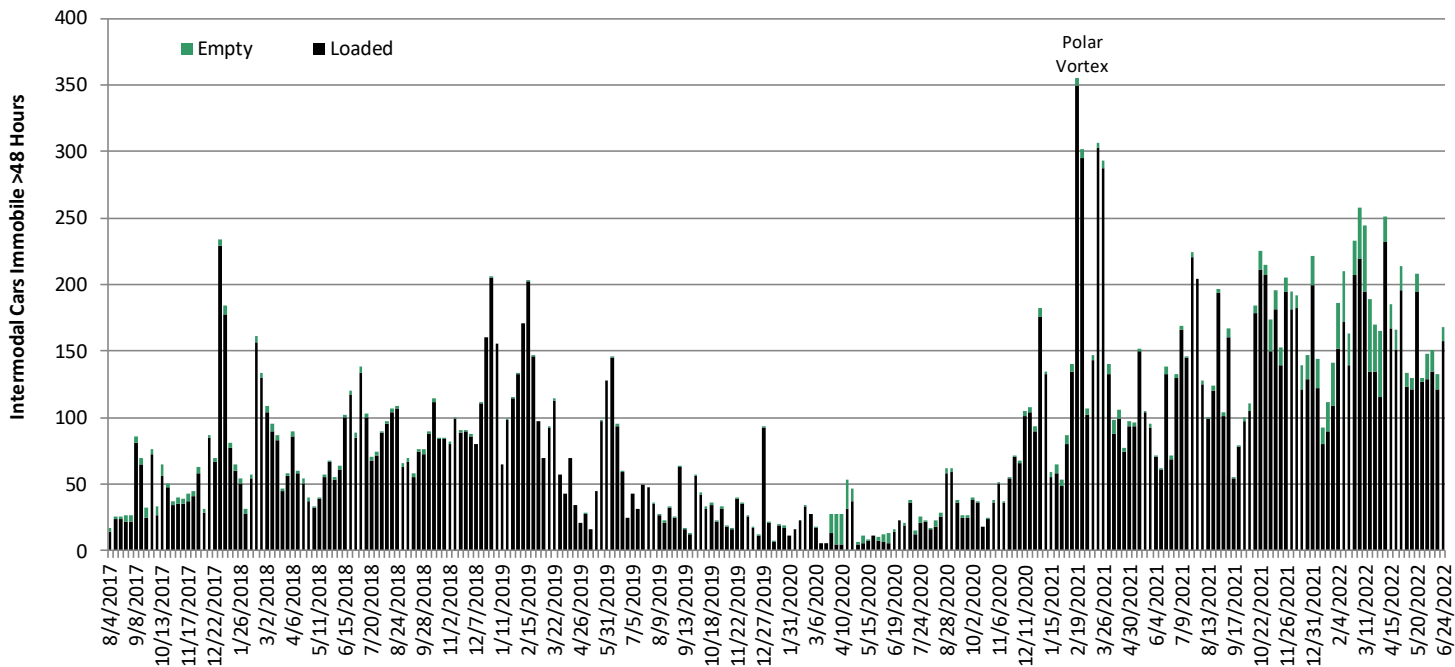


Source: Norfolk Southern and Loop Capital Markets

2-Day Delays

Intermodal platforms sitting idle for 48-hours or more increased last week to a five week high of 168.

Figure 39: Norfolk Southern Intermodal Cars Immoblie for 48 Hours or More

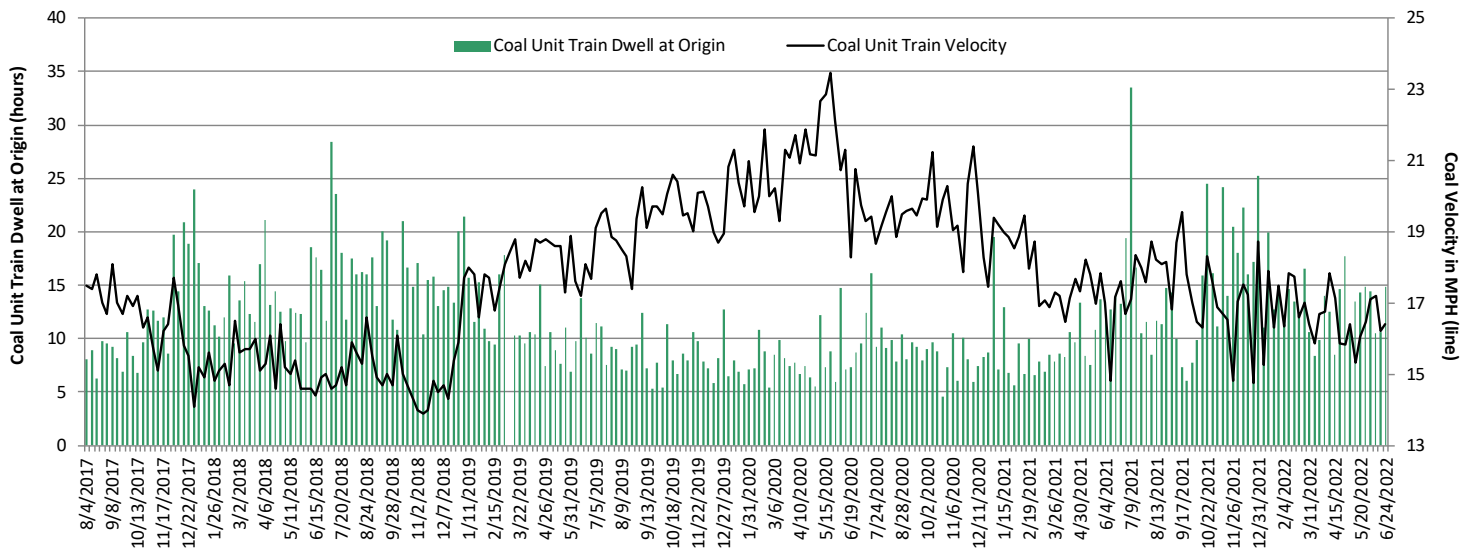


Source: Norfolk Southern and Loop Capital Markets

Coal Train Efficiency

Speed still soft versus historical averages; dwell at origin decent.

Figure 40: Norfolk Southern Coal Unit Train Dwell at Origin (lower is better) and Coal Unit Train Velocity (higher is better)

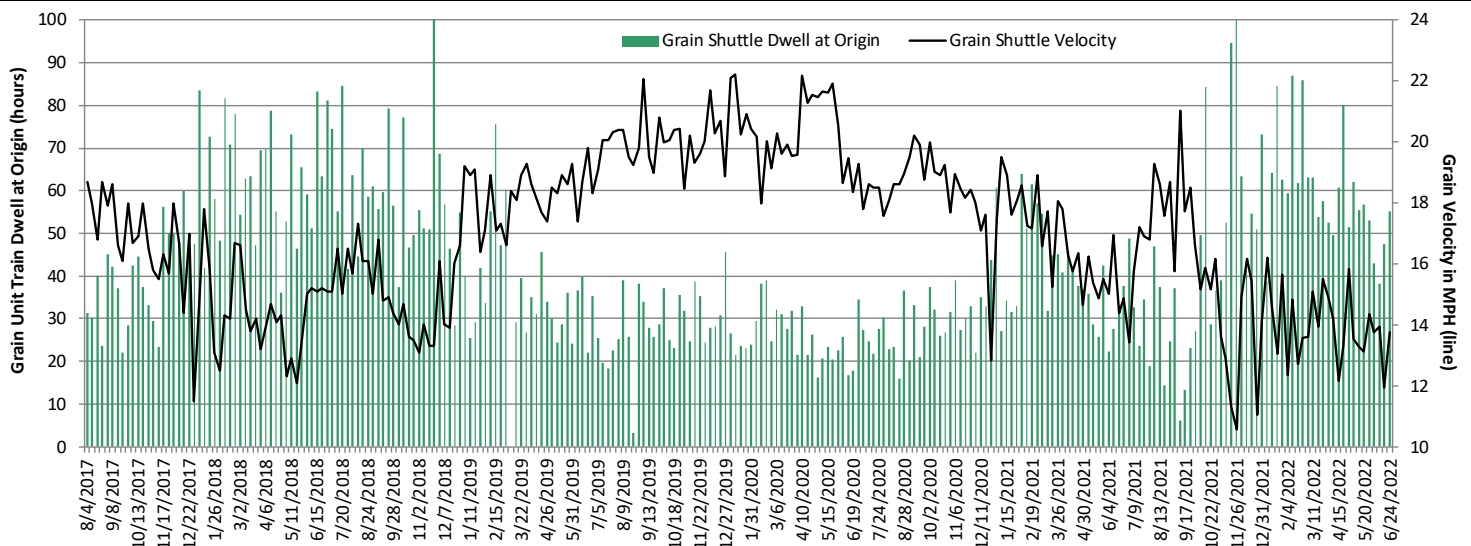


Source: Norfolk Southern and Loop Capital Markets

Grain Train Efficiency

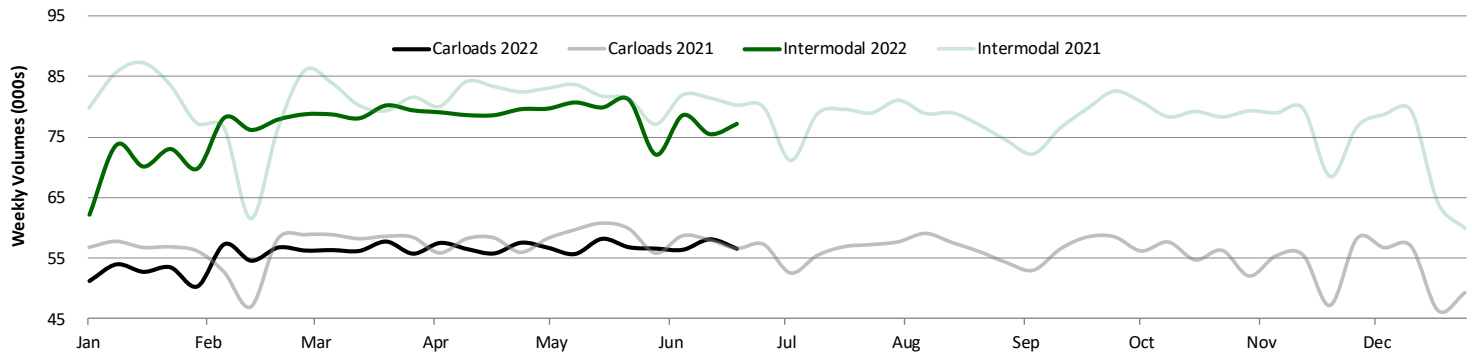
Speed rebounded last week but dwell at origin increased for a second consecutive week.

Figure 41: Norfolk Southern Grain Shuttle Train Dwell at Origin (lower is better) and Grain Shuttle Train Velocity (higher is better)



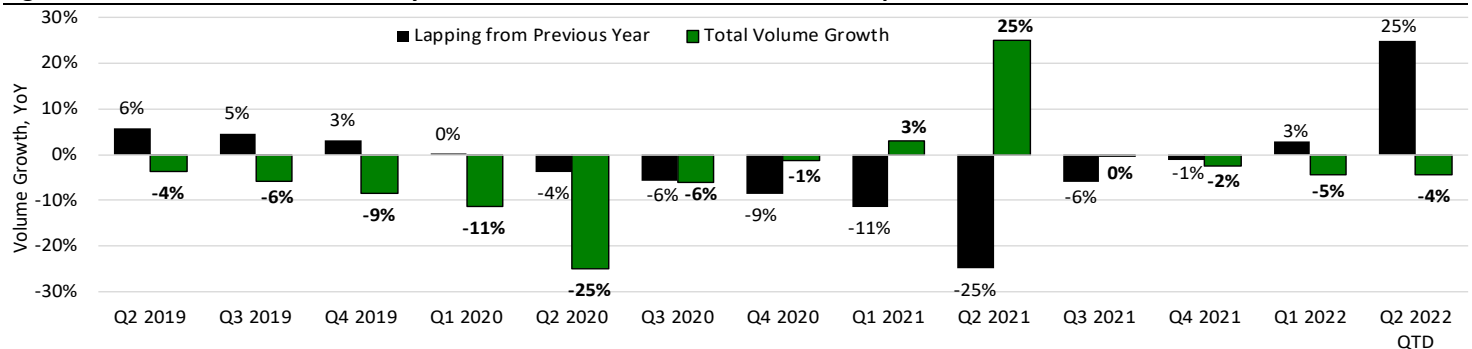
Source: Norfolk Southern and Loop Capital Markets

Norfolk Southern Volumes Through Week Ending 6/25/22



Reporting Segment	Commodity	Year-to-Date			Q2 Quarter-to-Date			Week Ending 6/25/22		
		2021	2022	Δ	2021	2022	Δ	2021	2022	Δ
Coal (15% of Sales)	Coal	311.5	307.2	(1.4%)	156.5	148.8	(4.9%)	10.6	11.6	8.9%
	Coke	21.6	16.1	(25.6%)	10.7	7.9	(25.8%)	0.7	0.7	6.7%
	Total Coal	333.2	323.3	(3.0%)	167.2	156.8	(6.2%)	11.3	12.3	8.8%
Chemicals (17% of Sales)	Chemicals	198.0	198.2	0.1%	99.5	97.1	(2.5%)	7.6	8.1	6.7%
	Petroleum Products	61.9	64.9	4.7%	31.5	31.8	1.0%	2.7	2.5	(6.5%)
	Non-metallic Minerals	11.6	11.7	1.6%	5.7	6.1	6.3%	0.4	0.5	23.6%
	Total Chemicals	271.5	274.8	1.2%	136.8	135.0	(1.3%)	10.6	11.1	4.0%
Metals & Construction (13% of Sales)	Metals & Products	134.2	120.2	(10.4%)	66.7	58.6	(12.0%)	5.5	4.7	(15.1%)
	Crushed Stone, Sand, & Gravel	95.4	99.7	4.5%	53.4	55.1	3.0%	4.5	4.7	3.3%
	Stone, Clay, & Glass Products	64.2	59.4	(7.5%)	33.6	30.6	(9.1%)	2.7	2.6	(4.7%)
	Iron & Steel Scrap	38.9	37.6	(3.4%)	20.5	19.1	(6.7%)	1.8	1.6	(14.2%)
	Metallic Ores	2.2	2.4	10.1%	1.0	1.2	19.4%	0.1	0.1	21.8%
	Total Metals/Construction	335.0	319.3	(4.7%)	175.3	164.6	(6.1%)	14.7	13.6	(7.1%)
Agriculture, Forest & Consumer (21% of Sales)	Grain	82.8	75.7	(8.5%)	40.9	38.1	(6.9%)	3.2	3.5	11.7%
	Grain Mill Products	57.3	58.5	2.1%	28.7	28.5	(0.4%)	2.2	2.2	0.7%
	Food & Kindred Products	42.4	44.9	5.9%	21.9	22.4	2.3%	1.6	1.6	(0.8%)
	Farm Products Ex. Grain	4.6	4.7	2.4%	2.3	2.3	1.1%	0.2	0.1	(35.4%)
	Pulp, Paper & Allied Products	62.6	60.1	(4.0%)	30.5	29.3	(3.8%)	2.4	2.4	(2.6%)
	Lumber & Wood Products	21.9	20.3	(7.2%)	11.3	10.7	(5.1%)	0.8	0.9	3.2%
	Primary Forest Products	7.8	8.1	4.8%	3.9	3.8	(0.9%)	0.3	0.3	(12.9%)
	Waste & Other Scrap	29.5	33.0	11.9%	15.5	17.0	9.6%	1.4	1.5	9.0%
	Total Ag, Forest, Consumer	325.2	322.3	(0.9%)	163.7	161.0	(1.7%)	12.8	13.0	1.2%
Automotive (9% of Sales)	Motor Vehicles & Equipment	170.9	161.8	(5.3%)	77.8	80.6	3.5%	7.1	6.6	(8.2%)
	TOTAL CARLOADS	1,435.7	1,401.5	(2.4%)	720.8	697.9	(3.2%)	56.6	56.5	(0.1%)
Intermodal (25% of Sales)	Containers	1,883.0	1,793.3	(4.8%)	949.1	904.5	(4.7%)	73.8	72.3	(2.0%)
	Trailers	146.1	131.5	(10.0%)	67.7	58.4	(13.7%)	6.5	4.8	(26.0%)
	TOTAL INTERMODAL	2,029.1	1,924.8	(5.1%)	1,016.8	962.9	(5.3%)	80.3	77.2	(4.0%)
	TOTAL	3,464.8	3,326.3	(4.0%)	1,737.6	1,660.8	(4.4%)	136.9	133.7	(2.4%)

Figure 42: Norfolk Southern Quarterly Volume Growth and Associated YoY Comps



Source (all charts and tables): Norfolk Southern and Loop Capital Markets



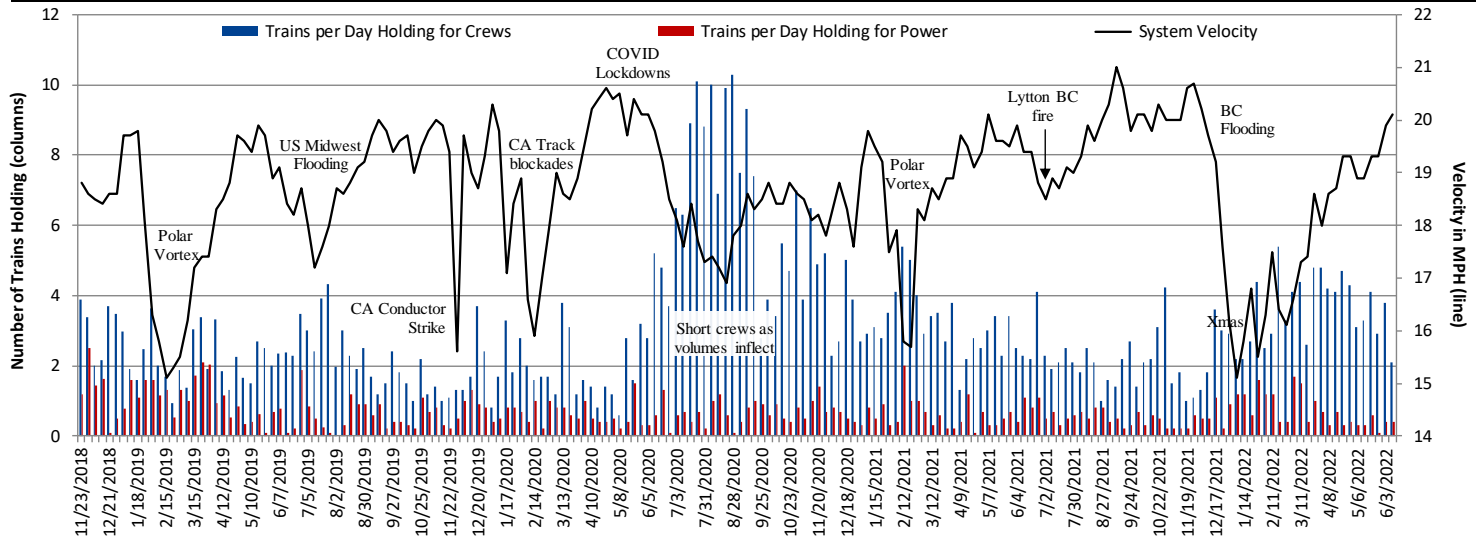
Canadian National

Full system data is obtained by combining StatCan numbers for the Canadian portion of the network with STB data for the US portion; but note StatCan reporting is tardy relative to the STB; hence full system data for CN lags that of the US railroads by a week. Current full system **data is through 6/10/22**.

Network velocity continued to rally in the week ending June 10 while trains holding for crews fell to a six-month low of just 2.1 per day. Trains holding for power immaterially low.

Average Train Speed and Trains Holding for Crews and Power

Figure 43: CN Velocity (higher is better) and Trains per Day Holding for Power and Crews (lower is better)

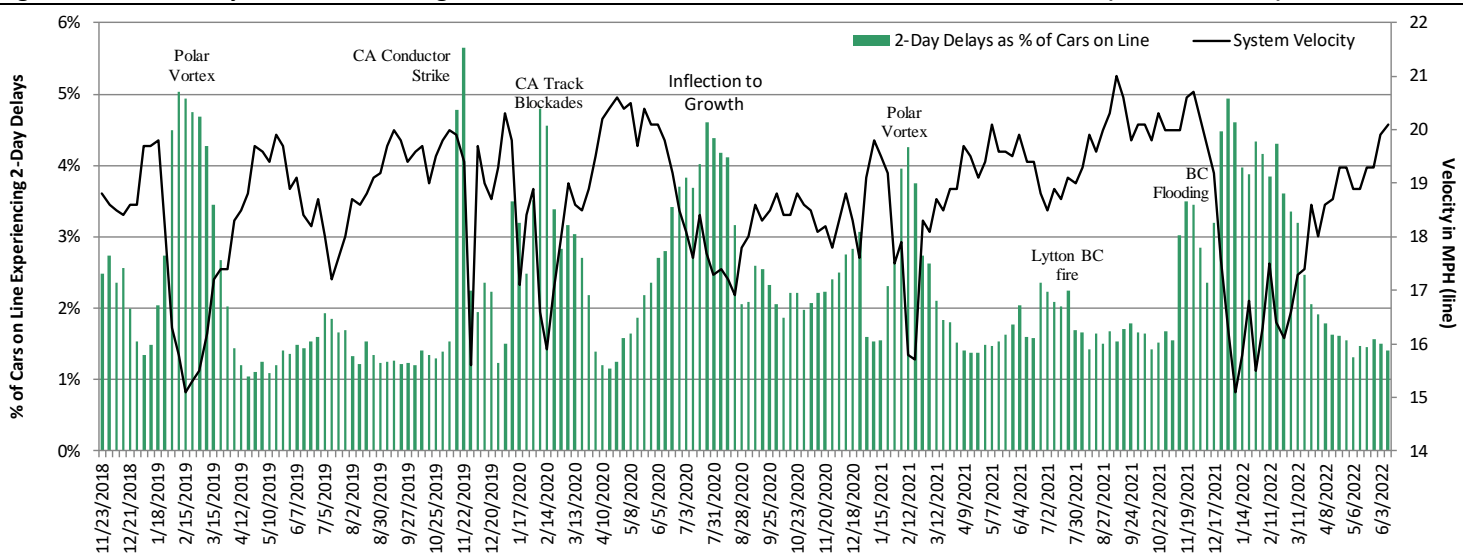


Source: Canadian National and Loop Capital Markets. CN trains holding is based on a daily snapshot that counts the number of trains delayed as at 00:01 AM every day.

2-Day Delays

Cars slow to move sitting at a very healthy 1.4% of cars-on-line.

Figure 44: CN Velocity and the Percentage of Cars-on-Line that have not moved in 48-hours or more (lower is better)

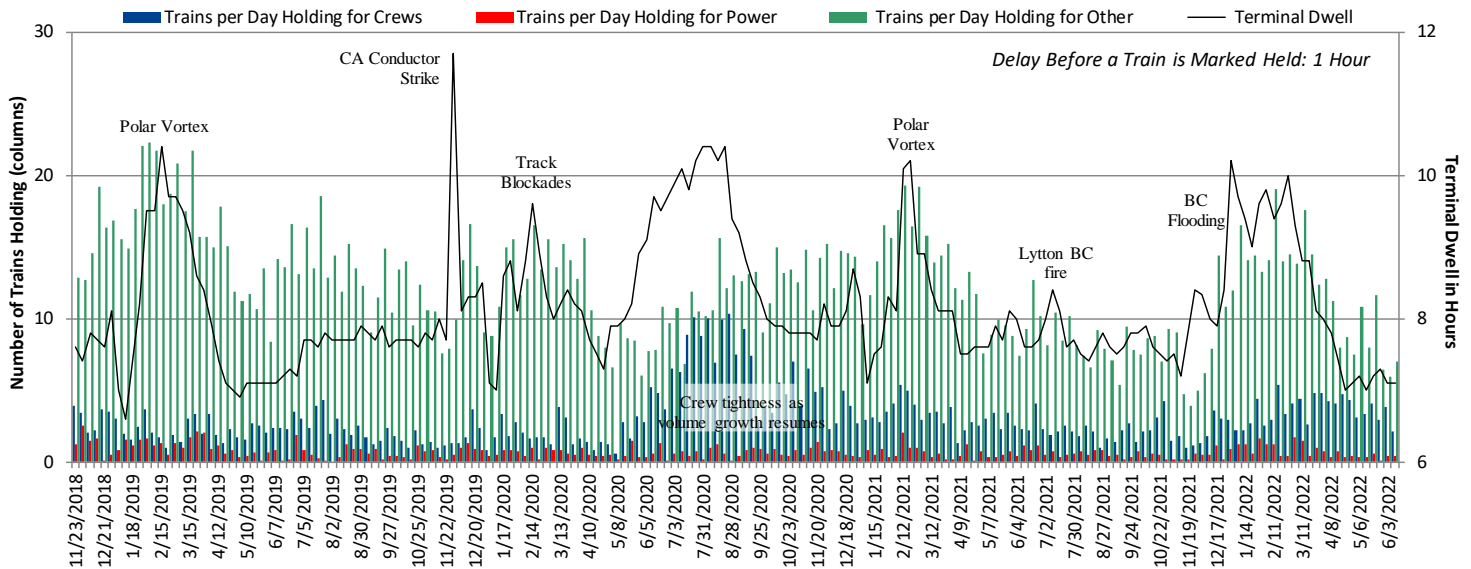


Source: Canadian National and Loop Capital Markets

Trains Holding for Power, Crews, and 'Other'

Trains holding for 'other' running at seven per day.

Figure 45: CN Trains per Day Holding for Power, Crews and 'Other'

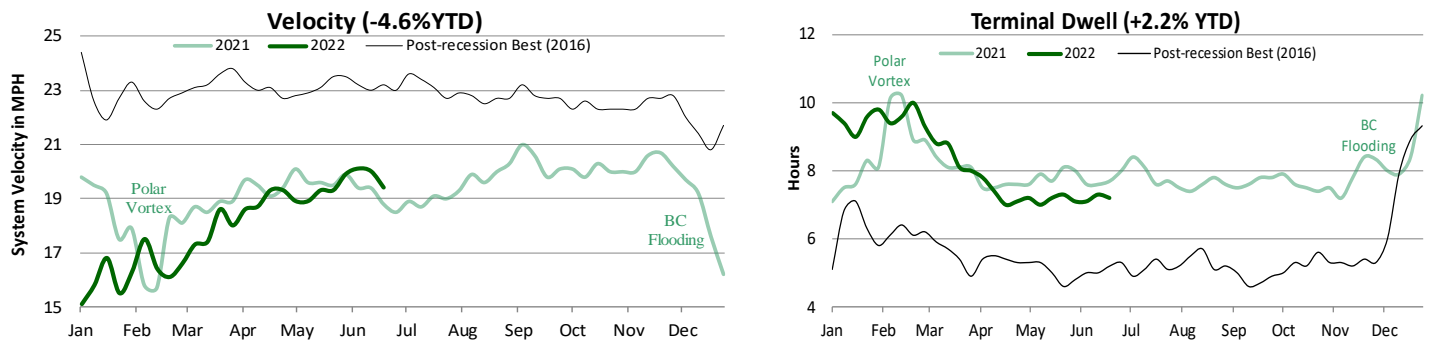


Source: Canadian National and Loop Capital Markets. CN trains holding is based on a daily snapshot that counts the number of trains delayed as at 00:01 AM every day.

Velocity and Terminal Dwell

These charts extend through June 24, and you can see velocity flattening out in that additional week. In next week's data it will be interesting to see the impact of the current strike by 750 members of the International Brotherhood of Electrical Workers.

Figure 46: CN System Velocity and Terminal Dwell



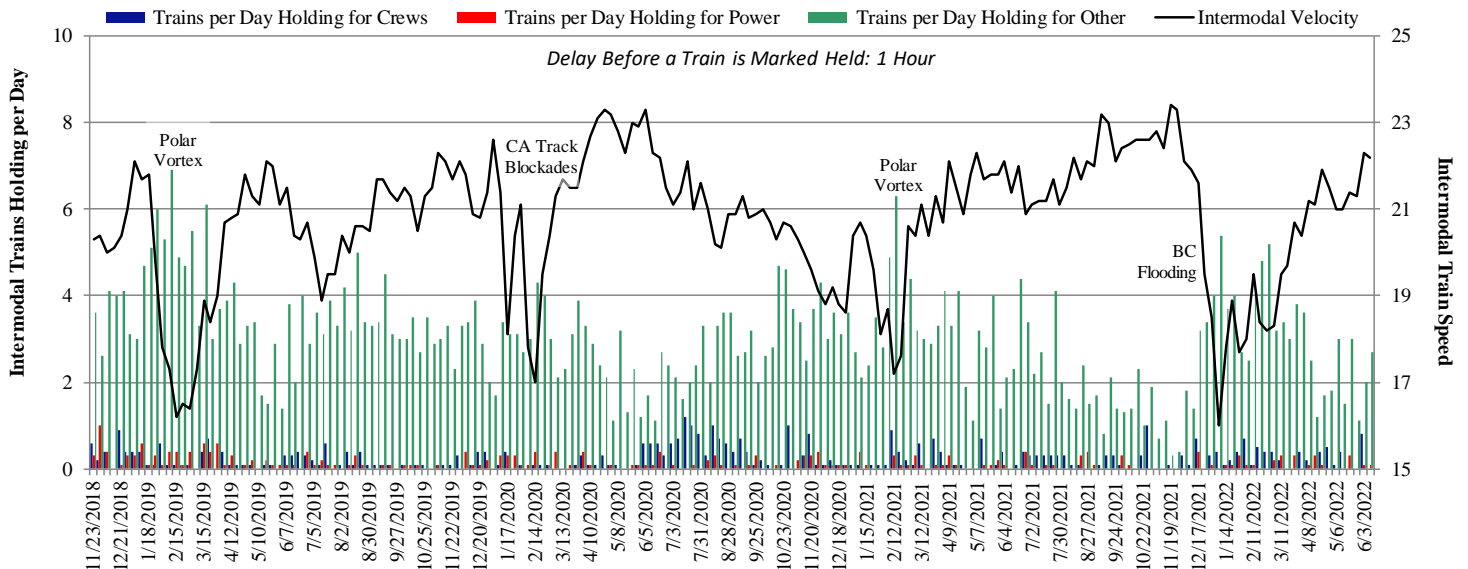
Source: Canadian National and Loop Capital Markets

Intermodal Network Efficiency

Intermodal Train Speed and Trains Holding

Intermodal network speed is now within striking distance of multi-year highs; albeit pre-strike. No issues with trains holding for crews (0 per day in the week ending June 10), power (0), or 'other' (3).

Figure 47: Canadian National Intermodal Average Train Speed and Trains Holding for Crews, Power & Other

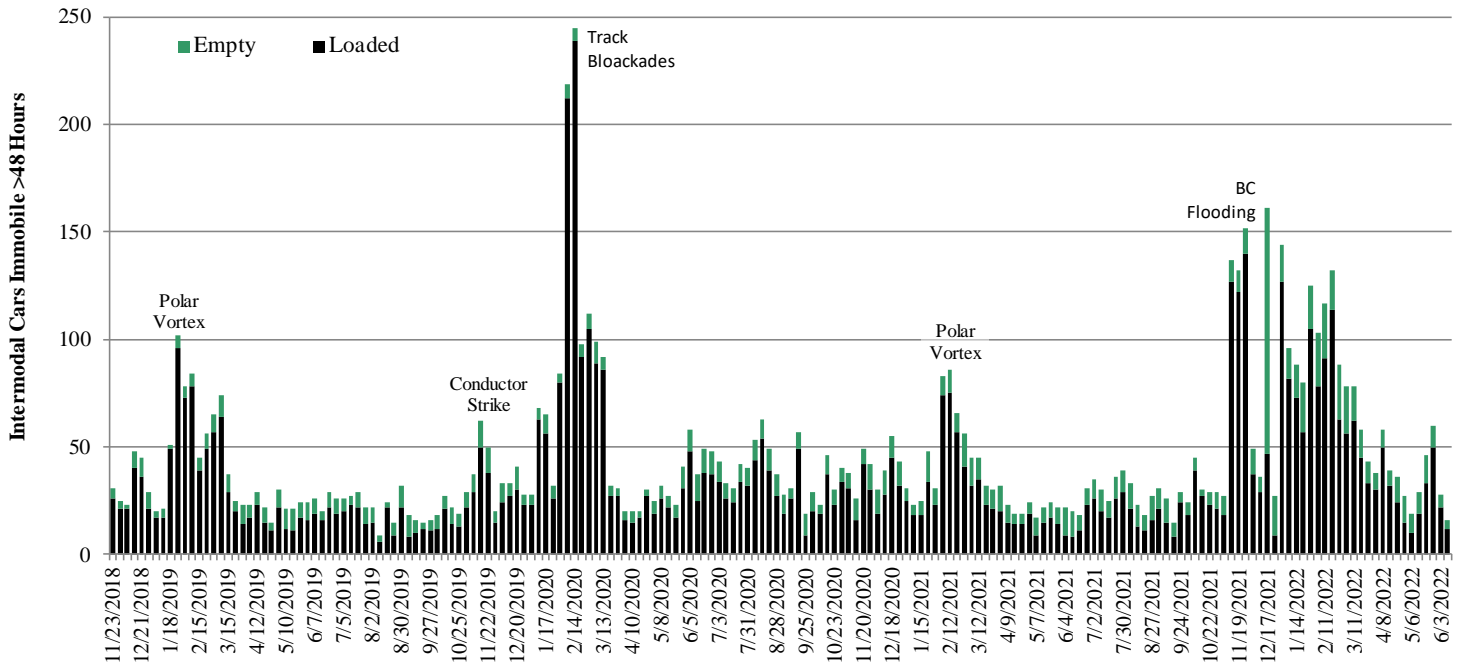


Source: Canadian National and Loop Capital Markets

Intermodal 2-Day Delays

Just 12 loaded and 4 empty platforms slow to move in the most recently reported week, which is a low we haven't seen since September last year.

Figure 48: Canadian National Intermodal Cars Immobile for 48 Hours or More

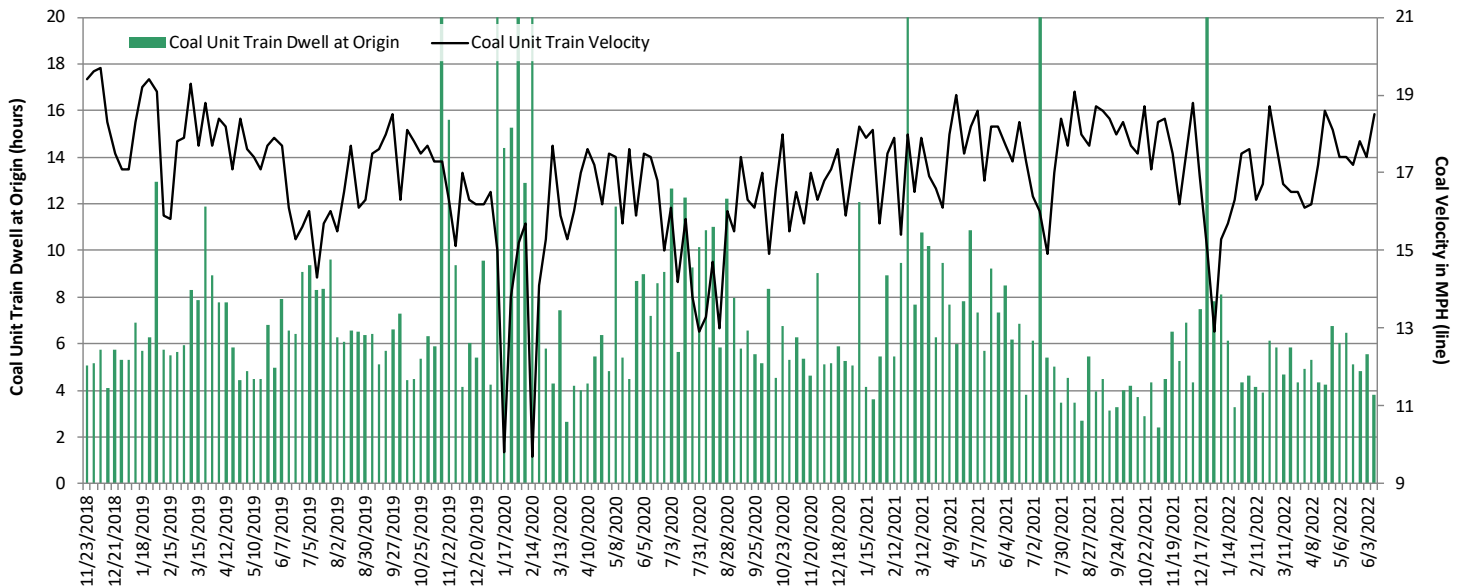


Source: Canadian National and Loop Capital Markets

Coal Train Efficiency

Good speed, and dwell at origin improving to just 3.8 hours (is that even possible?).

Figure 49: CN Coal Unit Train Dwell at Origin (lower is better) and Coal Unit Train Velocity (higher is better)

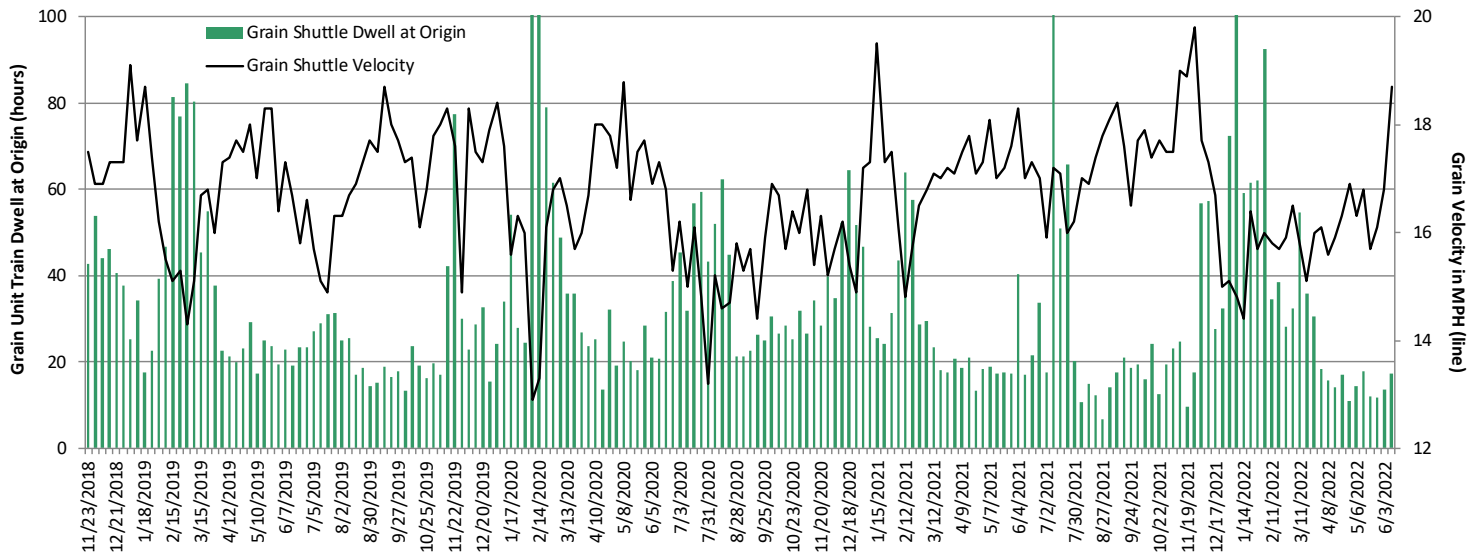


Source: Canadian National and Loop Capital Markets

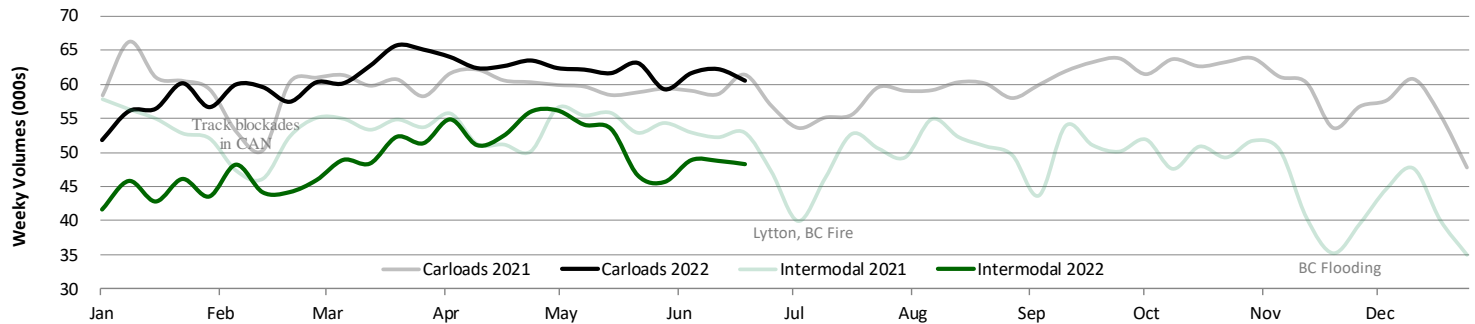
Grain Train Efficiency

A nice step up in grain train speed, while dwell at origin respectable at 17 hours.

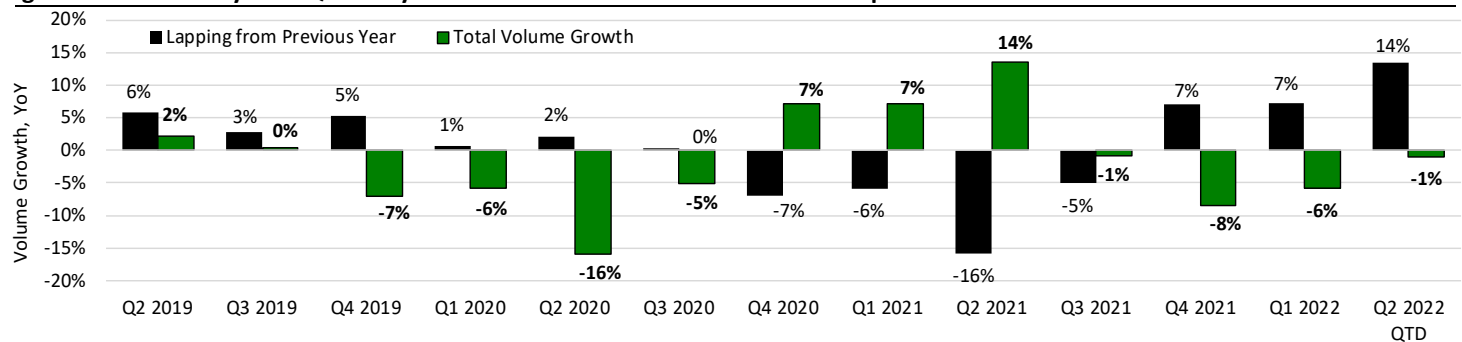
Figure 50: CN Grain Shuttle Train Dwell at Origin (lower is better) and Grain Shuttle Train Velocity (higher is better)



Source: Canadian National and Loop Capital Markets

Canadian National Volumes Through Week Ending 6/25/22


Reporting Segment	Commodity	Year-to-Date			Q2 Quarter-to-Date			Week Ending 6/25/22		
		2021	2022	Δ	2021	2022	Δ	2021	2022	Δ
Petroleum & Chemicals (19% of Sales)	Chemicals	224.9	218.8	(2.7%)	113.1	106.6	(5.7%)	8.3	8.5	3.0%
	Petroleum Products	131.1	159.3	21.5%	60.9	78.6	28.9%	5.3	7.0	32.2%
	Non-metallic Minerals	25.1	25.5	1.8%	11.8	13.2	11.8%	0.6	0.6	8.1%
	Total Petroleum & Chemicals	381.0	403.6	5.9%	185.8	198.3	6.7%	14.2	16.2	14.2%
Grain & Fertilizers (16% of Sales)	Grain	128.6	104.4	(18.8%)	59.3	50.0	(15.7%)	4.0	3.9	(4.0%)
	Farm Products Ex. Grain	42.3	20.9	(50.6%)	16.7	8.9	(46.8%)	0.9	0.8	(10.8%)
	Grain Mill Products	32.4	32.2	(0.8%)	15.6	16.0	2.8%	1.5	1.3	(13.3%)
	Food & Kindred Products	41.3	38.7	(6.5%)	20.1	18.6	(7.6%)	1.8	1.6	(10.8%)
	Total Grain & Fertilizers	244.7	196.1	(19.8%)	111.7	93.4	(16.3%)	8.2	7.6	(7.9%)
Forest Products (13% of Sales)	Pulp, Paper & Allied Products	68.6	63.3	(7.8%)	33.1	31.7	(4.5%)	2.6	2.4	(8.7%)
	Lumber & Wood Products	69.8	64.9	(7.0%)	35.4	33.7	(4.8%)	2.7	2.7	(1.1%)
	Primary Forest Products	25.4	24.1	(4.9%)	13.5	12.2	(9.8%)	1.1	1.0	(11.2%)
	Total Forest Products	163.7	152.3	(7.0%)	82.1	77.6	(5.5%)	6.5	6.1	(5.9%)
Metals & Minerals (12% of Sales)	Metallic Ores	272.2	257.8	(5.3%)	138.2	129.7	(6.2%)	12.6	10.3	(17.8%)
	Crushed stone, Sand, & Gravel	56.8	58.0	2.1%	30.4	32.3	6.3%	2.8	3.0	6.8%
	Metals & Products	42.1	44.7	6.1%	20.0	22.5	12.6%	1.6	1.7	8.4%
	Stone, Clay, & Glass Products	22.1	21.2	(4.4%)	11.5	10.8	(5.7%)	0.9	0.9	9.0%
	All Other Carloads	41.0	28.0	(31.8%)	21.0	13.6	(35.4%)	1.7	1.1	(33.5%)
	Iron & Steel Scrap	13.0	14.4	11.4%	5.9	8.0	34.4%	0.5	0.6	6.7%
	Waste & Other Scrap	7.6	8.2	8.3%	4.4	4.2	(4.8%)	0.3	0.4	12.0%
	Total Metals & Minerals	454.8	432.3	(4.9%)	231.4	221.1	(4.5%)	20.4	18.0	(11.5%)
Autos (6% of Sales)	Motor Vehicles & Equipment	90.6	100.5	11.0%	39.6	52.5	32.5%	3.5	4.1	16.4%
Coal (5% of Sales)	Coal	136.7	211.4	54.6%	81.1	106.4	31.2%	7.5	7.6	1.5%
	Coke	26.2	29.6	13.2%	13.0	15.6	20.3%	1.2	1.0	(14.7%)
	Total Coal	162.9	241.0	48.0%	94.1	122.0	29.7%	8.6	8.6	(0.8%)
TOTAL CARLOADS		1,497.7	1,525.9	1.9%	744.7	764.9	2.7%	61.4	60.6	(1.4%)
Intermodal (24% of Sales)	Containers	1,336.6	1,223.3	(8.5%)	663.7	630.4	(5.0%)	52.9	48.2	(8.7%)
	Trailers	-	-	-	-	0.0	-	-	-	-
	TOTAL INTERMODAL	1,336.6	1,223.3	(8.5%)	663.7	630.4	(5.0%)	52.9	48.2	(8.7%)
TOTAL		2,834.3	2,749.2	(3.0%)	1,408.4	1,395.3	(0.9%)	114.3	108.8	(4.8%)

Figure 51: CN Total System Quarterly Volume Growth and Associated YoY Comps


Source (all charts and tables): Canadian National and Loop Capital Markets



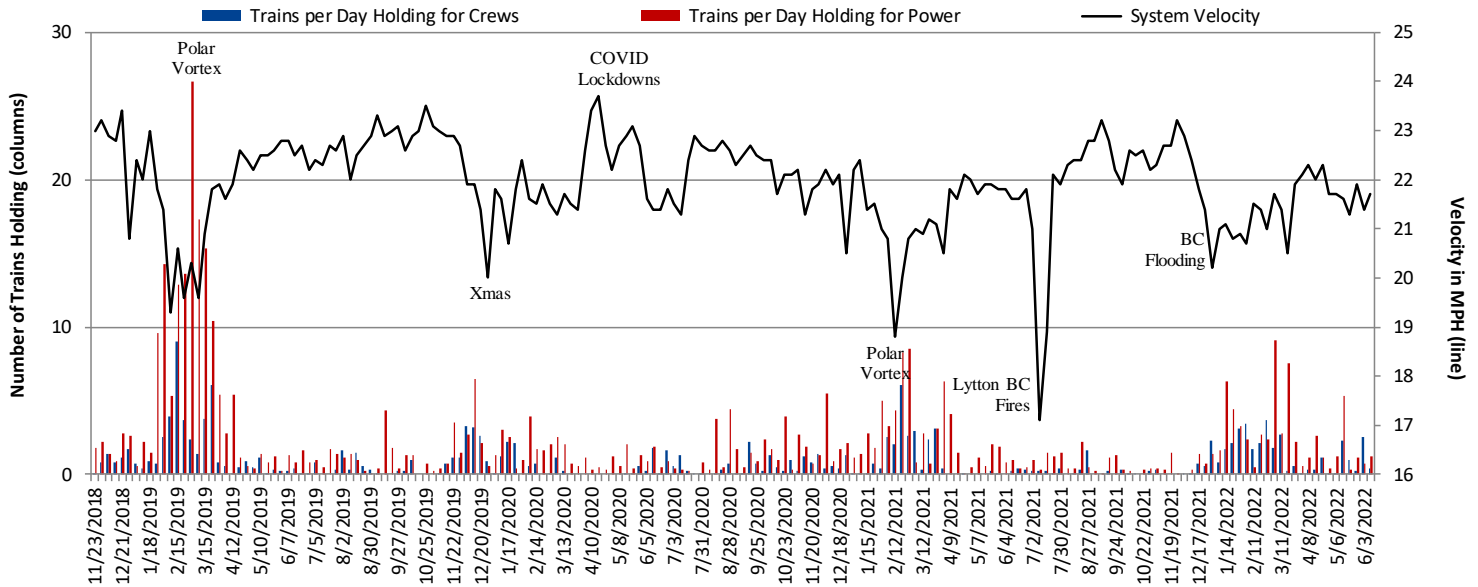
Canadian Pacific

Full system data is obtained by combining StatCan numbers for the Canadian portion of the network with STB data for the US portion; but note StatCan reporting is tardy relative to the STB; hence full system data for CP lags that of the US railroads; typically by a week. Current full system data is through 6/10/22.

Train speed has essentially been going sideways for a few weeks now as CP still can't quite get back about the 22 mph benchmark. No major issues with crews or power as usual.

Average Train Speed and Trains Holding for Crews and Power

Figure 52: CP Velocity (higher is better) and Trains per Day Holding for Power and Crews (lower is better)

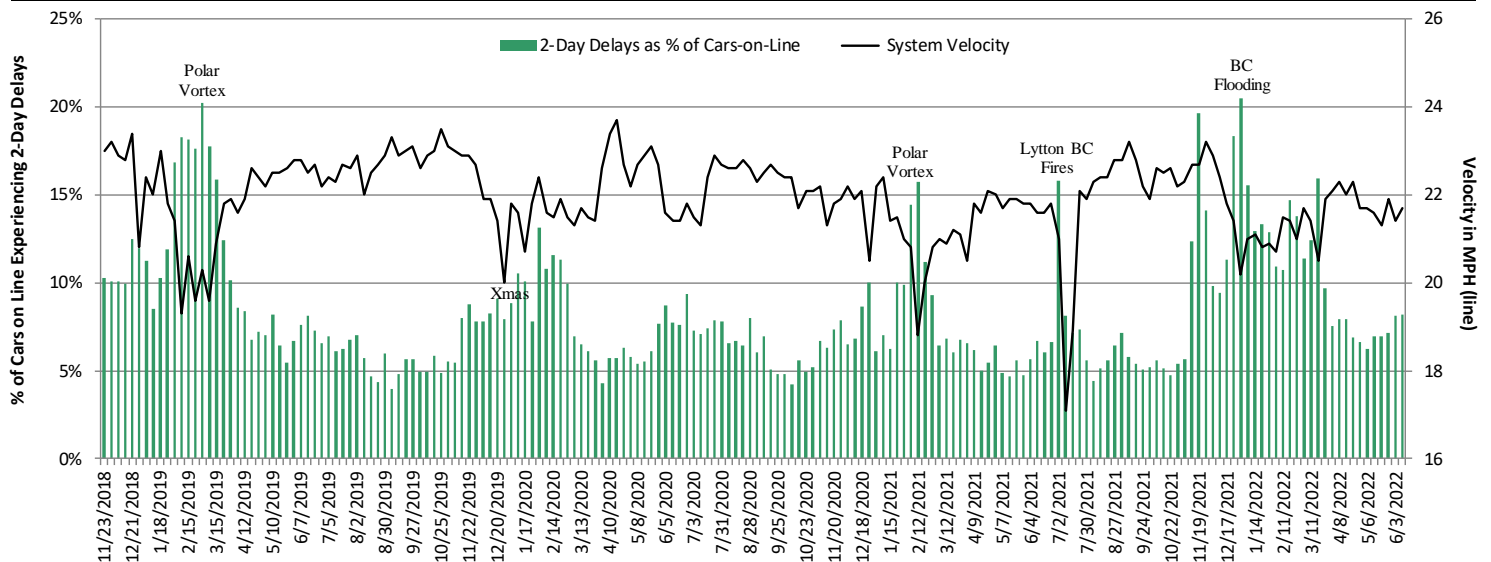


Source: Canadian Pacific and Loop Capital. Unlike the other railroads that use a daily "snapshot", CP captures all train delays in its trains holding daily average, but with a bigger (6hr) window.

2-Day Delays

Higher in the two weeks through June 10, to 8.2% of cars-on-line. That's high in absolute terms for not abnormal for CP.

Figure 53: CP Velocity and the Percentage of Cars-on-Line that have not moved in 48-hours or more (lower is better)



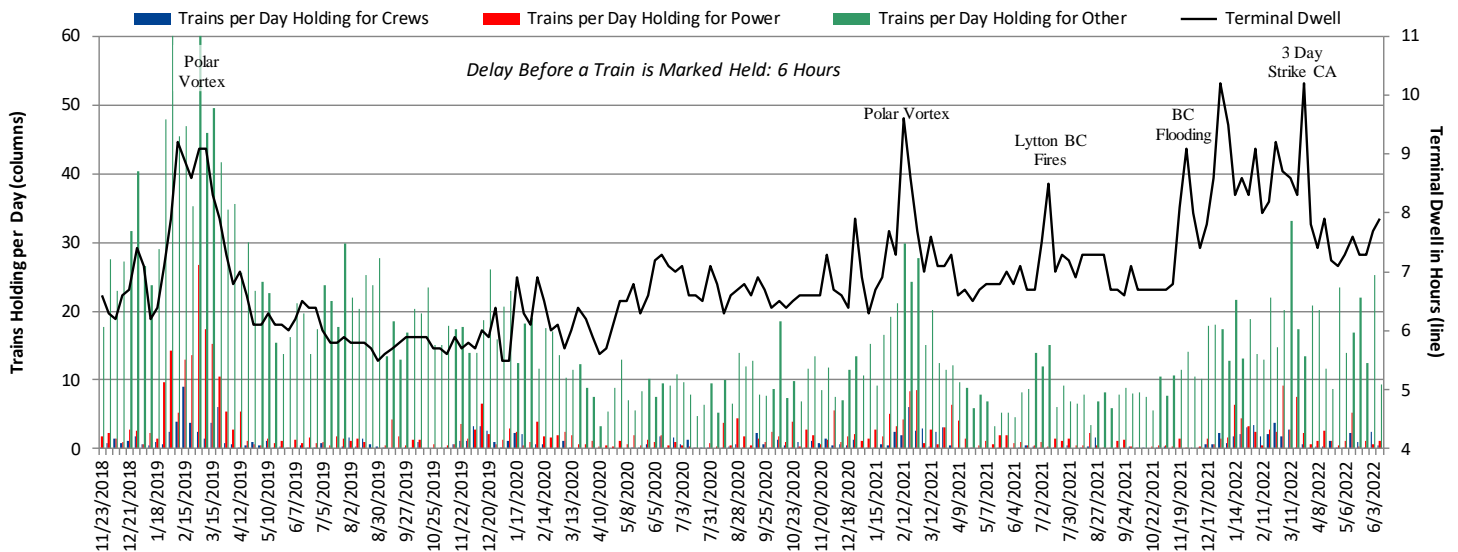
Source: Canadian Pacific and Loop Capital Markets

Trains Holding for Power, Crews, and 'Other'

CP marks a train held if it's delayed by 6 hours or more. That's a large delay and the highest in the industry, which explains why CP's trains holding numbers are so small, particularly with regard to power and crews. Trains held for 'other' is still reasonably useful, however, and tells a story.

Trains holding for 'other' saw a big improvement in the week ending June 10, from 25 to 9 per day. This is typically below 10 when CP is at its best.

Figure 54: CP Trains per Day Holding for Power, Crews and 'Other'

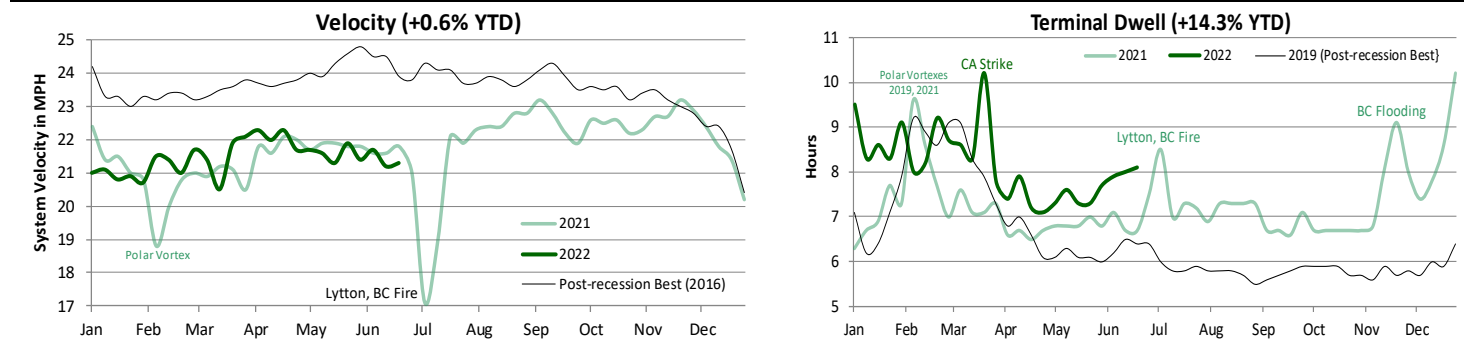


Source: Canadian Pacific and Loop Capital. Unlike the other railroads that use a daily "snapshot", CP captures all train delays in its trains holding daily average, but with a bigger (6 hour) window.

Velocity and Terminal Dwell YoY Comparisons

These charts extend through June 24. Velocity is still in its recent range while dwell continues to drift higher and is off materially YoY.

Figure 55: CP Velocity and Terminal Dwell



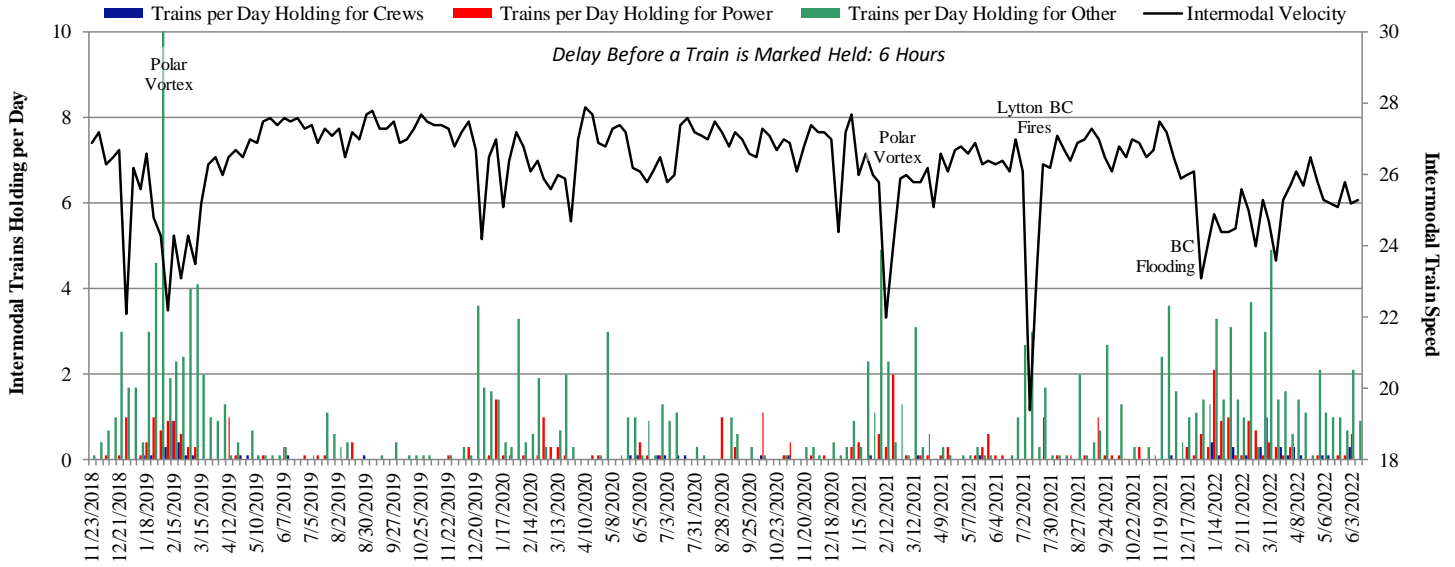
Source: Canadian Pacific and Loop Capital Markets

Intermodal Network Efficiency

Intermodal Train Speed and Trains Holding

Intermodal velocity is still trying to get back to normal (~27 mph) but current speed still short of that mark. No constraints related to power or crews and only a single train per day held for all other reasons in the most recently week reported.

Figure 56: Canadian Pacific Intermodal Average Train Speed and Trains Holding for Crews, Power & Other

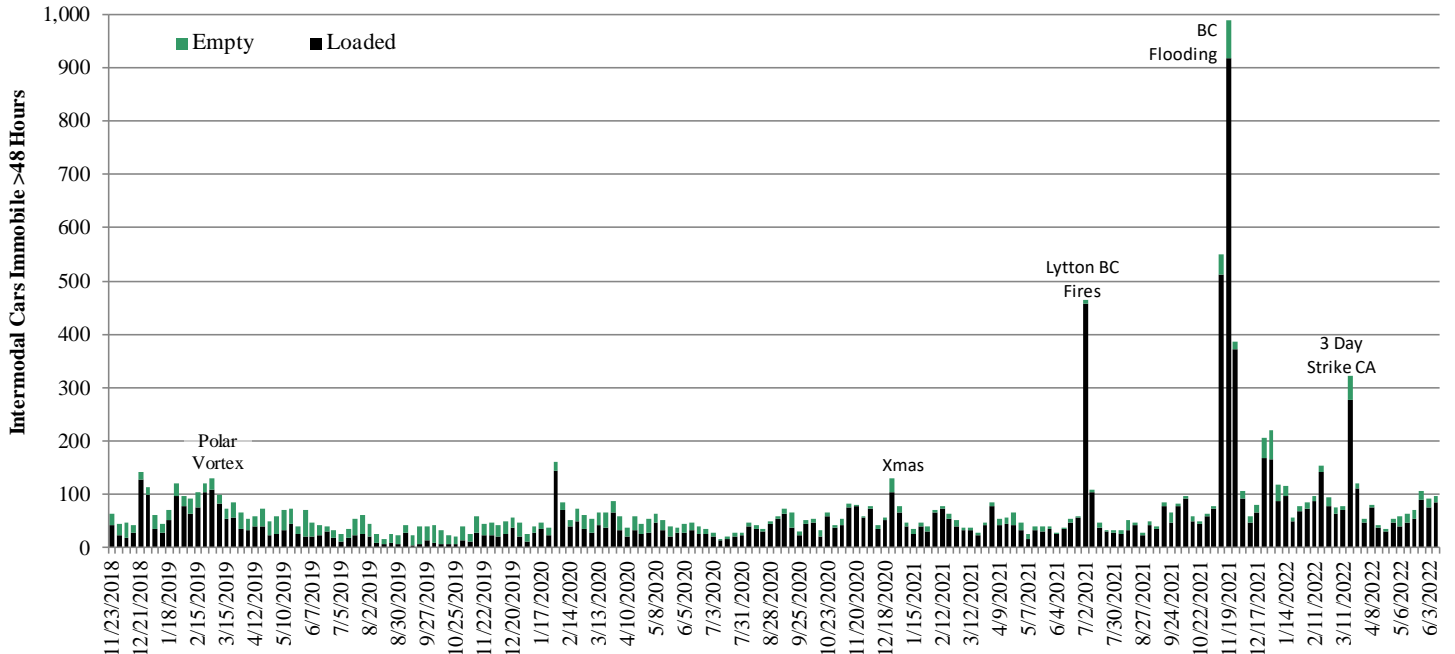


Source: Canadian Pacific and Loop Capital Markets

Intermodal 2-Day Delays

Running above CP's normal 40-80 range, with 84 loaded and 13 empty intermodal platforms stagnant in the week ending June 10.

Figure 57: Canadian Pacific Intermodal Cars Immobile for 48 Hours or More

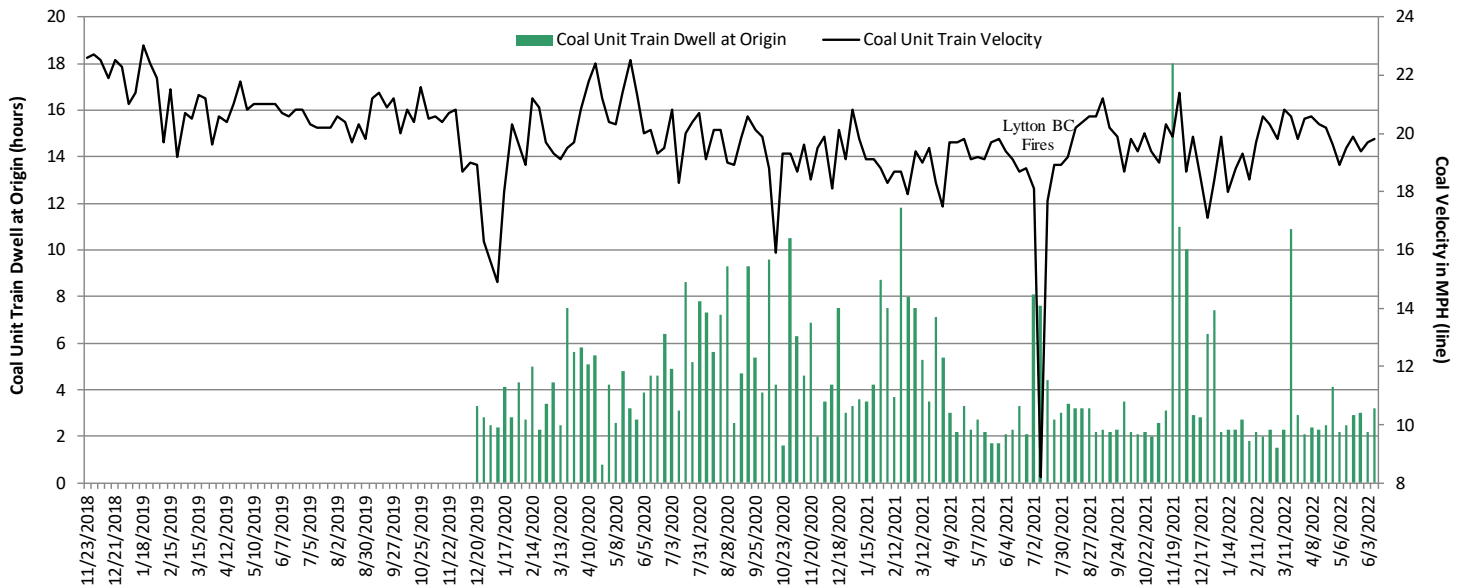


Source: Canadian Pacific and Loop Capital Markets

Coal Train Efficiency

Current speed and dwell at origin both within CP's normal range.

Figure 58: CP Coal Unit Train Dwell at Origin (lower is better) and Coal Unit Train Velocity (higher is better)

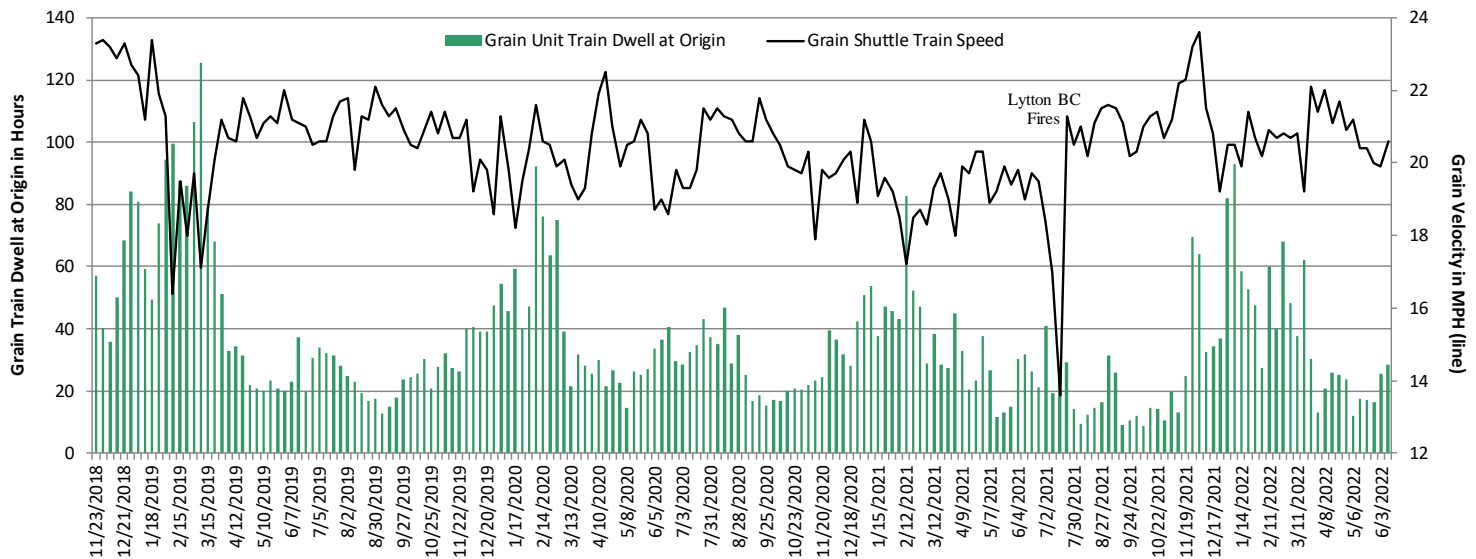


Source: Canadian Pacific and Loop Capital. Dwell at origin data prior to 2020 not available from the company.

Grain Train Efficiency

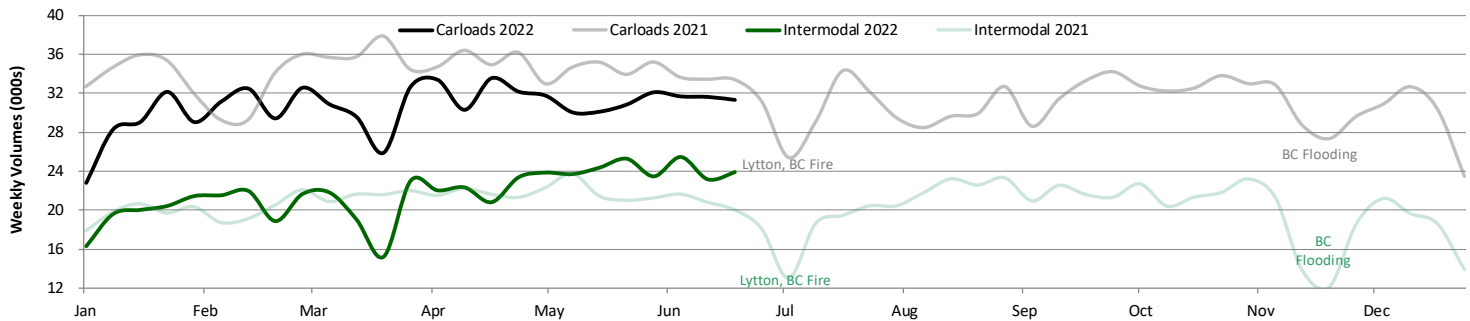
As above – normal ranges.

Figure 59: CP Grain Shuttle Train Dwell at Origin (lower is better) and Grain Shuttle Train Velocity (higher is better)



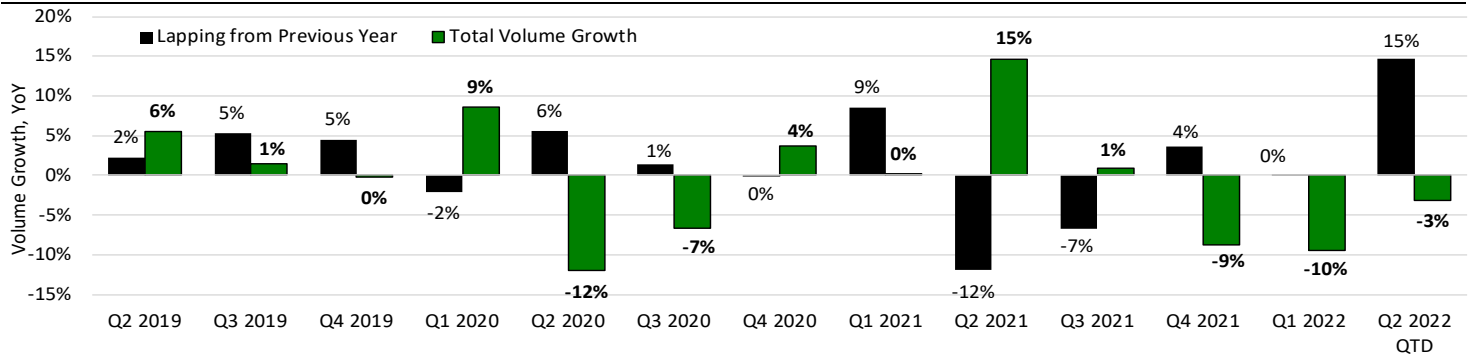
Source: Canadian Pacific and Loop Capital Markets

Canadian Pacific Volumes Through Week Ending 6/25/22



Reporting Segment	Commodity	Year-to-Date			Q2 Quarter-to-Date			Week Ending 6/25/22		
		2021	2022	Δ	2021	2022	Δ	2021	2022	Δ
Grain (22% of Sales)	Grain	141.4	102.7	(27.4%)	71.9	48.3	(32.8%)	5.5	3.4	(37.7%)
	Farm Products, Ex. Grain	42.3	18.8	(55.7%)	20.1	9.8	(51.4%)	1.3	1.1	(17.4%)
	Food & Kindred Products	36.1	33.1	(8.4%)	18.0	16.6	(7.3%)	1.4	1.3	(4.1%)
	Grain Mill Products	17.3	19.5	12.9%	8.3	9.0	8.4%	0.7	0.8	27.5%
	Total Grain	237.1	174.1	(26.6%)	118.4	83.8	(29.2%)	8.8	6.6	(24.6%)
Energy, Chemicals & Plastics (19% of Sales + 6% Potash)	Chemicals (~45% is Potash)	171.3	165.7	(3.3%)	88.0	88.4	0.4%	6.6	6.4	(3.2%)
	Petroleum Products	93.6	80.9	(13.5%)	41.4	38.1	(8.0%)	3.5	3.2	(10.4%)
	Total Energy, Chem, Plastics	264.9	246.7	(6.9%)	129.5	126.5	(2.3%)	10.1	9.6	(5.7%)
Metals, Minerals & Consumer (9% of Sales)	Stone, Clay and Glass Products	26.2	24.5	(6.7%)	13.4	13.1	(2.2%)	1.0	1.2	18.5%
	Crushed Stone, Gravel & Sand	23.0	32.9	43.2%	13.2	18.9	43.4%	1.2	1.6	31.8%
	Metals and Products	20.1	18.4	(8.1%)	9.9	9.6	(3.6%)	0.8	0.7	(12.4%)
	Iron and Steel Scrap	13.2	13.1	(1.1%)	6.7	7.0	4.6%	0.5	0.7	32.9%
	Metallic Ores	6.9	7.2	4.3%	2.9	3.8	31.8%	0.1	0.3	440.0%
	Waste and Scrap Materials*	3.3	2.5	(26.1%)	1.8	1.3	(27.1%)	0.2	0.1	(30.7%)
	Total Metals, Min, Consumer	92.8	98.6	6.3%	48.0	53.7	12.1%	3.7	4.6	21.9%
Coal (8% of Sales)	Coal	146.6	138.3	(5.7%)	75.3	67.1	(10.8%)	6.2	5.8	(6.2%)
	Coke	0.2	0.4	90.3%	0.1	0.3	167.6%	0.0	0.1	600.0%
	Total Coal	146.8	138.7	(5.5%)	75.4	67.4	(10.5%)	6.2	5.9	(4.8%)
Automotive (5% of Sales)	Motor Vehicles & Equipment	60.5	51.2	(15.5%)	27.5	27.1	(1.6%)	2.3	2.3	1.2%
Fertilizers & Sulphur (4% of Sales)	Non-metallic Minerals	8.3	8.2	(0.6%)	4.4	4.0	(8.1%)	0.3	0.3	(10.4%)
Forest Products (4% of Sales)	Primary Forest Products	0.6	0.7	19.7%	0.3	0.3	37.0%	0.0	0.0	28.6%
	Lumber and Wood Products	17.3	16.9	(2.3%)	9.1	8.8	(3.1%)	0.6	0.8	18.2%
	Pulp, Paper, and Allied Products	18.5	19.4	4.8%	9.3	9.8	5.3%	0.8	0.7	(1.8%)
	Total Forest Products	36.4	37.0	1.7%	18.6	18.9	1.7%	1.4	1.5	7.7%
All Other Carloads	Total All Other Carloads	14.7	12.5	(14.9%)	7.7	6.1	(21.4%)	0.4	0.4	2.1%
	TOTAL CARLOADS	861.5	766.9	(11.0%)	429.4	387.6	(9.7%)	33.4	31.3	(6.3%)
Intermodal (21% of Sales)	Containers	524.5	544.4	3.8%	268.1	288.3	7.5%	20.0	23.9	19.5%
	Trailers	-	-	-	-	-	-	-	-	-
	TOTAL INTERMODAL	524.5	544.4	3.8%	268.1	288.3	7.5%	20.0	23.9	19.5%
TOTAL		1,386.1	1,311.4	(5.4%)	697.5	675.9	(3.1%)	53.4	55.2	3.3%

Figure 60: CP Full System Quarterly Volume Growth and Associated YoY Comps



Source (all charts and tables): Canadian Pacific and Loop Capital Markets



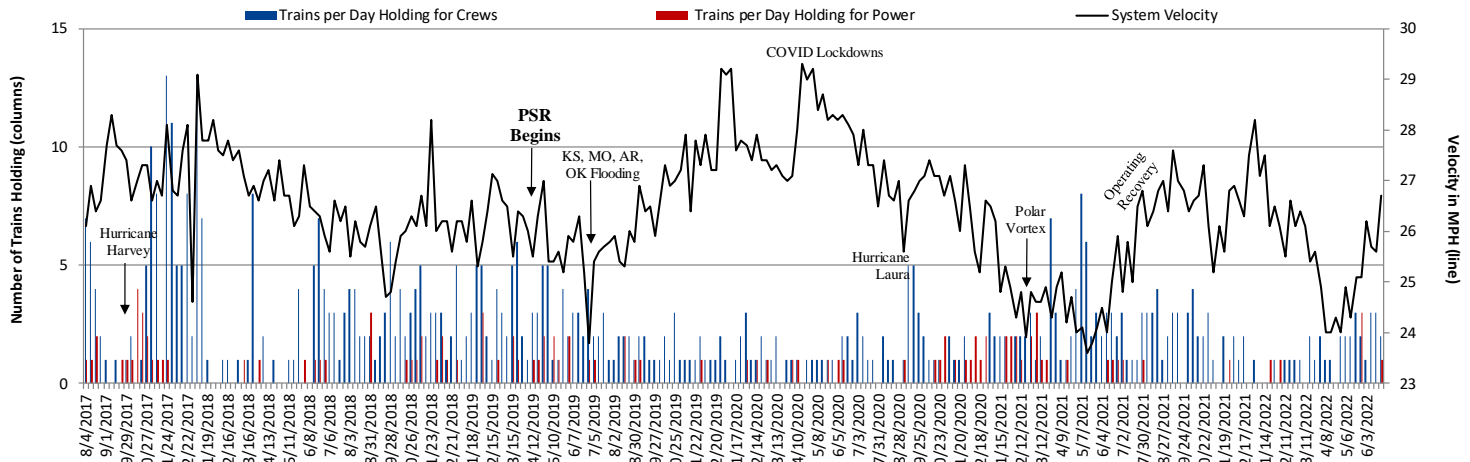
Kansas City Southern

Detailed operating data from the STB is US-only (~52% of revenues), so Mexico is excluded in the case of KCS. Like the other US railroads, the data is through June 24.

KCS's network velocity is staging a nice rebound and was up again last week, to 26.7 mph. Only two trains per day were held for crews in the US last week, although KCS recorded a 9% recrew rate in its US operation. One train on average was held for power.

Trains Holding (US Operations)

Figure 61: KCS US Velocity (higher is better) and Trains per Day Holding for Power and Crews (lower is better)

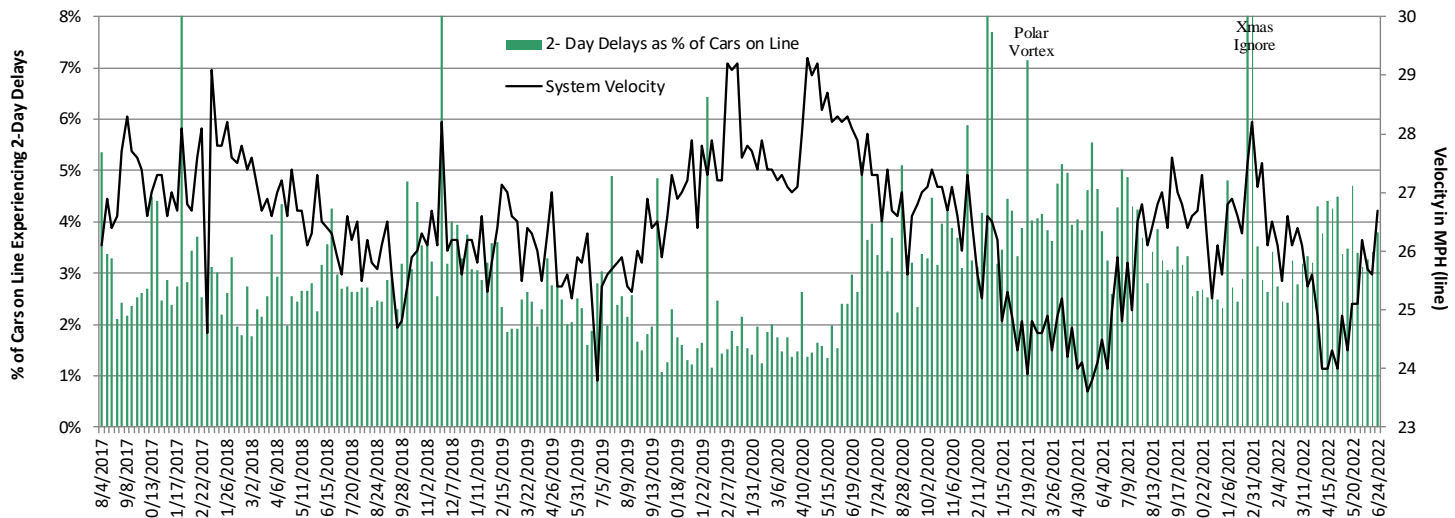


Source: Kansas City Southern and Loop Capital Markets. KCS trains holding is based on a daily snapshot that counts the number of trains delayed as at 8 AM every day.

2-Day Delays (US Operations)

A sequentially deterioration last week from 3.4% to 3.8% of cars-on-line slow to move.

Figure 62: KCS US Velocity and the Percentage of Cars-on-Line that have not moved in 48-hours or more (lower is better)

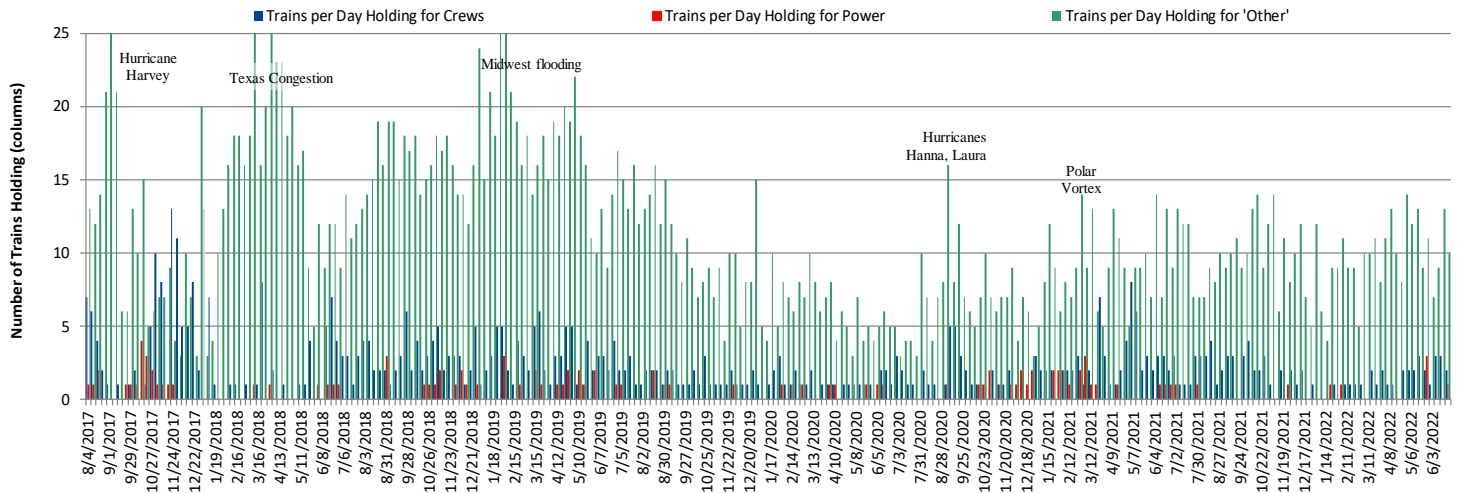


Source: Kansas City Southern and Loop Capital Markets

Trains Holding for Power, Crews, and 'Other' (US Operations)

Trains per day holding for 'other' decreased from 13 to 10 per day last week. As you can see in the chart this metric has been rangebound in the high-single/low-double digits for a year now.

Figure 63: KCS US Trains per Day Holding for Power, Crews and 'Other'



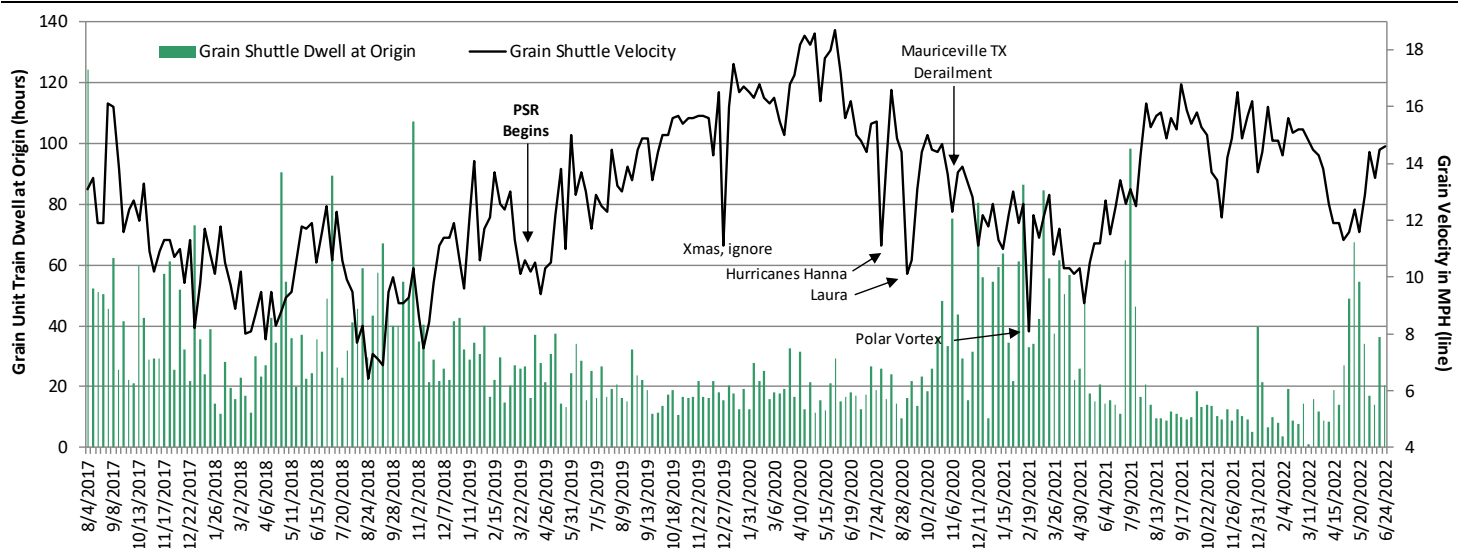
Source: Kansas City Southern and Loop Capital Markets. KCS trains holding is based on a daily snapshot that counts the number of trains delayed as at 8 AM every day.

Grain Train Efficiency (Full System)

On KCS's 2Q 2019 earnings call the CEO was asked what he looks at to quickly judge network performance. He said the fluidity of the grain shuttles is a great snapshot. They're the longest hauls, originating around Kansas City and terminating in central Mexico; hence they need to transit all the potential "traps": KC, Shreveport LA, Houston area, northern Mexico yards, etc. We try to capture this in the chart below. Also note KCS doesn't originate grain trains in Mexico, so US dwell at origin and full system dwell at origin are the same; hence the chart reflects the full system, not just the US.

In terms of recent trends, grain network speed remains healthy, and in the US 93% of the grain trains arrived on-time to a 24-hour standard last week. No on-time data available for Mexico.

Figure 64: Total System Grain Shuttle Dwell at Origin (lower is better) and Grain Shuttle Velocity (higher is better)



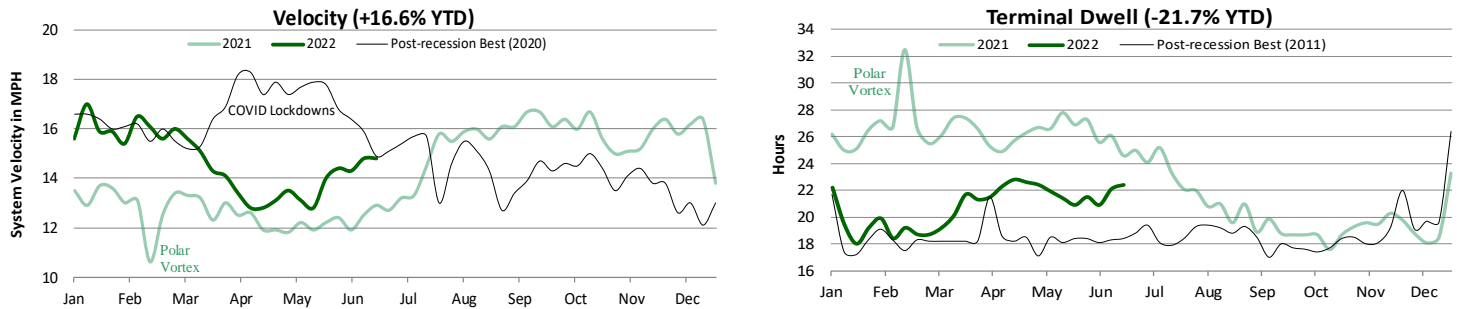
Source: Kansas City Southern and Loop Capital Markets

Full System Velocity and Terminal Dwell (US & Mexico)

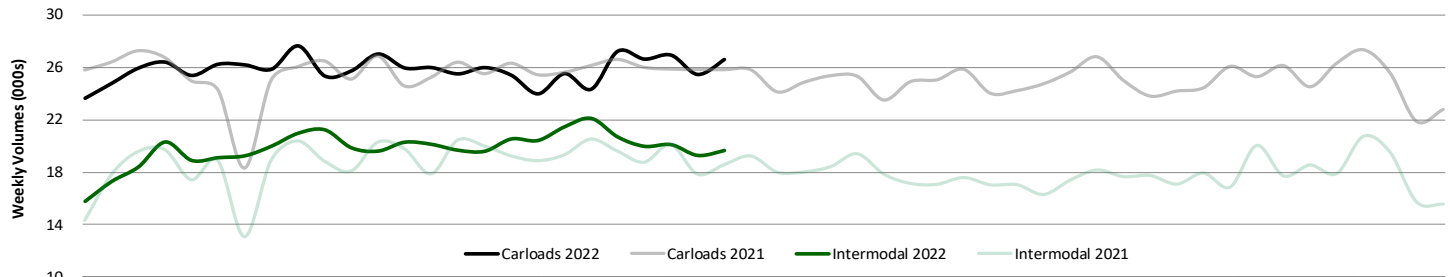
Full system (rather than just US) velocity and dwell.

Full system velocity good and continuing to rise. Dwell has been rangebound since March. KCS will hit tougher and more normal YoY operational comps in August.

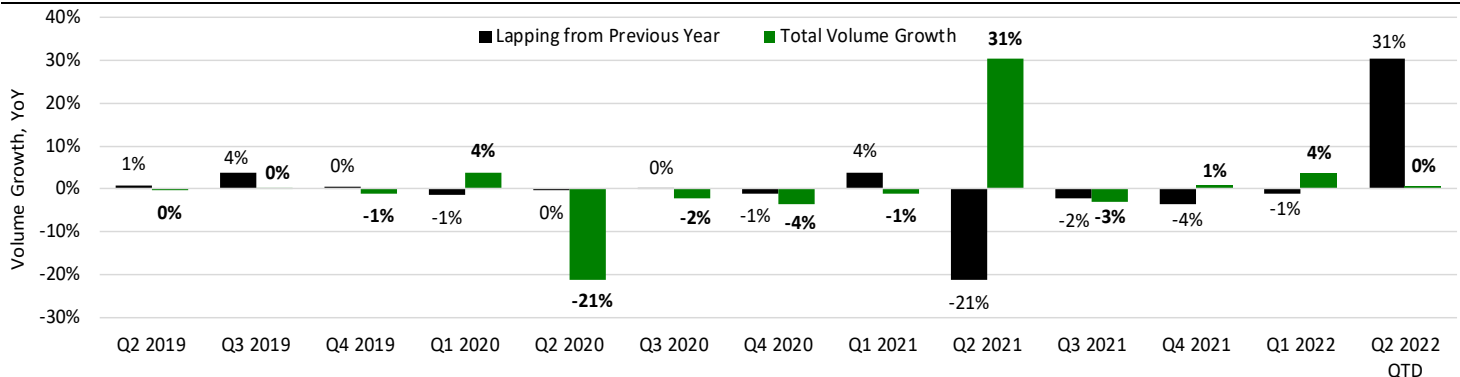
Figure 65: KCS Total System Velocity and Terminal Dwell



Source: Kansas City Southern and Loop Capital Markets

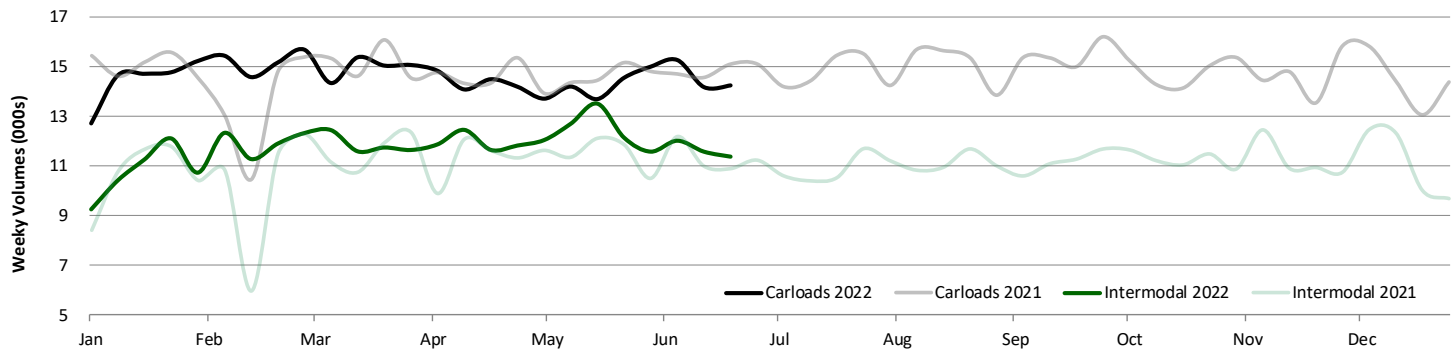
Kansas City Southern Volumes Through Week Ending 6/25/22 (US + Mexico)


Reporting Segment	Commodity	Year to Date			Q2 Quarter-to-Date			Week Ending 6/25/22		
		2021	2022	Δ	2021	2022	Δ	2021	2022	Δ
Chemicals & Plastics (14% of Sales)	Chemicals	86.8	85.7	(1.3%)	43.5	41.4	(4.9%)	3.7	3.6	(3.2%)
	Metallic Ores	4.2	4.2	(0.0%)	2.1	2.1	(4.0%)	0.2	0.2	2.1%
	Total Chemicals & Plastics	91.0	89.9	(1.2%)	45.6	43.4	(4.9%)	3.9	3.7	(2.9%)
Metals & Scrap (8% of Sales)	Metals & Products	43.5	58.2	33.8%	21.8	29.8	37.1%	1.9	2.5	32.9%
	Iron & Steel Scrap	12.4	11.4	(8.3%)	6.4	6.2	(2.7%)	0.5	0.6	7.7%
	Total Metals & Scrap	55.9	69.6	24.5%	28.2	36.1	28.1%	2.4	3.1	27.2%
Forest Products (9% of Sales)	Pulp, Paper, & Allied Products	37.9	40.5	6.9%	19.0	19.7	3.8%	1.7	1.7	2.0%
	Lumber & Wood Products	5.5	6.1	10.7%	3.0	3.2	5.8%	0.3	0.3	4.3%
	Waste & Other Scrap	4.7	5.5	17.5%	2.3	2.7	20.0%	0.2	0.2	(7.4%)
	Primary Forest Products	0.3	0.3	(2.5%)	0.1	0.1	14.0%	0.0	0.0	60.0%
	Total Forest Products	48.4	52.4	8.3%	24.3	25.6	5.6%	2.1	2.2	1.7%
Grain (10% of Sales)	Grain	72.4	86.6	19.5%	38.2	41.5	8.9%	3.1	3.8	23.5%
	Farm Products Ex. Grain	2.0	1.4	(28.8%)	0.9	0.9	2.2%	0.0	0.1	73.5%
	Total Grain	74.4	88.0	18.3%	39.1	42.5	8.7%	3.1	3.9	24.3%
Automotive (9% of Sales)	Motor Vehicles & Equipment	44.6	49.7	11.4%	22.7	24.6	8.5%	1.8	1.9	3.1%
Utility Coal (4% of Sales)	Coal	75.5	72.2	(4.5%)	37.7	32.6	(13.6%)	3.4	2.4	(29.0%)
Petroleum & Crude Oil (14% of Sales)	Petroleum Products	124.3	88.4	(28.9%)	59.8	43.5	(27.2%)	3.7	3.4	(9.1%)
Food Products (5% of Sales)	Grain Mill Products	17.1	17.6	2.6%	8.2	9.0	8.8%	0.5	1.0	104.0%
	Food & Kindred Products	10.2	11.8	15.9%	4.7	5.9	24.8%	0.4	0.4	20.6%
	Total Food Products	27.4	29.4	7.6%	12.9	14.8	14.6%	0.9	1.4	69.3%
Other Industrial (5% of Sales)	All Other Carloads	20.5	22.0	7.4%	10.1	11.2	10.6%	1.0	0.8	(18.1%)
	Stone, Clay, & Glass Products	23.0	22.8	(0.7%)	11.7	11.7	(0.3%)	0.9	1.0	8.1%
	Total Other Industrial	43.5	44.8	3.1%	21.8	22.9	4.7%	1.9	1.8	(5.5%)
Frac Sand (1% of Sales)	Crushed Stone, Sand, & Gravel	21.3	23.3	8.9%	10.9	10.3	(5.0%)	0.9	1.0	7.4%
Coal & Petroleum Coke (2% of Sales)	Coke	25.5	27.4	7.2%	13.5	13.4	(0.8%)	1.2	1.2	(1.8%)
Ores & Minerals (1% of Sales)	Non-metallic Minerals	2.4	1.6	(33.6%)	1.1	0.8	(30.8%)	0.1	0.1	(32.9%)
TOTAL CARLOADS		634.3	636.6	0.4%	317.5	310.5	(2.2%)	25.5	26.1	2.1%
Intermodal (13% of Sales)	Containers	464.9	492.4	5.9%	237.6	247.2	4.0%	18.4	19.5	5.5%
	Trailers	4.8	4.2	(12.8%)	2.1	2.1	1.0%	0.1	0.2	46.6%
	TOTAL INTERMODAL	469.8	496.6	5.7%	239.7	249.3	4.0%	18.6	19.6	5.8%
TOTAL		1,104.0	1,133.2	2.6%	557.2	559.8	0.5%	44.1	45.7	3.7%

Figure 66: KCS Total System Quarterly Volume Growth and Associated YoY Comps


Source (all charts and tables): Kansas City Southern and Loop Capital Markets

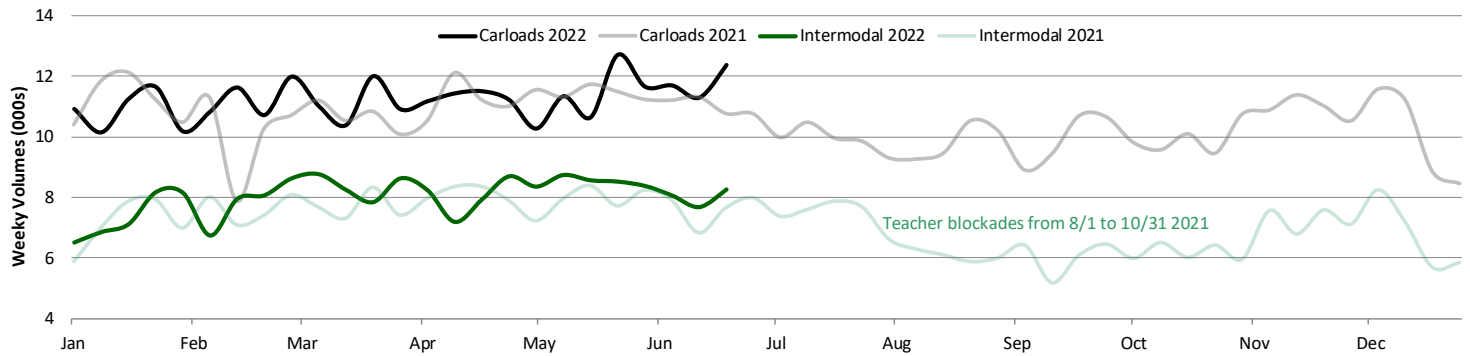
Kansas City Southern Volumes Through Week Ending 6/25/22 (US Only)



Reporting Segment	Commodity	Year to Date			Q2 Quarter-to-Date			Week Ending 6/25/22		
		2021	2022	Δ	2021	2022	Δ	2021	2022	Δ
Chemicals & Plastics	Chemicals	57.2	51.5	(10.0%)	28.7	24.8	(13.6%)	2.3	2.0	(12.1%)
	Metallic Ores	3.7	3.8	2.0%	1.9	1.9	(2.5%)	0.2	0.2	0.0%
	Total Chemicals & Plastics	61.0	55.3	(9.2%)	30.6	26.7	(12.9%)	2.5	2.2	(11.3%)
Metals & Scrap	Metals & Products	12.8	12.5	(2.6%)	6.5	6.0	(7.7%)	0.5	0.5	(3.6%)
	Iron & Steel Scrap	8.1	6.4	(20.4%)	4.3	3.6	(15.1%)	0.4	0.3	(20.1%)
	Total Metals & Scrap	20.9	18.9	(9.5%)	10.7	9.6	(10.6%)	0.9	0.8	(10.7%)
Forest Products	Pulp, Paper, & Allied Products	29.5	31.8	7.7%	14.7	15.4	5.1%	1.3	1.4	6.0%
	Lumber & Wood Products	5.3	5.6	5.9%	2.8	2.9	1.3%	0.2	0.2	5.2%
	Waste & Other Scrap	2.7	3.0	10.4%	1.3	1.4	13.3%	0.1	0.1	(6.5%)
	Primary Forest Products	0.3	0.3	(4.1%)	0.1	0.1	14.0%	0.0	0.0	60.0%
	Total Forest Products	37.7	40.6	7.6%	18.9	19.8	5.1%	1.6	1.7	5.4%
Grain	Grain	36.3	44.1	21.4%	19.1	21.2	11.1%	1.8	1.8	(2.0%)
	Farm Products Ex. Grain	1.0	0.6	(40.5%)	0.5	0.3	(32.0%)	0.0	0.0	(25.8%)
	Total Grain	37.3	44.7	19.7%	19.6	21.5	10.0%	1.9	1.8	(2.4%)
Automotive	Motor Vehicles & Equipment	8.2	12.6	54.2%	4.0	6.6	67.8%	0.3	0.5	75.0%
Utility Coal	Coal	75.2	71.8	(4.5%)	37.5	32.4	(13.7%)	3.4	2.4	(29.1%)
Petroleum & Crude Oil	Petroleum Products	57.6	47.2	(18.1%)	26.0	23.5	(9.4%)	1.6	1.8	12.7%
Food Products	Grain Mill Products	12.0	12.3	1.9%	5.9	6.0	1.8%	0.4	0.6	57.0%
	Food & Kindred Products	8.2	10.3	26.4%	3.7	5.2	41.3%	0.3	0.4	30.8%
	Total Food Products	20.2	22.6	11.8%	9.5	11.1	17.0%	0.6	0.9	45.7%
Other Industrial	All Other Carloads	12.2	11.2	(7.8%)	5.8	5.2	(10.8%)	0.6	0.3	(44.4%)
	Stone, Clay, & Glass Products	6.6	7.3	10.0%	3.4	3.7	7.6%	0.3	0.3	16.1%
	Total Other Industrial	18.8	18.5	(1.5%)	9.3	8.9	(4.0%)	0.9	0.7	(26.2%)
Frac Sand	Crushed Stone, Sand, & Gravel	13.7	16.0	16.4%	7.1	7.2	2.3%	0.6	0.7	12.5%
Coal & Petroleum Coke	Coke	16.1	18.3	14.3%	8.6	9.0	4.6%	0.8	0.7	(11.8%)
Ores & Minerals	Non-metallic Minerals	0.4	0.5	48.4%	0.2	0.3	73.7%	0.0	0.0	126.7%
TOTAL CARLOADS		367.1	367.2	0.0%	181.9	176.7	(2.8%)	15.1	14.2	(5.6%)
Intermodal	Containers	272.8	291.4	6.8%	139.9	146.3	4.5%	10.8	11.2	4.0%
	Trailers	4.8	3.9	(19.2%)	2.1	1.9	(7.5%)	0.1	0.2	39.1%
	TOTAL INTERMODAL	277.6	295.3	6.4%	142.0	148.2	4.3%	10.9	11.4	4.4%
TOTAL		644.8	662.5	2.8%	323.9	324.9	0.3%	26.0	25.6	(1.4%)

Source (all charts and tables): Kansas City Southern and Loop Capital Markets

Kansas City Southern de Mexico Volumes Through Week Ending 6/25/22 (Mexico Only)



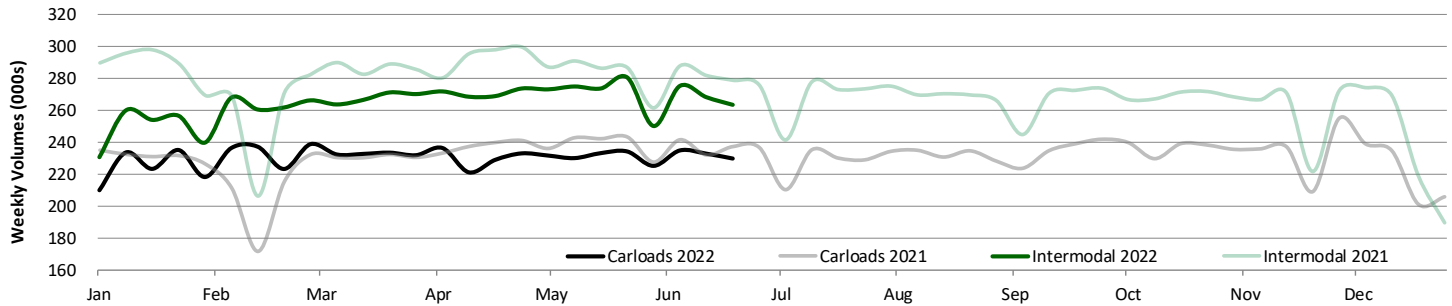
Reporting Segment	Commodity	Year to Date			Q2 Quarter-to-Date			Week Ending 6/25/22		
		2021	2022	Δ	2021	2022	Δ	2021	2022	Δ
Chemicals & Plastics	Chemicals	29.6	34.2	15.5%	14.8	16.5	12.0%	1.3	1.5	12.3%
	Metallic Ores	0.4	0.3	(17.5%)	0.2	0.2	(16.9%)	0.0	0.0	26.7%
	Total Chemicals & Plastics	30.0	34.5	15.1%	15.0	16.7	11.6%	1.4	1.5	12.4%
Metals & Scrap	Metals & Products	30.7	45.7	49.0%	15.3	23.9	56.1%	1.4	2.0	46.2%
	Iron & Steel Scrap	4.3	5.0	14.3%	2.1	2.6	21.8%	0.2	0.3	71.5%
	Total Metals & Scrap	35.0	50.7	44.7%	17.4	26.5	51.9%	1.5	2.3	48.9%
Forest Products	Pulp, Paper, & Allied Products	8.4	8.8	3.9%	4.3	4.3	(0.7%)	0.4	0.3	(11.5%)
	Waste & Other Scrap	2.0	2.5	27.0%	1.0	1.3	28.2%	0.1	0.1	(8.5%)
	Lumber & Wood Products	0.2	0.5	122.7%	0.1	0.3	97.2%	0.0	0.0	(3.8%)
	Primary Forest Products	-	0.0		-	-		-	-	
	Total Forest Products	10.7	11.8	10.8%	5.4	5.8	7.2%	0.5	0.4	(10.5%)
Grain	Grain	36.1	42.5	17.7%	19.0	20.3	6.7%	1.3	2.0	60.5%
	Farm Products Ex. Grain	0.9	0.8	(15.9%)	0.4	0.6	39.6%	0.0	0.1	244.4%
	Total Grain	37.1	43.3	16.8%	19.5	20.9	7.4%	1.3	2.1	63.1%
Automotive	Motor Vehicles & Equipment	44.6	49.7	11.4%	22.7	24.6	8.5%	1.8	1.9	3.1%
Utility Coal	Coal	0.3	0.4	8.6%	0.2	0.2	(3.4%)	0.0	0.0	(14.3%)
Petroleum & Crude Oil	Petroleum Products	66.7	41.2	(38.2%)	33.8	20.0	(40.8%)	2.1	1.6	(25.4%)
Food Products	Grain Mill Products	5.1	5.3	4.3%	2.4	3.0	26.0%	0.1	0.4	235.1%
	Food & Kindred Products	2.1	1.5	(25.6%)	1.0	0.7	(34.4%)	0.1	0.1	(15.4%)
	Total Food Products	7.2	6.8	(4.3%)	3.4	3.7	7.9%	0.2	0.5	141.6%
Other Industrial	Stone, Clay, & Glass Products	16.3	15.5	(5.0%)	8.3	8.0	(3.6%)	0.7	0.7	4.9%
	All Other Carloads	8.3	10.8	29.7%	4.3	6.0	40.0%	0.4	0.5	25.7%
	Total Other Industrial	24.6	26.3	6.7%	12.6	14.0	11.2%	1.0	1.2	12.4%
Frac Sand	Crushed Stone, Sand, & Gravel	7.6	7.3	(4.6%)	3.8	3.1	(18.7%)	0.3	0.3	(1.5%)
Coal & Petroleum Coke	Coke	9.5	9.0	(4.7%)	4.9	4.4	(10.2%)	0.4	0.5	16.2%
Ores & Minerals	Non-metallic Minerals	2.1	1.1	(48.2%)	0.9	0.5	(49.8%)	0.1	0.1	(52.0%)
	TOTAL CARLOADS	275.3	282.0	2.4%	139.6	140.4	0.5%	10.8	12.4	14.9%
Intermodal	Containers	192.1	201.0	4.6%	97.6	101.0	3.4%	7.7	8.3	7.7%
	Trailers	-	0.3		-	0.2		-	0.0	
	TOTAL INTERMODAL	192.1	201.3	4.8%	97.6	101.1	3.6%	7.7	8.3	7.8%
	TOTAL	467.5	483.3	3.4%	237.3	241.5	1.8%	18.4	20.6	11.9%

Source (all charts and tables): Kansas City Southern and Loop Capital Markets

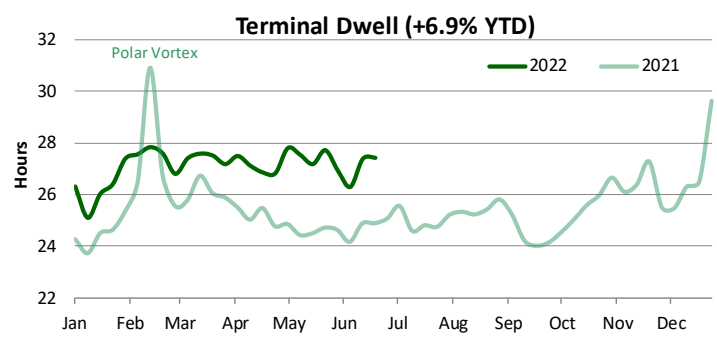
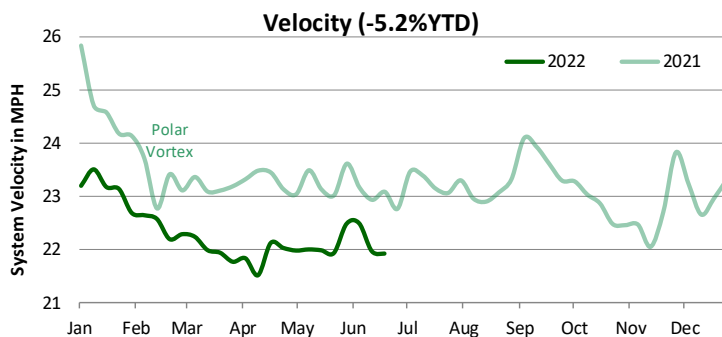


Total Volumes - United States (UP, BNSF, CSX, NS, KCS US)

Volumes Through Week Ending 6/25/22



Commodity Roll Up	Commodity	Year-to-Date			Q2 Quarter-to-Date			Week Ending 6/25/22		
		2021	2022	Δ	2021	2022	Δ	2021	2022	Δ
Coal	Coal	1,564.2	1,627.6	4.1%	806.7	784.0	(2.8%)	66.6	62.0	(6.8%)
	Coke	84.9	82.8	(2.5%)	43.1	40.5	(6.0%)	3.3	3.7	11.5%
	Total Coal	1,649.1	1,710.4	3.7%	849.9	824.5	(3.0%)	69.9	65.7	(6.0%)
Chemicals	Chemicals	813.7	855.9	5.2%	412.7	411.8	(0.2%)	31.6	32.7	3.5%
	Petroleum Products	271.9	234.9	(13.6%)	132.9	115.7	(12.9%)	10.2	9.9	(3.1%)
	Total Chemicals	1,085.6	1,090.8	0.5%	545.6	527.5	(3.3%)	41.8	42.6	1.9%
Automotive	Motor Vehicles & Equipment	333.0	327.3	(1.7%)	151.7	164.4	8.4%	12.7	12.9	2.0%
Building Materials	Crushed Stone, Sand & Gravel	440.6	484.4	9.9%	245.4	254.8	3.8%	20.5	21.9	6.7%
	Stone, Clay, & Glass Products	191.8	188.7	(1.6%)	103.0	96.3	(6.5%)	8.2	7.8	(5.8%)
	Lumber & Wood Products	88.5	85.3	(3.6%)	45.6	41.1	(9.8%)	3.4	3.1	(8.7%)
	Total Building Materials	720.9	758.3	5.2%	394.0	392.2	(0.4%)	32.2	32.8	1.9%
Agricultural	Grain	626.0	571.6	(8.7%)	304.5	271.5	(10.8%)	22.0	21.7	(1.2%)
	Grain Mill Products	230.0	232.8	1.2%	112.8	113.0	0.2%	9.3	9.7	3.7%
	Food & Kindred Products	146.9	158.6	8.0%	72.2	76.7	6.2%	5.8	6.1	5.0%
	Farm Products, Ex-Grain	21.8	18.5	(15.2%)	10.4	8.6	(17.5%)	0.6	0.6	3.5%
	Total Agricultural	1,024.8	981.5	(4.2%)	499.9	469.8	(6.0%)	37.7	38.1	1.0%
Metal	Metals & Products	227.9	213.7	(6.2%)	117.1	102.8	(12.1%)	9.8	8.2	(16.4%)
Ores & Minerals	Metallic Ores	143.6	119.8	(16.6%)	82.7	64.5	(22.1%)	6.3	5.9	(6.7%)
	Non-metallic Minerals	91.8	90.2	(1.7%)	50.5	46.7	(7.6%)	4.4	4.0	(9.1%)
	Total Metals & Minerals	235.4	210.0	(10.8%)	133.3	111.2	(16.6%)	10.7	9.9	(7.7%)
Paper & Forest Products	Pulp, Paper, & Allied Products	138.5	134.7	(2.8%)	68.3	65.1	(4.7%)	6.0	5.2	(13.0%)
	Primary Forest Products	25.3	28.8	13.7%	12.4	14.5	16.5%	1.2	1.4	12.4%
	Total Paper & Forest	163.8	163.5	(0.2%)	80.7	79.6	(1.4%)	7.2	6.6	(8.7%)
Waste, Scrap & Other	Municipal Waste & Other Scrap	90.2	94.9	5.3%	46.3	48.3	4.3%	3.9	3.8	(3.0%)
	Iron & Steel Scrap	101.9	104.7	2.7%	51.7	53.0	2.5%	4.5	4.1	(7.9%)
	All Other Carloads	157.0	133.6	(14.9%)	82.5	65.1	(21.0%)	6.9	5.1	(25.6%)
	Total Waste & Scrap	349.1	333.2	(4.6%)	180.4	166.4	(7.8%)	15.3	13.0	(14.6%)
TOTAL CARLOADS		5,789.6	5,788.8	(0.0%)	2,952.5	2,838.5	(3.9%)	237.3	229.9	(3.1%)
Intermodal	Containers	6,531.2	6,187.5	(5.3%)	3,293.3	3,119.1	(5.3%)	257.6	247.5	(3.9%)
	Trailers	547.7	452.5	(17.4%)	266.5	201.2	(24.5%)	21.3	16.1	(24.7%)
	TOTAL INTERMODAL	7,078.9	6,640.1	(6.2%)	3,559.8	3,320.3	(6.7%)	279.0	263.5	(5.5%)
TOTAL		12,868.5	12,428.8	(3.4%)	6,512.4	6,158.8	(5.4%)	516.3	493.4	(4.4%)

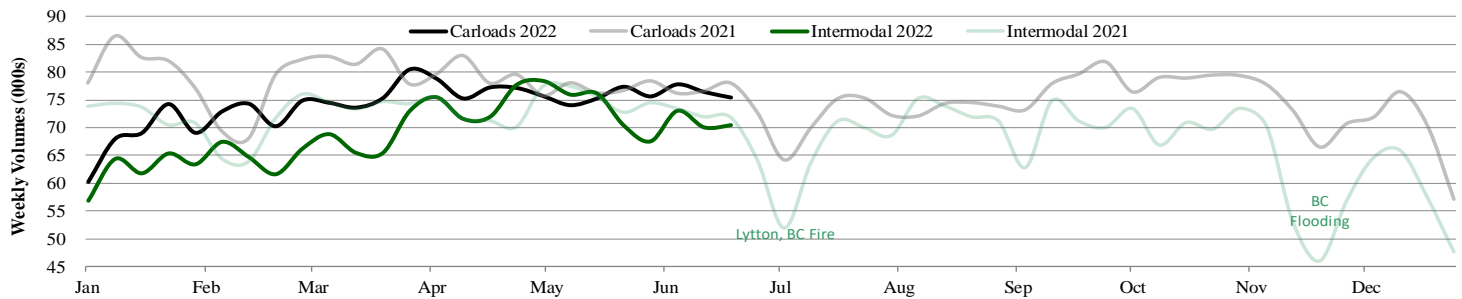


Source (all charts and tables): Association of American Railroads and Loop Capital Markets

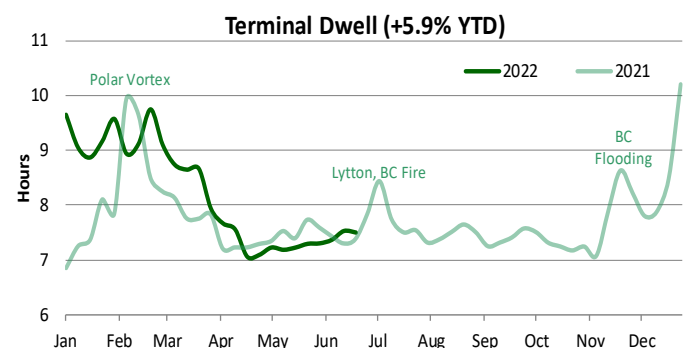
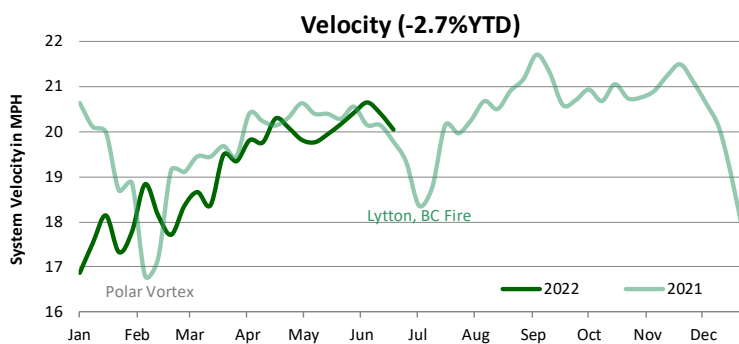


Total Volumes – Canada (CN, CP)

Volumes Through Week Ending 6/25/22



Commodity Roll Up	Commodity	Year-to-Date			Q2 Quarter-to-Date			Week Ending 6/25/22		
		2021	2022	Δ	2021	2022	Δ	2021	2022	Δ
Coal	Coal	180.6	205.8	13.9%	89.2	104.8	17.5%	7.4	7.9	7.2%
	Coke	23.5	26.6	13.0%	11.3	14.2	25.3%	1.0	1.0	2.3%
	Total Coal	204.1	232.3	13.8%	100.5	119.0	18.4%	8.4	8.9	6.6%
Chemicals	Chemicals	314.4	301.6	(4.1%)	159.9	154.0	(3.7%)	11.9	11.9	0.0%
	Petroleum Products	205.2	220.9	7.7%	92.9	107.3	15.5%	8.0	9.2	15.0%
	Total Chemicals	519.6	522.5	0.6%	252.8	261.3	3.4%	19.9	21.1	6.1%
Automotive	Total Motor Vehicles & Equipme	110.1	112.9	2.5%	48.3	58.5	21.2%	4.4	5.0	13.4%
Building Materials	Crushed Stone, Sand & Gravel	76.9	88.1	14.7%	41.8	49.5	18.4%	3.8	4.4	15.2%
	Lumber & Wood Products	79.7	73.9	(7.3%)	40.7	38.3	(6.0%)	3.1	3.1	(0.3%)
	Stone, Clay, & Glass Products	31.7	29.3	(7.7%)	16.5	15.6	(5.1%)	1.1	1.5	26.5%
	Total Building Materials	188.3	191.3	1.6%	98.9	103.4	4.5%	8.1	9.0	10.9%
Agricultural	Grain	251.0	176.2	(29.8%)	123.1	83.4	(32.3%)	8.9	6.3	(28.7%)
	Farm Products, Ex-Grain	80.3	37.2	(53.7%)	34.9	17.3	(50.3%)	1.9	1.8	(4.8%)
	Food & Kindred Products	66.8	59.5	(10.9%)	32.7	29.4	(10.1%)	2.9	2.4	(15.4%)
	Grain Mill Products	41.7	41.9	0.3%	19.9	20.3	2.0%	1.9	1.7	(8.4%)
	Total Agricultural	439.9	314.8	(28.4%)	210.5	150.3	(28.6%)	15.5	12.3	(20.8%)
Metal	Metals & Products	50.8	49.9	(1.8%)	24.7	25.2	2.0%	2.0	2.0	(3.7%)
Ores & Minerals	Metallic Ores	277.2	263.5	(5.0%)	140.1	132.6	(5.4%)	12.5	10.6	(15.7%)
	Non-metallic Minerals	31.5	32.1	1.8%	15.1	16.4	8.4%	0.9	0.9	1.5%
	Total Metals & Minerals	308.8	295.6	(4.3%)	155.2	149.0	(4.0%)	13.4	11.5	(14.6%)
Paper & Forest	Pulp, Paper, & Allied Products	61.1	57.0	(6.6%)	29.6	28.8	(2.5%)	2.4	2.2	(10.2%)
	Primary Forest Products	25.0	23.6	(5.5%)	13.4	12.0	(10.5%)	1.1	1.0	(11.0%)
	Total Paper & Forest	86.1	80.7	(6.3%)	42.9	40.8	(5.0%)	3.5	3.2	(10.5%)
Waste, Scrap & Other	Municipal Waste & Other Scrap	10.1	9.9	(2.5%)	5.8	5.2	(11.1%)	0.5	0.5	(0.9%)
	Iron & Steel Scrap	23.8	24.6	3.4%	11.4	13.5	18.2%	1.0	1.1	16.8%
	All Other Carloads	36.4	27.2	(25.1%)	18.4	13.2	(28.3%)	1.4	1.0	(23.8%)
	Total Waste & Scrap	70.3	61.7	(12.2%)	35.6	31.9	(10.6%)	2.8	2.6	(6.0%)
TOTAL CARLOADS		1,977.9	1,861.7	(5.9%)	969.5	939.3	(3.1%)	78.0	75.4	(3.3%)
TOTAL INTERMODAL		1,825.3	1,730.9	(5.2%)	915.3	900.1	(1.7%)	71.8	70.5	(1.8%)
TOTAL		3,803.2	3,592.6	(5.5%)	1,884.7	1,839.4	(2.4%)	149.8	145.9	(2.6%)



Source (all charts and tables): Association of American Railroads and Loop Capital Markets.

Valuation UNP

Our \$278 price target is based on 21x estimated 12-24-month EPS of \$13.25. UNP currently trades at 17.7x consensus NTM P/E versus 1, 3, and 5-year averages of 21.6x, 20.7x, and 19.7x, respectively.

Risks to Our Analysis UNP

- COVID-driven economic weakness given any resurgence in cases.
- Execution risk as all the railroads manage crew headcount to maximize near-term earnings...and look where that got them.
- The stock's valuation, which is rich versus long term historical levels.

Valuation CSX

Our \$38 price target is based on 18.5x estimated 12-24-month EPS of \$2.07. CSX currently trades at 15.5x consensus NTM P/E versus 1, 3, and 5-year averages of 20.4x, 19.2x, and 19.2x, respectively.

Risks to Our Analysis CSX

- COVID-driven economic weakness given any resurgence in cases.
- Execution risk as all the railroads manage crew headcount to maximize near-term earnings.
- The stock's valuation, which is rich versus long term historical levels.
- *Upside risk for Hold-rated stocks:* Future earnings higher than anticipated.

Valuation NSC

Our \$323 price target is based on 20x estimated 12-24-month EPS of \$16.15. NSC currently trades at a NTM consensus P/E of 15.7x versus 1, 3, and 5-year averages of 21.3x, 19.9x, and 19.1x, respectively.

Risks to Our Analysis NSC

- COVID-driven economic weakness, including a potential economic double-dip due to rising case counts in most states.
- Execution risk as all the railroads aggressively manage crew headcount to maximize near-term earnings.
- The stock's valuation, which is rich versus long term historical levels.

Valuation CNR-TSE

Our C\$171 price target is based on 22x estimated 12-24 month EPS of C\$7.77 CNR currently trades at 19.9x consensus NTM P/E versus 1, 3, and 5 year averages of 23x, 21.7x, and 20.6x, respectively.

Risks to Our Analysis CNR-TSE

- Macro risk related to any resurgence of COVID-19.
- Industry-wide congestion and company specific operating inefficiencies.
- *Upside risk for Hold-rated stocks:* Company earnings in future periods higher than currently anticipated.

Valuation CP-TSE

Our C\$111 price target is based on 24x estimated 12-24 month EPS of C\$4.62. CP currently trades at 22.6x consensus NTM P/E versus 1, 3, and 5-year averages of 22.7x, 20.6x, and 19.3x, respectively.

Risks to Our Analysis CP-TSE

- Regulatory risk as CP seeks final approval to control Kansas City Southern (est. Q4 2022).
- COVID-driven economic weakness.
- Execution risk as all the railroads aggressively manage crew headcount to maximize near-term

earnings.

- Potentially changing trade patterns, primarily as it relates to US-China trade.

Public Companies Mentioned in this Report

Union Pacific Corporation (UNP:\$213.28-BUY)

CSX Corporation (CSX:\$29.06-HOLD)

Norfolk Southern Corporation (NSC:\$227.29-BUY)

Canadian National Railway Company (CNR-TSE:C\$144.79-HOLD)

Canadian Pacific Railway Limited (CP-TSE:C\$89.91-BUY)

IMPORTANT DISCLOSURES

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Rick Paterson who is principally responsible for the preparation of this report with respect to each subject security or issuer contained within this report certifies as of the date of the report that:

- (1) the recommendations and guidance expressed accurately reflects the research analyst's personal views;
- (2) no part of the compensation was, is, or will be directly, or indirectly, related to the specific recommendations or views expressed in this report.

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Investment Banking Services (Past 12 Months): Loop Capital Markets received, in the past 12 months, compensation for investment banking services from Union Pacific Corporation (UNP).

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Client: Loop Capital Markets currently has, or had within the past 12 months, the following entity(ies) as clients: Union Pacific Corporation (UNP)

Public Offering (Lead or Co-Manager): Loop Capital Markets acted as a lead or comanager in a public offering of equity and/or debt securities for Union Pacific Corporation (UNP) in the past 12 months.

Disclaimer

Information about our recommendations, holdings and investment decisions:

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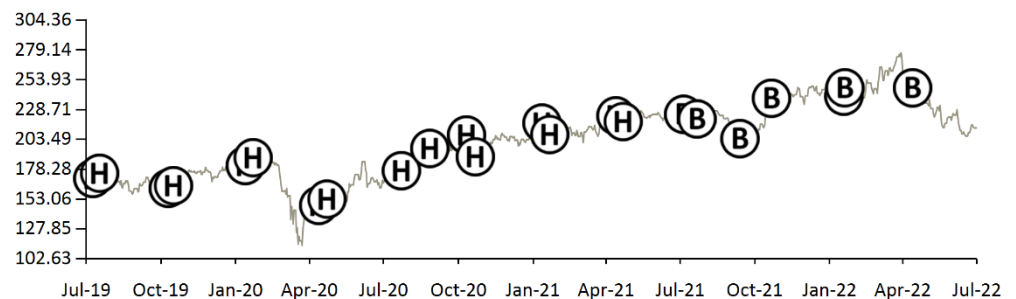
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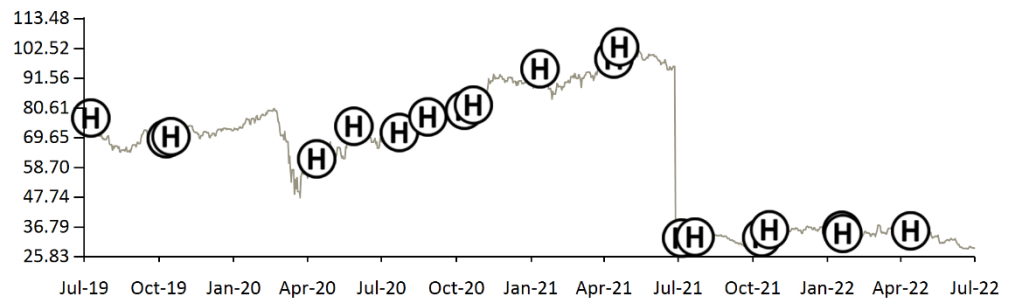
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Union Pacific Corporation Rating History as of 06/30/2022



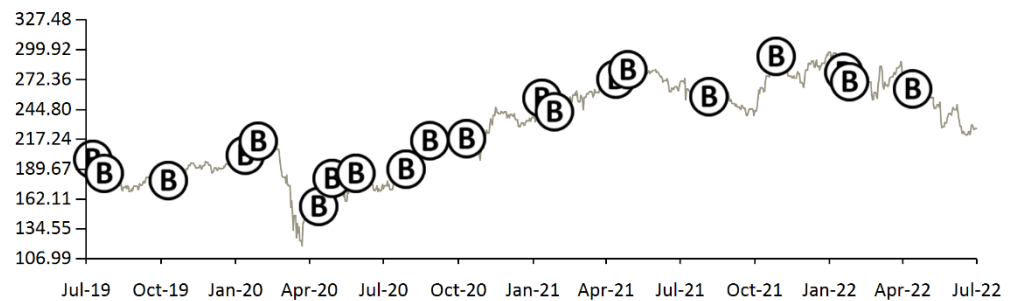
Date	Closing Price (\$)	Target Price (\$)	Analyst	Rating
10-Jul-19	169.57	179.00	Rick Paterson	HOLD
18-Jul-19	174.25	191.00	Rick Paterson	HOLD
11-Oct-19	161.39	185.00	Rick Paterson	HOLD
17-Oct-19	163.68	182.00	Rick Paterson	HOLD
14-Jan-20	180.80	186.00	Rick Paterson	HOLD
23-Jan-20	187.19	192.00	Rick Paterson	HOLD
13-Apr-20	146.90	165.00	Rick Paterson	HOLD
23-Apr-20	152.29	180.00	Rick Paterson	HOLD
24-Jul-20	176.12	178.00	Rick Paterson	HOLD
28-Aug-20	195.13	196.00	Rick Paterson	HOLD
12-Oct-20	206.35	214.00	Rick Paterson	HOLD
23-Oct-20	188.14	208.00	Rick Paterson	HOLD
13-Jan-21	216.61	210.00	Rick Paterson	HOLD
22-Jan-21	207.13	226.00	Rick Paterson	HOLD
14-Apr-21	222.60	235.00	Rick Paterson	HOLD
22-Apr-21	217.98	242.00	Rick Paterson	HOLD
06-Jul-21	223.81	269.00	Rick Paterson	BUY
23-Jul-21	220.15	270.00	Rick Paterson	BUY
14-Sep-21	203.41	252.00	Rick Paterson	BUY
22-Oct-21	237.59	259.00	Rick Paterson	BUY
19-Jan-22	239.49	261.00	Rick Paterson	BUY
21-Jan-22	246.33	271.00	Rick Paterson	BUY
14-Apr-22	246.21	278.00	Rick Paterson	BUY

CSX Corporation Rating History as of 06/30/2022



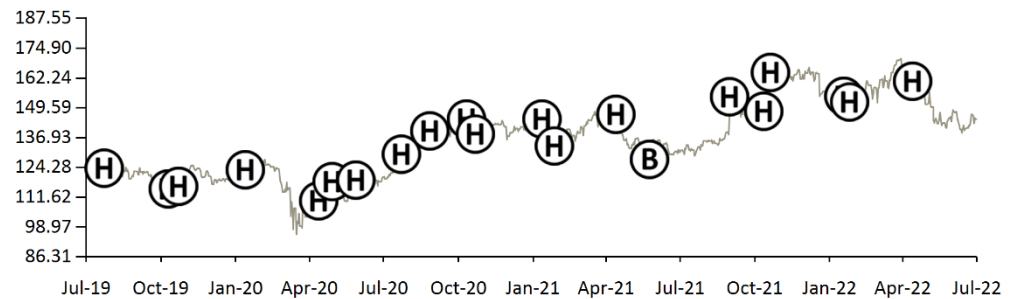
Date	Closing Price (\$)	Target Price (\$)	Analyst	Rating
10-Jul-19	76.58	81.00	Rick Paterson	HOLD
11-Oct-19	69.05	78.00	Rick Paterson	HOLD
17-Oct-19	69.78	81.00	Rick Paterson	HOLD
13-Apr-20	61.57	73.00	Rick Paterson	HOLD
29-May-20	73.60	76.00	Rick Paterson	HOLD
24-Jul-20	71.34	79.00	Rick Paterson	HOLD
28-Aug-20	77.07	86.00	Rick Paterson	HOLD
12-Oct-20	79.56	84.00	Rick Paterson	HOLD
23-Oct-20	81.29	86.00	Rick Paterson	HOLD
13-Jan-21	94.64	96.00	Rick Paterson	HOLD
14-Apr-21	98.36	102.00	Rick Paterson	HOLD
21-Apr-21	102.69	107.00	Rick Paterson	HOLD
06-Jul-21	32.40	36.00	Rick Paterson	HOLD
23-Jul-21	32.81	38.00	Rick Paterson	HOLD
13-Oct-21	32.58	35.00	Rick Paterson	HOLD
22-Oct-21	35.42	37.00	Rick Paterson	HOLD
19-Jan-22	35.25	40.00	Rick Paterson	HOLD
21-Jan-22	34.10	41.00	Rick Paterson	HOLD
14-Apr-22	35.06	38.00	Rick Paterson	HOLD

Norfolk Southern Corporation Rating History as of 06/30/2022

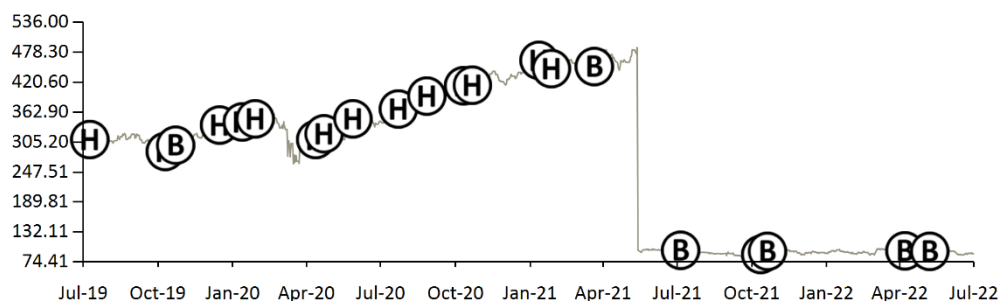


Date	Closing Price (\$)	Target Price (\$)	Analyst	Rating
10-Jul-19	198.21	233.00	Rick Paterson	BUY
24-Jul-19	184.99	236.00	Rick Paterson	BUY
11-Oct-19	178.50	227.00	Rick Paterson	BUY
14-Jan-20	201.70	235.00	Rick Paterson	BUY
29-Jan-20	214.83	237.00	Rick Paterson	BUY
13-Apr-20	154.29	208.00	Rick Paterson	BUY
29-Apr-20	180.33	214.00	Rick Paterson	BUY
29-May-20	184.98	221.00	Rick Paterson	BUY
30-Jul-20	188.87	235.00	Rick Paterson	BUY
28-Aug-20	215.03	255.00	Rick Paterson	BUY
12-Oct-20	217.23	246.00	Rick Paterson	BUY
13-Jan-21	254.48	273.00	Rick Paterson	BUY
28-Jan-21	241.79	279.00	Rick Paterson	BUY
14-Apr-21	271.84	295.00	Rick Paterson	BUY
29-Apr-21	280.70	321.00	Rick Paterson	BUY
06-Aug-21	256.01	312.00	Rick Paterson	BUY
28-Oct-21	293.17	325.00	Rick Paterson	BUY
19-Jan-22	278.06	317.00	Rick Paterson	BUY
27-Jan-22	269.75	326.00	Rick Paterson	BUY
14-Apr-22	263.06	323.00	Rick Paterson	BUY

Canadian National Railway Company Rating History as of 06/30/2022



Date	Closing Price (C\$)	Target Price (C\$)	Analyst	Rating
24-Jul-19	123.46	131.00	Rick Paterson	HOLD
11-Oct-19	114.78	126.00	Rick Paterson	HOLD
24-Oct-19	115.98	119.00	Rick Paterson	HOLD
14-Jan-20	122.95	124.00	Rick Paterson	HOLD
13-Apr-20	109.78	114.00	Rick Paterson	HOLD
29-Apr-20	117.81	121.00	Rick Paterson	HOLD
29-May-20	118.60	122.00	Rick Paterson	HOLD
24-Jul-20	129.53	127.00	Rick Paterson	HOLD
28-Aug-20	139.30	139.00	Rick Paterson	HOLD
12-Oct-20	144.43	146.00	Rick Paterson	HOLD
23-Oct-20	137.98	149.00	Rick Paterson	HOLD
13-Jan-21	144.40	151.00	Rick Paterson	HOLD
28-Jan-21	133.11	142.00	Rick Paterson	HOLD
14-Apr-21	146.42	150.00	Rick Paterson	HOLD
25-May-21	127.24	155.00	Rick Paterson	BUY
01-Sep-21	154.00	157.00	Rick Paterson	HOLD
13-Oct-21	147.81	158.00	Rick Paterson	HOLD
21-Oct-21	164.24	162.00	Rick Paterson	HOLD
19-Jan-22	154.05	166.00	Rick Paterson	HOLD
27-Jan-22	151.59	174.00	Rick Paterson	HOLD
14-Apr-22	160.43	171.00	Rick Paterson	HOLD

Canadian Pacific Railway Limited Rating History as of 06/30/2022


Date	Closing Price (C\$)	Target Price (C\$)	Analyst	Rating
10-Jul-19	307.91	338.00	Rick Paterson	HOLD
11-Oct-19	285.35	332.00	Rick Paterson	HOLD
24-Oct-19	297.21	340.00	Rick Paterson	BUY
17-Dec-19	336.19	340.00	Rick Paterson	HOLD
14-Jan-20	342.12	351.00	Rick Paterson	HOLD
29-Jan-20	348.56	365.00	Rick Paterson	HOLD
13-Apr-20	308.44	333.00	Rick Paterson	HOLD
23-Apr-20	319.27	338.00	Rick Paterson	HOLD
29-May-20	348.59	352.00	Rick Paterson	HOLD
24-Jul-20	367.70	382.00	Rick Paterson	HOLD
28-Aug-20	391.90	399.00	Rick Paterson	HOLD
12-Oct-20	412.11	417.00	Rick Paterson	HOLD
23-Oct-20	413.50	442.00	Rick Paterson	HOLD
13-Jan-21	461.45	480.00	Rick Paterson	HOLD
28-Jan-21	444.69	469.00	Rick Paterson	HOLD
22-Mar-21	448.60	553.00	Rick Paterson	BUY
06-Jul-21	95.09	105.00	Rick Paterson	BUY
13-Oct-21	86.69	103.00	Rick Paterson	BUY
21-Oct-21	92.74	104.00	Rick Paterson	BUY
08-Apr-22	94.35	111.00	Rick Paterson	BUY
08-May-22	93.28	102.00	Rick Paterson	BUY

Stock Ratings

Buy - The stock is expected to trade higher on an absolute basis or outperform relative to the market or its peer stocks over the next 12 months.

Hold - The stock is expected to perform in line with the market or its peer stocks over the next 12 months.

Sell - The stock is expected to trade lower on an absolute basis or underperform relative to the market or its peer stocks over the next 12 months.

Ratings Distribution for Loop Capital Markets as of June 30, 2022

			IB Serv./Past 12 Mos.	
	Count	% of total	Count	% of total
Buy	177	59.00%	33	18.64%
Hold	117	39.00%	11	9.40%
Sell	6	2.00%	0	0.00%

Source: Loop Capital Markets