N.C. Department of Transportation

Freight & Logistics

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May 2023

Cost of Congestion & Key Freight Bottlenecks — April 2023 Recap

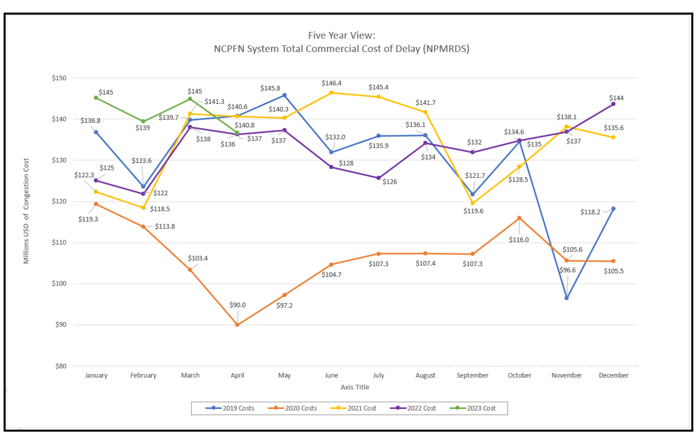
Delay and congestion cost commercial industry millions of dollars each year. This cost eventually becomes a burden on the sustainability of the freight transportation sector, and the cost of goods and services for the end-consumer. This can be as straightforward as friction between volume and capacity, but freight congestion can also represent the challenge of reconciling network functionality with economic behavior.

Performance Measure	Mar-23	% CHANGE (MoM)	% CHANGE (YoY)	Apr-23	% CHANGE (MoM)	% CHANGE (YoY)
NCPFN System Total Commercial Cost of Delay	$ 144,896,447	3.9%	5.0%	$ 136,703,629	-5.7%	0.3%
NCPFN System Commercial Average Daily Cost per VMT	$ 0.31	6.9%	3.3%	$ 0.31	0.0%	0.0%
Commercial VMT on the NCPFN System	469,059,581	-2.3%	0.4%	439,521,817	-6.3%	-1.3%
NCPFN System Com. Vehicle-hours of Delay (#Hours)	1,441,899	3.9%	5.0%	1,360,371	-5.7%	0.3%

NPMRDS Network Analysis

Rank	Previous Rank†	Top Freight Bottleneck Locations - December 1, 2022 - May 31, 2023	Average Daily Delay*	Division
1	225	I-40 East at Gordon Road, Exit 420 east of Raleigh	2 h 51 m	5
2	1	I-40 West at US-276, Exit 20 between Clyde & Waterville Lake	4 h 41 m	13
3	3	I-77 South at Nations Ford Road, Exit 4 in south Charlotte	1 h 44 m	10
4	128	I-40 West at US-1, Exit 293 in Cary	2 h 49 m	5
5	7	I-26 West at NC-146, Exit 37 south of Asheville	2 h 35 m	13
6	6	I-485 East at NC-16, Providence Road, Exit 57 in Charlotte	1 h 30 m	10
7	11	I-77 North at Tyvola Road, Exit 5 in Charlotte	1 h 44 m	10
8	5	I-77 North at Woodlawn Road, Exit 6 in Charlotte	49 m	10
9	10	I-77 North at I-277, US-74, Exit 9 in Charlotte	45 m	10
10	14	US-74 East at Sam Newell Road in southeast Charlotte	3 h 14 m	10

† Previous rank based on rolling six-month analysis ** hours per day in which congestion was present*



Congestion costs on the Statewide Priority Highway Freight Network in April 2023 declined by nearly 5.7% over March 2023 to $136.7M. This decline in costs is concurrent with a 6.3% reduction in overall commercial VMT on the network in April, continuing a three month downward trend since an 18-month peak in January 2023. By comparison, April 2023 figures were very close to those one-year-prior with only marginal YOY percent changes. Overall cost increased YOY by less than a half a percent while total commercial VMT on the network declined by a marginal 1.3%. Average daily cost per VMT was unchanged by comparison to both March 2023 and April 2022. April's Freight Network Bottleneck Top 10 analysis, based on a six-month rolling capture, introduced some new locations to the rankings. Urban congestion zones and work zones continue to have a strong influence on bottlenecks and congestion...

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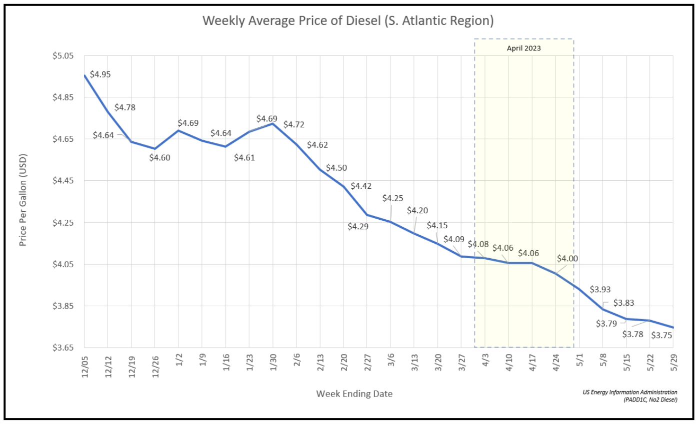
Cost of Congestion & Key Freight Bottlenecks, *cont.*



...including more than 570 agency-reported incidents and events occurring on the two biggest movers entering the top 10 rankings: I-40 East at Gordon Road, and I-40 West at US-1, both in the Raleigh metropolitan area. While congestion costs and total commercial VMT were on the decline, diesel prices in the region were also trending downward in April reaching their lowest point since February 2022. In May, this progression continued with diesel reaching $3.75/gallon by the end of the month, its lowest point since January 2022. Weakening consumer demand and post-COVID market rationalization is most likely the driving factor in declining congestion costs, total commercial VMT on the freight network, and declining fuel prices.

Key Supply Chain Issues Facing North Carolina

NC Ports Recognized as Most Productive Port in North America Last Year: NC Ports' Port of Wilmington ranks as the most productive container port in North America according to the latest Container Port Performance Index (CPPI), a technical report produced by the World Bank/S&P Global Market Intelligence. The report also ranks Wilmington as the 44th most productive port globally. The Port of Wilmington rose three spots in the rankings for North America and five spots up from 49th a year ago out of the 348 global ports included in the study. Ratings are based on the time vessels spent in port to complete workloads over the course of 2022. Container volume growth on the US East Coast has been robust over the past year and coastwise projections remain optimistic. NC Ports expects container business to account for 47% of their revenue for the Port of Wilmington and 35% of their total agency revenue for FY23 while projections for FY24 also suggest growth in both metrics. *(Source: NC Ports Press Release, May 22, 2023)*

"Reports of [A Freight Recession] Are Greatly Exaggerated...": A *freight recession* is the hot topic right now in conversations about the US supply chain. From a contraction of global purchasing indexes, weakening consumer demand and spending on goods, and both manufacturers and retailers sitting on excess inventories, the economic picture looks very much like a recession. According to NCDOT analysis, overall VMT on the statewide priority freight network is on a downward trajectory and diesel prices in the region are falling rapidly recently breaking the $4 floor signaling reduced demand. Industry analysts report that ocean freight orders are down by nearly half YOY which has a ripple effect on demand for trucking and railroad freight services. These sectors have experienced significant disruptions, particularly in trucking where smaller firms including independent owner-operators are at increased risk of financial collapse. Yet, even larger trucking firms such as JB Hunt have reported less-than-expected earnings prompting their CEO to declare a "freight recession," further adding fuel to the conversation. Despite the attention-catching headlines, there are compelling signs that the contraction is more accurately a market correction from the previous two years of unprecedented import activity during the wind-down of the COVID-19 pandemic. During this period of recovery manufacturers and retailers fought the sting of stockouts and backorders during 2021 and early 2022 by aggressively adapted their inventory management practices, transitioning from a just-in-time paradigm to a just-in-case approach. These higher inventory levels have crowded warehouse and store shelves while this whiplash of the race to restock and serve unprecedented demand is reflected in current bearish procurement metrics. As US economic activity has recalibrated post-pandemic, there are signs of normalization and even growth. Retailers and manufacturers are working through increased inventories and right-sizing orders to demand. According to the Wall Street Journal, retail giant Target's inventories were 16% lower at the end of the last quarter than the same period last year. Activity at US ports also demonstrates growth as the past two months have seen an increase month-over-month in import container volumes at US ports and are above those from 2019, a more defensible comparison than last year. Some of the key commodities driving import volumes, such as wrought iron patio furniture, reflect more normal seasonal trends similar to pre-pandemic. DHL Global Forwarding's CEO recently signaled that many of their customers expect a rebound in trade orders in the second half of this year. In fact, according to a recent release of the Federal Reserve's Summary of Commentary on Current Economic Conditions, overall economic activity in most FED districts reported growth and increased consumer spending. Beyond manufacturing, the FED reported that the labor market remained robust, challenging businesses to find workers across various industries. A recent release from the US Bureau of Labor Statistics reported that unemployment in the transportation sector was 3.6% in May 2023, falling 0.9% from 4.5% in May 2022 and marginally less below 4.3% in May 2019. (May 2020 marked the highest transportation sector unemployment during the pandemic in May 2020 at 15.7%.) With increasing economic activity and growth, an upward trajectory for imports through US ports, and a strong labor market in the freight transportation sector, the alleged *freight recession* looks far more like the US supply chain adjusting to the new paradigm, which incidentally looks a lot like 2019...