



# Grain Transportation Report

A weekly publication of the Agricultural Marketing Service  
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August 10, 2023

## WEEKLY HIGHLIGHTS

### CPKC Petitions STB To Keep Use of UP Line for Moving Grain to Gulf

On August 1, Canadian Pacific Kansas City (CPKC) [filed a petition \(pdf\)](#) with the Surface Transportation Board (STB) to prevent Union Pacific Railroad (UP) from blocking grain shipments to the ports of Houston and Galveston, TX (Houston/Galveston). The route involves a UP line that CPKC believes it has rights to use. In 1988, when UP acquired the Missouri-Kansas-Texas Railroad (MKT), the Interstate Commerce Commission (STB's predecessor) granted trackage rights to the Kansas City Southern Railroad (KCS). The rights enabled KCS to move grain from Kansas City to the ports of Houston/Galveston by relying on a UP-owned line between Beaumont, TX, and the ports. The access rights were intended to preserve competition following the UP-MKT merger. According to CPKC, KCS used these rights "somewhat sporadically" over the last 35 years. However, the merger between the Canadian Pacific Railroad (CP) and KCS has renewed shippers' interest in single-line service from the Upper Midwest to Houston/Galveston. UP has until August 14 to reply to the petition. To allow shippers to plan for the upcoming fall harvest, CPKC is requesting that STB issue a decision no later than August 31.

### BNSF Completes Bridge Expansion Project at Key Bottleneck in Idaho

Last weekend, BNSF Railway (BNSF) completed its [Sandpoint Junction Connector Project](#) in Sandpoint, ID. Located in Northern Idaho, Sandpoint is a key junction where BNSF's Northern Transcon line meets the Montana Rail Link line, north of Lake Pend Oreille. Built in 1904 to accommodate a single track, the original Sandpoint bridge crosses the lake and connects to a line leading to Spokane, WA. In recent years, when this single-track bridge had handled all the rail traffic over the lake, there had been a bottleneck, where trains waited to cross the bridge one at a time. After completing a second bridge over Lake Pend Oreille [in late 2022](#), BNSF closed the original bridge for upgrades. With those upgrades now in place, both bridges are fully operational and able to run trains in both directions simultaneously. The Northern Transcon line is a key grain shipping route that connects grain producers in North Dakota, South Dakota, and Montana to export terminals in the Pacific Northwest.

### Castlen Enterprises Applies To Build and Operate New Barge Terminal

On August 4, Castlen Enterprises [filed a permit application](#) with the Louisville District of the U.S. Army Corps of Engineers (USACE) to build and operate a new barge terminal on the Ohio River near Mt. Vernon, IN. The proposed project would be located on the Ohio River at mile 830.5. The project would include the construction of a barge-unloading facility for transporting fertilizer. The facility would include a 195-foot by 35-foot work barge, a 140-foot by 35-foot work barge, an articulating conveyor, and an elevated belt line. The facility would have a maximum riverward projection of 125 feet from the normal pool elevation. USACE seeks public comments to evaluate the project's impacts until September 4. From 2016 to 2022, between [276,000 tons and 316,000 tons](#) of fertilizer have moved through Mt. Vernon, IN.

### Diesel Price Rises for Third Straight Week

For the week ending August 7, the U.S. average [diesel fuel price](#) rose 11.2 cents from the previous week to \$4.239 per gallon, 75.4 cents below the same week last year. Over the last 3 consecutive weeks (since the week ending July 17), the U.S. average diesel price has risen 43.3 cents. The last 3-consecutive-week rise in the average diesel fuel price—from October 3 to October 24, 2022—was 50.5 cents per gallon. According to the Energy Information Administration's August 8, [Short Term Energy Outlook](#), from third to fourth quarter 2023, the average diesel price is projected to rise 25 cents, to \$4.30 per gallon. U.S. diesel prices are projected to average \$4.17 per gallon in 2023 and \$3.94 per gallon in 2024, up 21 cents and 10 cents, respectively, from EIA's July forecast, but down from the 2022 average price of \$5.02 per gallon.

## Snapshots by Sector

### Export Sales

For the week ending July 27, [unshipped balances](#) of wheat, corn, and soybeans for marketing year (MY) 2022/23 totaled 8.90 million metric tons (mmt), down 9 percent from last week and down 43 percent from the same time last year. Net [corn export sales](#) for MY 2022/23 were 0.108 mmt, down 66 percent from last week. Net [soybean export sales](#) were 0.091 mmt, down 54 percent from last week. Net weekly [wheat export sales](#) for MY 2023/24, were 0.421 mmt, up 81 percent from last week.

### Rail

U.S. Class I railroads originated 15,032 [grain carloads](#) during the week ending July 29. This is unchanged from the previous week, 27 percent less than last year, and 23 percent lower than the 3-year average.

Average August [shuttle secondary railcar bids/offers](#) (per car) were \$208 below tariff for the week ending August 3. This was \$108 less than last week and \$355 lower than this week last year. Average non-shuttle secondary railcar bids/offers per car were \$194 above tariff. This was \$94 more than last week and \$6 more than this week last year.

### Barge

For the week ending August 5, [barge grain movements](#) totaled 328,400 tons. This was 27 percent less than the previous week and 56 percent less than the same period last year.

For the week ending August 5, 205 grain barges [moved down river](#)—75 fewer than last week. There were 497 grain barges [unloaded](#) in the New Orleans region, 11 percent more than last week.

### Ocean

For the week ending August 3, 24 [oceangoing grain vessels](#) were loaded in the Gulf—25 percent fewer than the same period last year. Within the next 10 days (starting August 4), 21 vessels were expected to be loaded—34 percent fewer than the same period last year.

As of August 3, the rate for shipping a metric ton (mt) of grain from the U.S. Gulf to Japan was \$46.50. This was 3 percent more than the previous week. The rate from the Pacific Northwest to Japan was \$26.00 per mt, 4 percent more than the previous week.

## Contents

Article/  
Calendar

Grain  
Transportation  
Indicators

Rail

Barge

Truck

Exports

Ocean

Brazil

Mexico

Grain Truck/Ocean  
Rate Advisory

Datasets

Specialists

Subscription  
Information

The next  
release is  
August 17, 2023

# Feature Article/Calendar

## Marine Fuel Update: Price Trends, Alternative Fuels, and Regulatory News

Because fuel costs form roughly half of ocean carriers' total operating costs, freight rates for shipping grain are highly sensitive to changes in fuel costs. Typically, fuel costs reflect trends in the oil market. However, shipping regulations related to concerns about air pollution and climate change have opened the door to other sources of fuel and put additional pressure on the fuel market. After giving a general overview of marine fuels, this article provides updates on fuel costs and the orderbook for vessels with alternative fuel capability. It also examines recent regulatory events and their possible impact on grain shippers going forward.

### Marine Fuel Background

Beginning in the mid-20th century, coal-powered steamships were replaced by motor vessels that rely on petroleum-based fuels—specifically, a high-viscosity product called heavy fuel oil (HFO). Because it is a residual fuel (i.e., byproduct of the petroleum refining process), HFO is relatively inexpensive. Typically, it costs 30 percent less than distillate fuels and 10 percent less than crude oil ([Farnoosh, 2022, p. 119](#)).<sup>1</sup> However, despite being economical, HFO is toxic and associated with greenhouse gas (GHG) emissions.

**Sulfur oxide emissions.** Traditional HFO has a high sulfur content and creates a gas called sulfur oxide (SOx)—a pollutant attributed to acid rain—when burned. In 2005, the United Nation's International Maritime Organization (IMO), which sets global shipping standards, began mandating SOx emissions standards. Since 2020, the agency has required vessels to reduce their fuel sulfur content to a maximum 0.5 percent, by weight. Additionally, in certain high-population coastal areas, sulfur content is limited to 0.1 percent ([Grain Transportation Report, February 6, 2020](#)).

As long as vessels comply with the IMO mandates of 2020, they may continue burning HFO—the most common being intermediate fuel oil (IFO) 380. To stay in compliance, IFO 380 use is combined with a “scrubber” system—a device that removes SOx from vessel emissions before they enter the atmosphere. Alternatively, vessels could replace IFO 380 with very low sulfur fuel oil (VLSFO), a type of HFO that is processed to have a lower sulfur content. A third option is to use marine gas oil (MGO), a distillate fuel with low sulfur content. Although IFO 380 is cheaper than VLSFO and MGO, the scrubber required by IFO 380 can be costly: shipowners must weigh the up-front cost of a scrubber device against the potential long-term savings of using IFO 380 fuel.

**Greenhouse gas emissions.** The shipping industry and its HFO contribute 2-3 percent of global annual GHG emissions. In 2018, to mitigate this issue, IMO adopted a GHG initial strategy (IMO 2018) to reduce GHG emissions in shipping by [at least 50 percent by 2050](#). Currently, liquefied natural gas (LNG) is the most readily available non-petroleum marine fuel. Unlike HFO, LNG has very low SOx emissions, and is estimated to lower carbon dioxide emissions (the main GHG) by [20 to 25 percent](#). Nevertheless, LNG, is also a fossil fuel, unable to meet long-term GHG emissions goals, and LNG use creates the risk of leaking methane—a potent GHG.

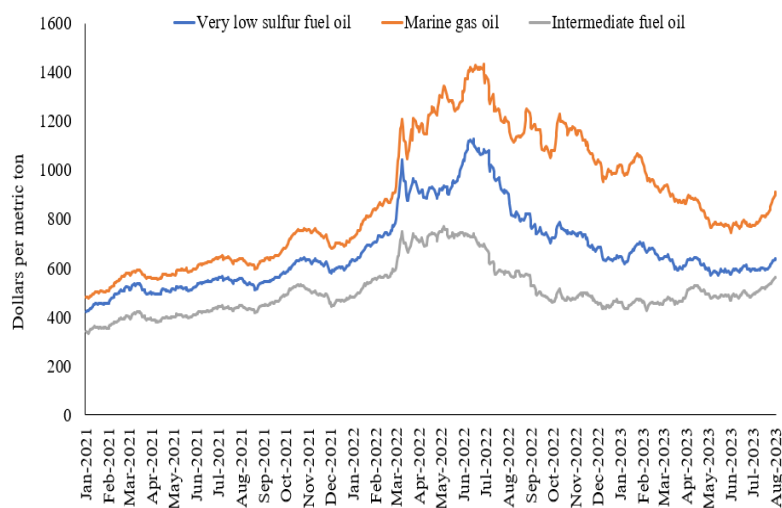
Apart from LNG, other promising alternative fuels include methanol, ammonia, and hydrogen. When these three substances are manufactured without the use of fossil fuels, they have the [potential to decarbonize the shipping industry](#). However, significant barriers to their adoption exist, related to production, cost, ship compatibility, and fuel distribution infrastructure.

### Fuel Costs and Vessel Orders

**Fuel prices.** Prices for the three conventional bunker fuels since January 2021 are summarized in figure 1 ([also available on AgTransport](#)). On January 1, 2021, the average bunker fuel prices per metric ton (mt) across 20 major global bunkering locations were \$342 for IFO 380, \$421 for VLSFO, and \$480 for MGO. Over the course of 2021, prices for the three fuels rose 40-50 percent.<sup>2</sup>

Then, in the first half of 2022, prices continued rising sharply because of oil supply disruptions sparked by Russia's late-February invasion of Ukraine. IFO 380 peaked at \$770 (per mt) on May 5; VLSFO peaked at \$1,126 on June 14; and MGO peaked at \$1,432 on June 28. Having fallen in the latter half of 2022 and first half of 2023, prices have risen in recent weeks.

Figure 1. Average marine fuel prices, dollars per metric ton.



Source: *Ship and Bunker*.

<sup>1</sup> Farnoosh, A. “Power Generation from Coal, Oil, Gas, and Biofuels” (Chapter 6). *The Palgrave Handbook of International Energy Economics*, p. 119.

<sup>2</sup> All prices are rounded to the nearest dollar.

Perhaps more than the bunker fuel prices themselves, shipowners monitor the price spread (or difference) between IFO 380 and VLSFO (fig. 2). Higher spreads incentivize shipowners to install scrubber systems to burn cheap IFO 380. According to [Ship and Bunker](#), \$100 per mt is a large enough spread to offset the costs of installing a scrubber.

The price spread between VLSFO and IFO 380 dipped as low as \$45 in the last quarter of 2020, but it averaged \$112 in 2021. The price spread rose significantly in 2022—peaking at \$420 on July 5, 2022. The average spread in 2022 was \$240. So far in 2023, the spread has fallen, reaching as low as \$70 in recent weeks.

**Prices for LNG**—the most common non-petroleum bunker fuel—are available on [Ship and Bunker](#) for the Port of Rotterdam in the Netherlands. Since the start of 2021, LNG has averaged \$1,137 (priced at an energy level equating to 1 metric ton of IFO 380)—well above the IFO 380 average of \$505 over the same period. However, the spread has been much lower in recent weeks. In June and July 2023, LNG was only \$18 more than IFO 380, and for several days in June and July, LNG was cheaper than IFO 380.

**Alternative fuel vessel orders.** According to data from DNV’s Alternative Fuels Insight, 16 percent of all ships on order in the world today are being built to use alternative fuels.<sup>3</sup> This share signals a sizable shift in the global fleet composition, given that fewer than 1 percent of all ships now operating can use alternative fuels. Of the alternative fuel fleet (including vessels in operation and on order), nearly 70 percent are LNG powered. Of the remainder, 15 percent use methanol; 14 percent, liquefied petroleum gas (used almost exclusively for gas tankers); and 2 percent, hydrogen. Of the LNG fleet in operation or on order, 90 percent use a “dual fuel” engine, which can burn either LNG or HFO bunker fuel.

Grain is shipped on bulk and container vessels, and the container sector leads the broader shipping industry in alternative fuel use. Currently, 55 LNG-powered container ships are in operation and 196 are on order—more than any other shipping sector. Likewise leading the way on methanol power (with over 140 methanol vessels on order), the container sector makes up over two-thirds of the global methanol fleet. In recent weeks, the shipping company Maersk has taken delivery of the world’s [first methanol-powered containership](#)—the first of 25 on order. The dry bulk sector has been slower than the container-shipping sector to invest in alternative fuels. Currently, 73 LNG-powered bulk vessels are in operation or on order, and 4 methanol-powered bulk vessels are on order.

### Looking Ahead: IMO 2023 and Potential Effects of a Carbon Tax

Earlier last month (July 3-7), IMO-member countries adopted a [2023 IMO Strategy on Reduction of GHG Emissions from Ships](#) (IMO 2023). IMO 2023 surpasses IMO 2018 by calling for global shipping to reach net-zero GHG emissions by or around 2050. To achieve this goal, IMO 2023 has committed to developing GHG-reduction measures to be finalized and agreed on by 2025 and adopted by 2027. These include a marine fuel standard and a GHG-emissions pricing mechanism (i.e., a carbon tax). To incentivize renewable fuel use, a carbon tax would charge shipowners an IMO-set amount per mt of GHG emitted.

Anticipating the possibility of a carbon tax, a [new paper](#) in the academic journal *Ecological Economics* examines how grain exports might respond to a carbon tax on marine fuels. The authors found the tax could raise shipping costs in two ways. First, shipowners could pass the tax directly to shippers, raising freight rates. Second, shipowners could pay the tax. However, although the second response would not raise freight costs initially, it would prompt lower vessel speeds, resulting in slower transit times.<sup>4</sup> Shipowners would generally prefer to pass the tax to shippers through higher rates, but their ability to do so depends on their market power.

The paper’s authors modeled the effects of a range of potential carbon tax levels (\$0 to \$250 per mt in \$50 increments) on shipowner profits, vessel speeds, GHG emissions, and grain exports. When the tax is under \$100 per mt and shipowners pay the carbon tax, there is no change in speed, grain exports, or carbon emissions. However, exports do fall with a tax set at \$100 per mt or more (and fall about 25 percent for a \$250 per mt tax). When the tax is at the lowest level (\$50) and shipowners pass it to customers, exports drop slightly (less than 5 percent). When the tax is set at \$100 per mt or more and shipowners pass it on, the reduction in exports is comparable to when shipowners pay the tax. [Austin.Hunt@USDA.gov](mailto:Austin.Hunt@USDA.gov)

**Figure 2. Price spread between very low sulfur fuel oil and heavy fuel**



Source: [Ship and Bunker](#).

<sup>3</sup> The positions or views stated in this article are solely those of the author and do not necessarily represent the views of DNV.

<sup>4</sup> Although the paper assumes that freight rates are fixed, slower vessel speeds could reduce vessel supply and, consequently, put upward pressure on ocean freight rates.

# Grain Transportation Indicators

Table 1

## Grain transport cost indicators<sup>1</sup>

For the week ending	Truck	Rail		Barge	Ocean	
		Non-Shuttle	Shuttle		Gulf	Pacific
08/09/23	284	329	239	229	208	184
08/02/23	277	326	244	219	201	177

<sup>1</sup>Indicator: Base year 2000 = 100. Weekly updates include truck = diesel (\$/gallon); rail = near-month secondary rail market bid and monthly tariff rate with fuel surcharge (\$/car); barge = Illinois River barge rate (index = percent of tariff rate); ocean = routes to Japan (\$/metric ton); n/a = not available due to holiday.

Source: USDA, Agricultural Marketing Service.

Table 2

## Market Update: U.S. origins to export position price spreads (\$/bushel)

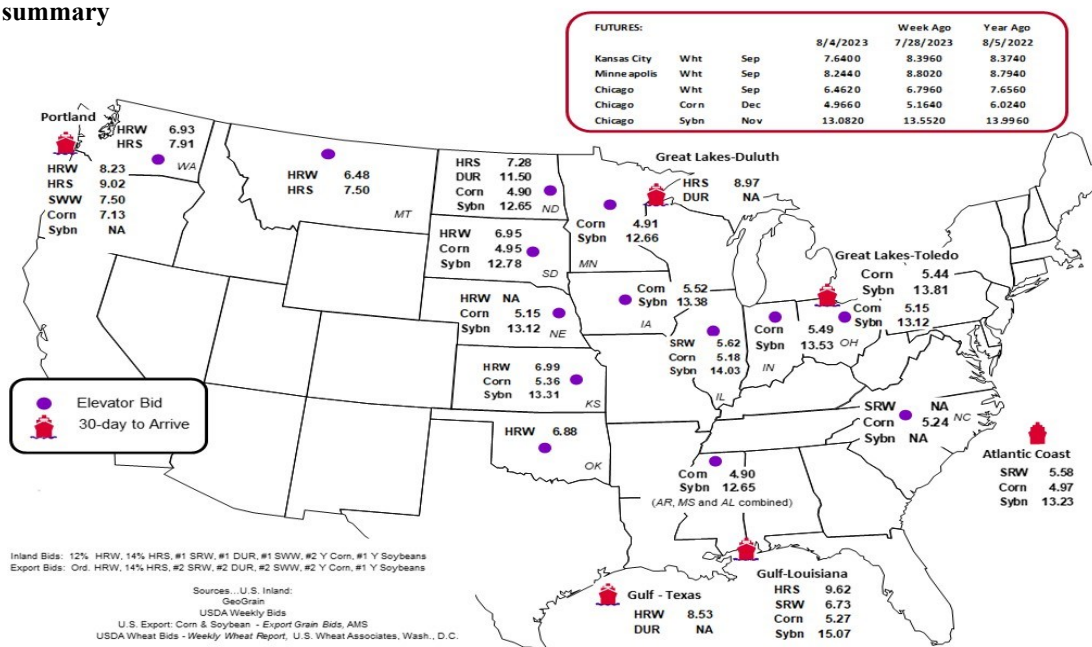
Commodity	Origin-destination	8/4/2023	7/28/2023
Corn	IL-Gulf	-0.09	-0.24
Corn	NE-Gulf	-0.12	-0.31
Soybean	IA-Gulf	-1.69	-1.72
HRW	KS-Gulf	-1.54	-1.50
HRS	ND-Portland	-1.74	-1.72

Note: nq = no quote; n/a = not available; HRW = hard red winter wheat; HRS = hard red spring wheat.

Source: USDA, Agricultural Marketing Service.

The **grain bid summary** illustrates the market relationships for commodities. Positive and negative adjustments in differential between terminal and futures markets, and the relationship to inland market points, are indicators of changes in fundamental market supply and demand. The map may be used to monitor market and time differentials.

Figure 1  
Grain bid summary



# Rail Transportation

Table 3

## Class I rail carrier grain car bulletin (grain carloads originated)

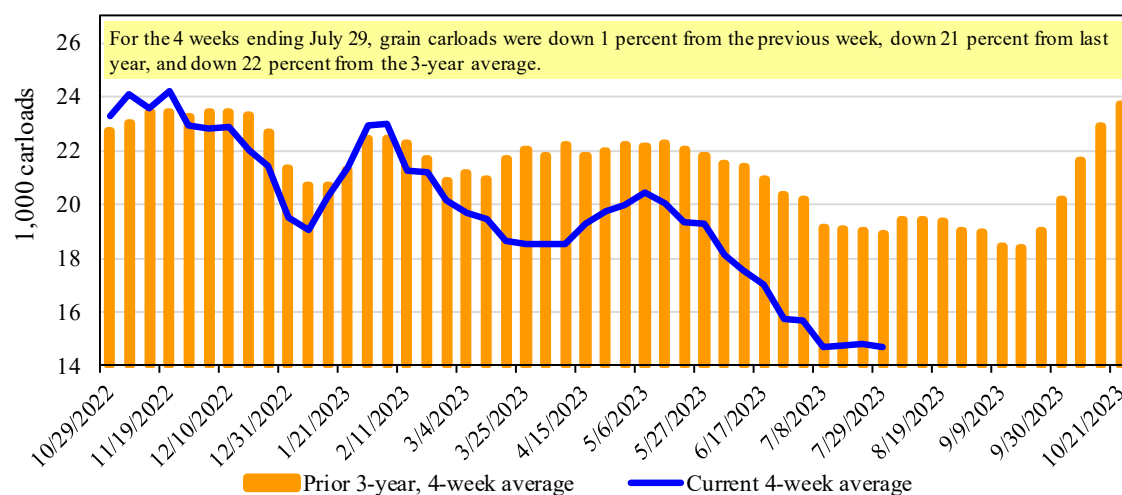
For the week ending: 7/29/2023	East		West		U.S. total	Central U.S./Canada	
	CSXT	NS	BNSF	UP		CPKC	CN
This week	1,104	2,239	7,303	4,386	15,032	3,831	3,323
This week last year	1,992	3,062	9,923	5,612	20,589	8,384	3,248
2023 YTD	54,753	80,708	265,289	158,898	559,648	274,614	134,246
2022 YTD	54,405	74,226	333,251	171,441	633,323	267,774	104,953
2023 YTD as % of 2022 YTD	101	109	80	93	88	103	128
Last 4 weeks as % of 2022	70	88	74	85	79	117	101
Last 4 weeks as % of 3-yr. avg.	74	95	70	85	78	98	108
Total 2022	93,428	130,651	570,232	296,945	1,091,256	538,276	214,050

Note: The last 4-week percentages compare the last 4 weeks of this year to the closest 4 weeks last year, and to the average across the prior 3 years. The U.S. total column excludes CPKC. NS = Norfolk Southern; UP = Union Pacific; CN = Canadian National; CPKC = Canadian Pacific Kansas City; YTD = year-to-date; avg. = average; yr. = year.

Source: Association of American Railroads.

Figure 2

## Total weekly U.S. Class I railroad grain carloads



Note: U.S. total excludes Canadian Pacific Kansas City  
Source: Association of American Railroads.

Table 4

## Railcar auction offerings<sup>1</sup> (\$/car)<sup>2</sup>

For the week ending: 8/03/2023		Delivery period							
		Aug-23	Aug-22	Sep-23	Sep-22	Oct-23	Oct-22	Nov-23	Nov-22
BNSF	COT grain units	0	no bids	0	0	no offer	0	no offer	0
	COT grain single-car	8	0	0	234	15	316	1	225
UP	GCAS/vouchers	no offer	n/a	no offer	n/a	no offer	n/a	n/a	n/a

<sup>1</sup>Auction offerings are for single-car and unit train shipments only.

<sup>2</sup>Average premium/discount to tariff, last auction. n/a = not available.

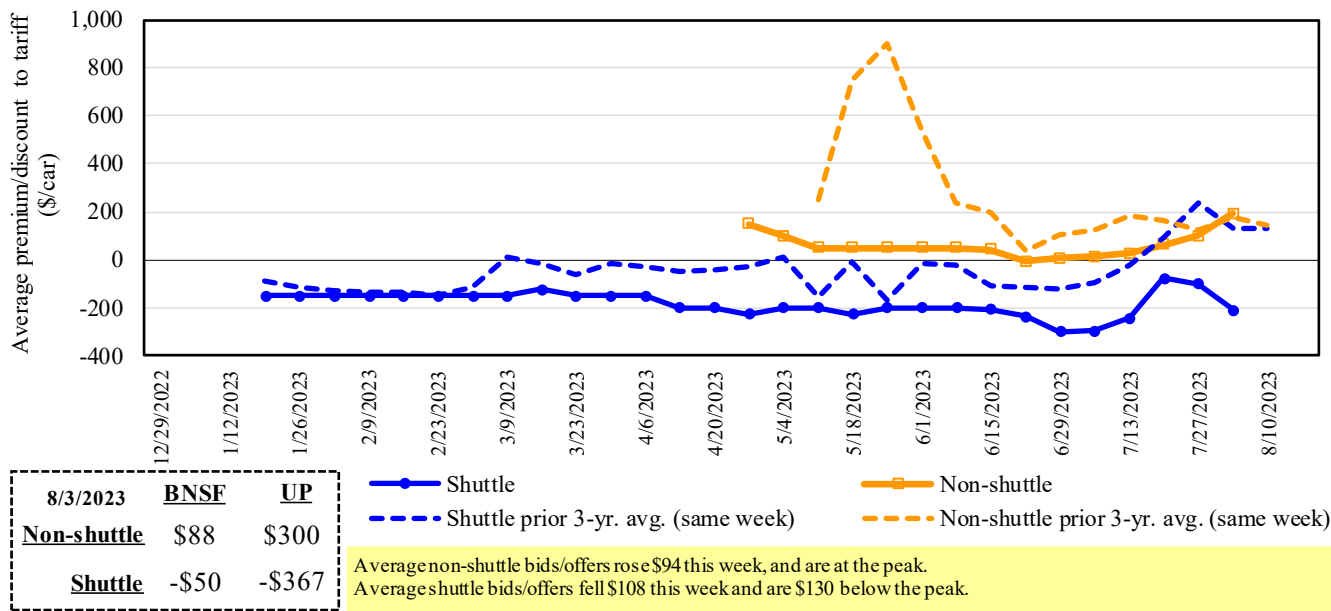
Note: BNSF = BNSF Railway; COT = Certificate of Transportation; UP = Union Pacific Railroad; and GCAS = Grain Car Allocation System.

Minimum bids for UP GCAS/vouchers are \$10.

Source: USDA, Agricultural Marketing Service.

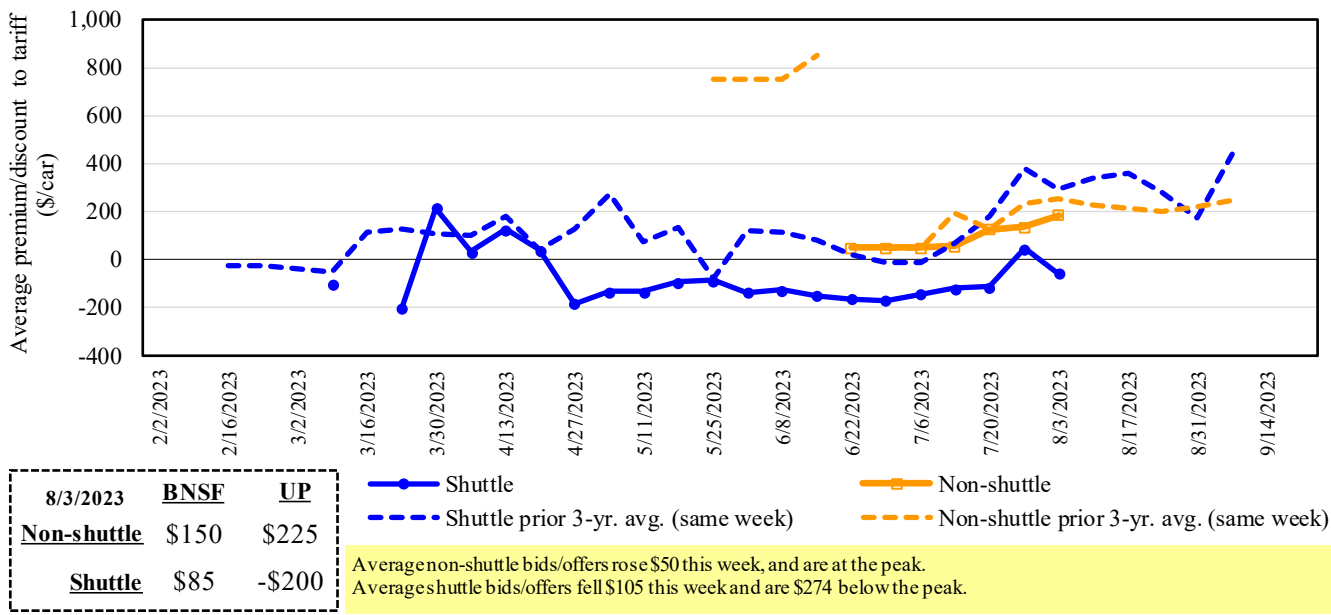
The **secondary rail market** information reflects trade values for service that was originally purchased from the railroad carrier as some form of guaranteed freight. The **auction and secondary rail** values are indicators of rail service quality and demand/supply.

**Figure 3**  
**Secondary market bids/offers for railcars to be delivered in August 2023**



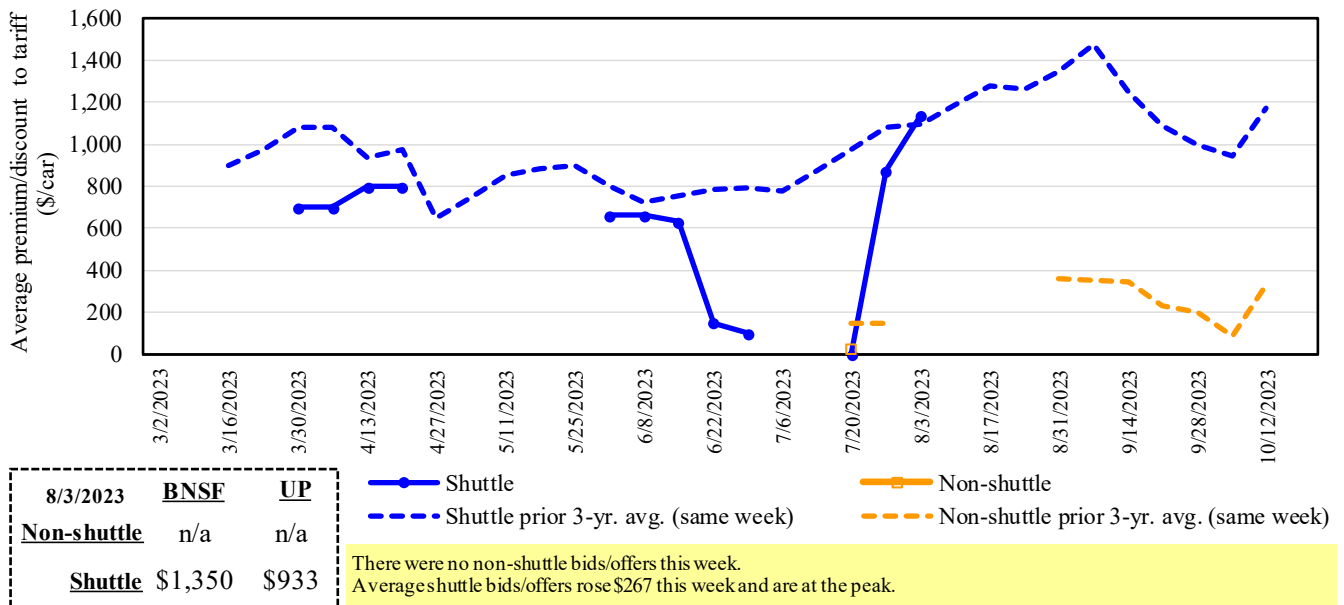
Note: Non-shuttle bids include unit-train and single-car bids. n/a = not available; avg. = average; yr. = year; BNSF = BNSF Railway; UP = Union Pacific Railroad.  
 Source: USDA, Agricultural Marketing Service.

**Figure 4**  
**Secondary market bids/offers for railcars to be delivered in September 2023**



Note: Non-shuttle bids include unit-train and single-car bids. n/a = not available; avg. = average; yr. = year; BNSF = BNSF Railway; UP = Union Pacific Railroad.  
 Source: USDA, Agricultural Marketing Service.

**Figure 5**  
**Secondary market bids/offers for railcars to be delivered in October 2023**



Note: Non-shuttle bids include unit-train and single-car bids. n/a = not available; avg. = average; yr. = year; BNSF = BNSF Railway; UP = Union Pacific Railroad.  
 Source: USDA, Agricultural Marketing Service.

Table 5  
**Weekly secondary railcar market (\$/car)<sup>1</sup>**

For the week ending: 8/3/2023		Delivery period					
		Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24
<b>Non-shuttle</b>	<b>BNSF-GF</b>	<b>88</b>	<b>150</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>
	Change from last week	-37	-50	n/a	n/a	n/a	n/a
	Change from same week 2022	63	-25	n/a	n/a	n/a	n/a
	<b>UP-Pool</b>	<b>300</b>	<b>225</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>
	Change from last week	225	150	n/a	n/a	n/a	n/a
	Change from same week 2022	-50	-175	n/a	n/a	n/a	n/a
<b>Shuttle</b>	<b>BNSF-GF</b>	<b>-50</b>	<b>85</b>	<b>1,350</b>	<b>650</b>	<b>350</b>	<b>525</b>
	Change from last week	100	-111	325	n/a	n/a	n/a
	Change from same week 2022	88	-240	-525	n/a	-250	n/a
	<b>UP-Pool</b>	<b>-367</b>	<b>-200</b>	<b>933</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>
	Change from last week	-317	-100	208	n/a	n/a	n/a
	Change from same week 2022	-798	-800	-667	n/a	n/a	n/a
	<b>CP-GF</b>	<b>-100</b>	<b>-175</b>	<b>400</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>
	Change from last week	-100	-175	200	n/a	n/a	n/a
Change from same week 2022	0	-125	-200	n/a	n/a	n/a	

<sup>1</sup> Average premium/discount to tariff, \$/car-last week.

Note: Bids listed are market indicators only and are not guaranteed prices. n/a = not available;

GF = guaranteed freight; Pool = guaranteed pool; BNSF = BNSF Railway; UP = Union Pacific Railroad; CP = Canadian Pacific Railway.

Data from The Malsam Co., Tradewest Brokerage Co.

Source: USDA, Agricultural Marketing Service.

Table 6

**Tariff rail rates for unit and shuttle train shipments<sup>1</sup>**

August 2023	Origin region <sup>3</sup>	Destination region <sup>3</sup>	Tariff rate/car	Fuel surcharge per car	Tariff plus surcharge per:		Percent change Y/Y <sup>4</sup>
					metric ton	bushel <sup>2</sup>	
<b>Unit train</b>							
Wheat	Wichita, KS	St. Louis, MO	\$4,095	\$177	\$42.42	\$1.15	1
	Grand Forks, ND	Duluth-Superior, MN	\$4,008	\$42	\$40.22	\$1.09	0
	Wichita, KS	Los Angeles, CA	\$7,340	\$214	\$75.02	\$2.04	-11
	Wichita, KS	New Orleans, LA	\$4,825	\$312	\$51.01	\$1.39	-2
	Sioux Falls, SD	Galveston-Houston, TX	\$7,111	\$176	\$72.36	\$1.97	-9
	Colby, KS	Galveston-Houston, TX	\$5,075	\$341	\$53.79	\$1.46	-3
	Amarillo, TX	Los Angeles, CA	\$5,121	\$475	\$55.57	\$1.51	-9
Corn	Champaign-Urbana, IL	New Orleans, LA	\$4,000	\$352	\$43.22	\$1.10	-8
	Toledo, OH	Raleigh, NC	\$8,551	\$396	\$88.84	\$2.26	0
	Des Moines, IA	Davenport, IA	\$2,655	\$75	\$27.11	\$0.69	3
	Indianapolis, IN	Atlanta, GA	\$6,593	\$297	\$68.42	\$1.74	1
	Indianapolis, IN	Knoxville, TN	\$5,564	\$192	\$57.16	\$1.45	2
	Des Moines, IA	Little Rock, AR	\$4,250	\$219	\$44.38	\$1.13	0
	Des Moines, IA	Los Angeles, CA	\$6,130	\$638	\$67.21	\$1.71	-6
Soybeans	Minneapolis, MN	New Orleans, LA	\$3,472	\$513	\$39.57	\$1.08	-29
	Toledo, OH	Huntsville, AL	\$7,037	\$282	\$72.68	\$1.98	0
	Indianapolis, IN	Raleigh, NC	\$7,843	\$401	\$81.87	\$2.23	0
	Indianapolis, IN	Huntsville, AL	\$5,689	\$190	\$58.39	\$1.59	2
	Champaign-Urbana, IL	New Orleans, LA	\$4,865	\$352	\$51.81	\$1.41	-4
<b>Shuttle train</b>							
Wheat	Great Falls, MT	Portland, OR	\$4,543	\$123	\$46.34	\$1.26	-6
	Wichita, KS	Galveston-Houston, TX	\$4,611	\$96	\$46.74	\$1.27	-7
	Chicago, IL	Albany, NY	\$7,090	\$374	\$74.12	\$2.02	0
	Grand Forks, ND	Portland, OR	\$6,201	\$213	\$63.69	\$1.73	-8
	Grand Forks, ND	Galveston-Houston, TX	\$5,549	\$222	\$57.31	\$1.56	-10
	Colby, KS	Portland, OR	\$5,923	\$560	\$64.38	\$1.75	-9
	Corn	Minneapolis, MN	Portland, OR	\$5,660	\$259	\$58.78	\$1.49
Sioux Falls, SD		Tacoma, WA	\$5,620	\$237	\$58.17	\$1.48	-9
Champaign-Urbana, IL		New Orleans, LA	\$4,170	\$352	\$44.91	\$1.14	-3
Lincoln, NE		Galveston-Houston, TX	\$4,360	\$138	\$44.67	\$1.13	-4
Des Moines, IA		Amarillo, TX	\$4,670	\$275	\$49.11	\$1.25	-1
Minneapolis, MN		Tacoma, WA	\$5,660	\$257	\$58.76	\$1.49	-9
Council Bluffs, IA		Stockton, CA	\$5,580	\$266	\$58.05	\$1.47	-10
Soybeans	Sioux Falls, SD	Tacoma, WA	\$6,350	\$237	\$65.42	\$1.78	-7
	Minneapolis, MN	Portland, OR	\$6,400	\$259	\$66.13	\$1.80	-8
	Fargo, ND	Tacoma, WA	\$6,250	\$211	\$64.16	\$1.75	-6
	Council Bluffs, IA	New Orleans, LA	\$5,095	\$406	\$54.63	\$1.49	-4
	Toledo, OH	Huntsville, AL	\$5,277	\$282	\$55.20	\$1.50	1
	Grand Island, NE	Portland, OR	\$5,730	\$573	\$62.59	\$1.70	-3

<sup>1</sup>A unit train refers to shipments of at least 25 cars. Shuttle train rates are generally available for qualified shipments of

75-120 cars that meet railroad efficiency requirements.

<sup>2</sup>Approximate load per car = 111 short tons (100.7 metric tons): corn 56 pounds per bushel (lbs/bu), wheat and soybeans 60 lbs/bu.

<sup>3</sup>Regional economic areas are defined by the Bureau of Economic Analysis (BEA).

<sup>4</sup>Percentage change year over year (Y/Y) calculated using tariff rate plus fuel surcharge.

Source: BNSF Railway, Canadian National Railway, CSX Transportation, and Union Pacific Railroad.



Table 7

**Tariff rail rates for U.S. bulk grain shipments to Mexico**

Date: December 2021			Tariff rate per car <sup>1</sup>	Fuel surcharge per car <sup>2</sup>	Tariff rate plus fuel surcharge per:		Percent change <sup>4</sup> Y/Y
Commodity	Origin state	Destination region			metric ton <sup>3</sup>	bushel <sup>3</sup>	
Wheat	MT	Chihuahua, CI	\$7,699	\$0	\$78.67	\$2.14	4
	OK	Cauatitlan, EM	\$6,900	\$230	\$72.85	\$1.98	6
	KS	Guadalajara, JA	\$7,619	\$719	\$85.19	\$2.32	7
	TX	Salinas Victoria, NL	\$4,420	\$138	\$46.57	\$1.27	4
Corn	IA	Guadalajara, JA	\$9,102	\$663	\$99.77	\$2.53	6
	SD	Celaya, GJ	\$8,300	\$0	\$84.81	\$2.15	2
	NE	Queretaro, QA	\$8,322	\$462	\$89.75	\$2.28	5
	SD	Salinas Victoria, NL	\$6,905	\$0	\$70.55	\$1.79	0
	MO	Tlalnepantla, EM	\$7,687	\$450	\$83.14	\$2.11	5
	SD	Torreón, CU	\$7,825	\$0	\$79.95	\$2.03	2
Soybeans	MO	Bojay (Tula), HG	\$8,647	\$614	\$94.63	\$2.57	5
	NE	Guadalajara, JA	\$9,207	\$646	\$100.67	\$2.74	5
	IA	El Castillo, JA	\$9,510	\$0	\$97.17	\$2.64	1
	KS	Torreón, CU	\$8,109	\$466	\$87.61	\$2.38	5
Sorghum	NE	Celaya, GJ	\$7,932	\$597	\$87.15	\$2.21	6
	KS	Queretaro, QA	\$8,108	\$287	\$85.77	\$2.18	3
	NE	Salinas Victoria, NL	\$6,713	\$231	\$70.94	\$1.80	3
	NE	Torreón, CU	\$7,225	\$438	\$78.29	\$1.99	6

<sup>1</sup>Rates are based upon published tariff rates for high-capacity shuttle trains. Shuttle trains are available for qualified shipments of 75-110 cars that meet railroad efficiency requirements.

<sup>2</sup>Fuel surcharge adjusted to reflect the change in Ferrocarril Mexicano, S.A. de C.V railroad fuel surcharge policy as of 10/01/2009.

<sup>3</sup>Approximate load per car = 97.87 metric tons: Corn & Sorghum 56 lbs/bu, Wheat & Soybeans 60 lbs/bu.

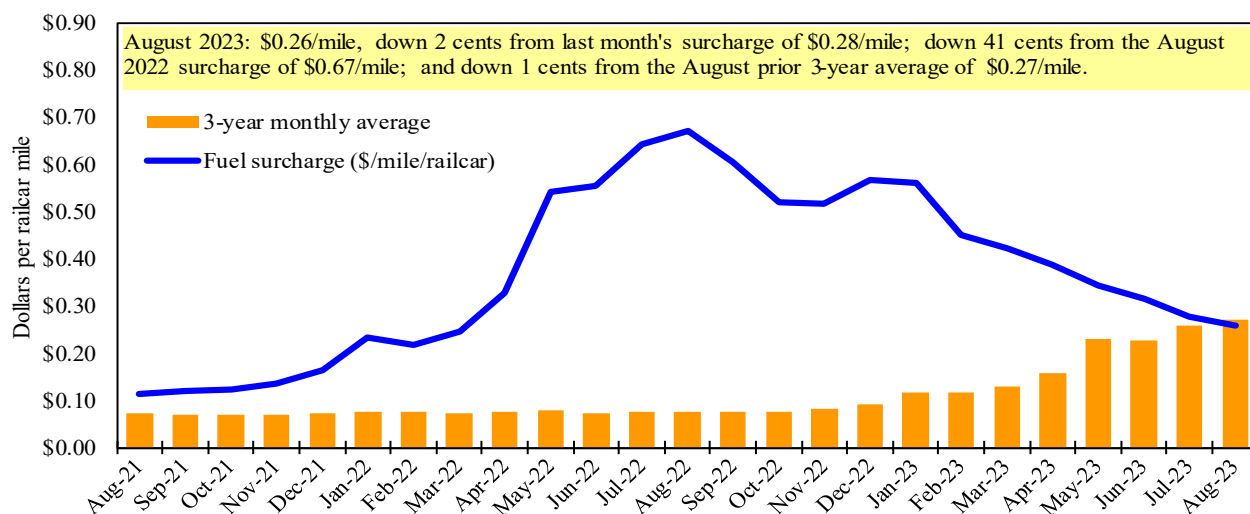
<sup>4</sup>Percentage change calculated using tariff rate plus fuel surcharge; Y/Y = year over year.

<sup>5</sup>As of January 1, 2022, both BNSF and Union Pacific changed their billing and reporting of rates to Mexico.

As we incorporate the change, Table 7 updates will be delayed.

Sources: BNSF Railway, Union Pacific Railroad, Kansas City Southern.

Figure 6

**Railroad fuel surcharges, North American weighted average<sup>1</sup>**

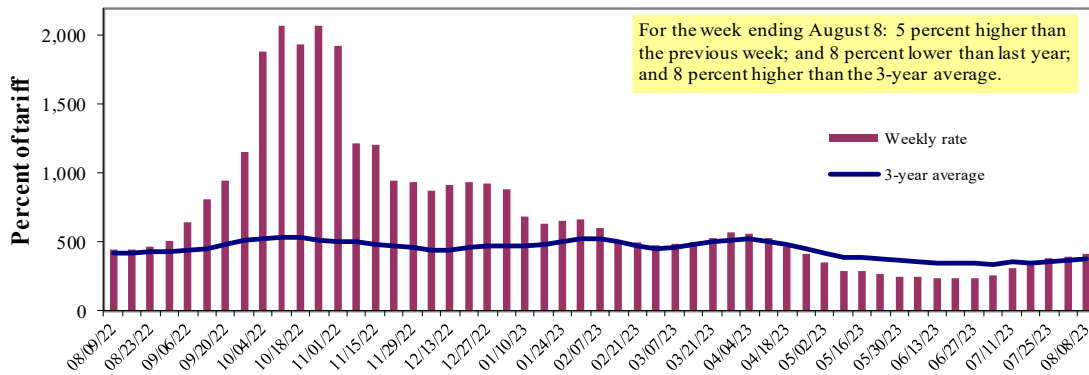
<sup>1</sup> Weighted by each Class I railroad's proportion of grain traffic for the prior year.

Sources: BNSF Railway, Canadian National Railway, CSX Transportation, Canadian Pacific Railway, Union Pacific Railroad, Kansas City Southern Railway, Norfolk Southern Corporation.

# Barge Transportation

Figure 7

## Illinois River barge freight rate<sup>1,2</sup>



<sup>1</sup>Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); <sup>2</sup>4-week moving average of the 3-year average.  
Source: USDA, Agricultural Marketing Service.

Table 8

### Weekly barge freight rates: Southbound only

		Twin Cities	Mid-Mississippi	Lower Illinois River	St. Louis	Cincinnati	Lower Ohio	Cairo-Memphis
<b>Rate<sup>1</sup></b>	8/8/2023	456	417	413	354	381	381	389
	8/1/2023	459	404	395	354	338	338	336
<b>\$/ton</b>	8/8/2023	28.23	22.18	19.16	14.12	17.87	15.39	12.21
	8/1/2023	28.41	21.49	18.33	14.12	15.85	13.66	10.55
<b>Current week % change from the same week:</b>								
	Last year	-20	-15	-8	-6	-18	-19	5
	3-year avg. <sup>2</sup>	-3	6	-	24	17	17	43
<b>Rate<sup>1</sup></b>	September	659	684	684	677	675	675	711
	November	616	580	594	513	586	586	491

<sup>1</sup>Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); <sup>2</sup>4-week moving average; ton = 2,000 pounds; "-" data not available.  
Source: USDA, Agricultural Marketing Service.

### Figure 8 Benchmark tariff rates

**Calculating barge rate per ton:**  
(Rate \* 1976 tariff benchmark rate per ton)/100

Select applicable index from market quotes are included in tables on this page. The 1976 benchmark rates per ton are provided in map.

Map Credit: USDA, Agricultural Marketing Service

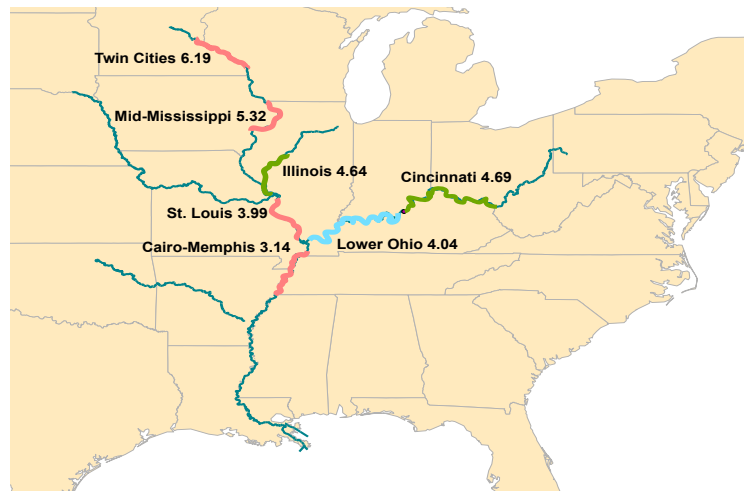
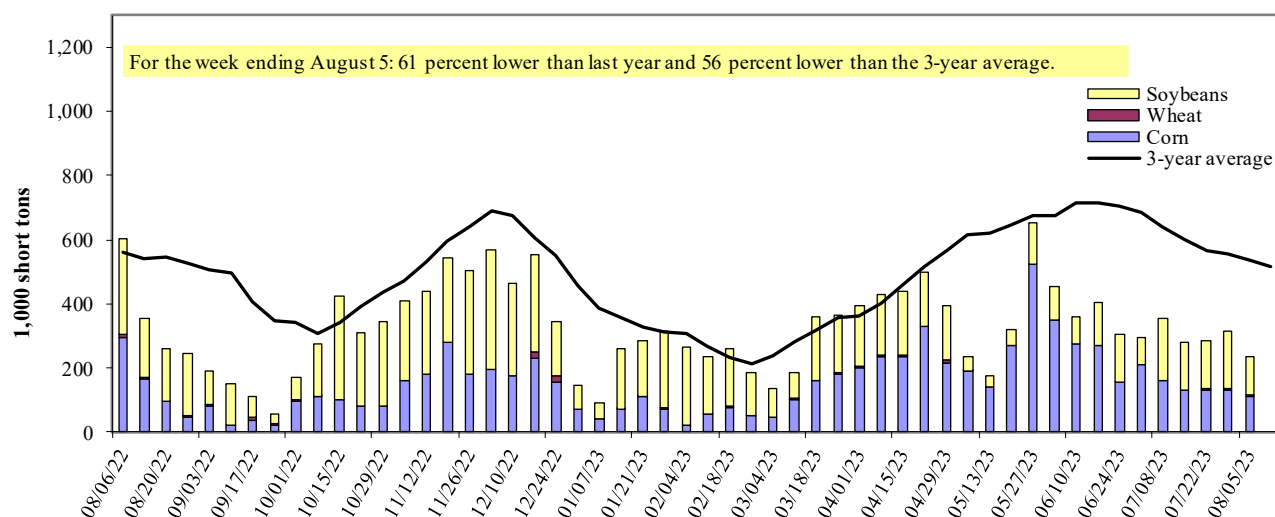


Figure 9

**Barge movements on the Mississippi River<sup>1</sup> (Locks 27 - Granite City, IL)**

<sup>1</sup> The 3-year average is a 4-week moving average.

Note: The U.S. Army Corps of Engineers has recently migrated its lock and vessel database and has noted the latest data may be revised in coming weeks.

Source: U.S. Army Corps of Engineers.

Table 9

**Barged grain movements (1,000 tons)**

For the week ending 08/05/2023	Corn	Wheat	Soybeans	Other	Total
<b>Mississippi River</b>					
Rock Island, IL (L15)	84	2	105	0	191
Winfield, MO (L25)	106	2	94	0	202
Alton, IL (L26)	128	2	113	0	243
Granite City, IL (L27)	112	2	119	0	232
<b>Illinois River (La Grange)</b>	16	0	18	0	33
<b>Ohio River (Olmsted)</b>	32	19	13	0	64
<b>Arkansas River (L1)</b>	0	30	2	0	32
Weekly total - 2023	144	51	133	0	328
Weekly total - 2022	388	47	319	0	753
2023 YTD <sup>1</sup>	8,524	878	6,722	191	16,316
2022 YTD <sup>1</sup>	12,585	1,185	7,733	171	21,674
2023 as % of 2022 YTD	68	74	87	112	75
Last 4 weeks as % of 2022 <sup>2</sup>	46	84	67	175	58
<b>Total 2022</b>	<b>16,437</b>	<b>1,594</b>	<b>14,464</b>	<b>232</b>	<b>32,727</b>

<sup>1</sup> Weekly total, YTD (year-to-date), and calendar year total include MI/27, OH/Olmsted, and AR/1; Other refers to oats, barley, sorghum, and rye.

Total may not add exactly due to rounding.

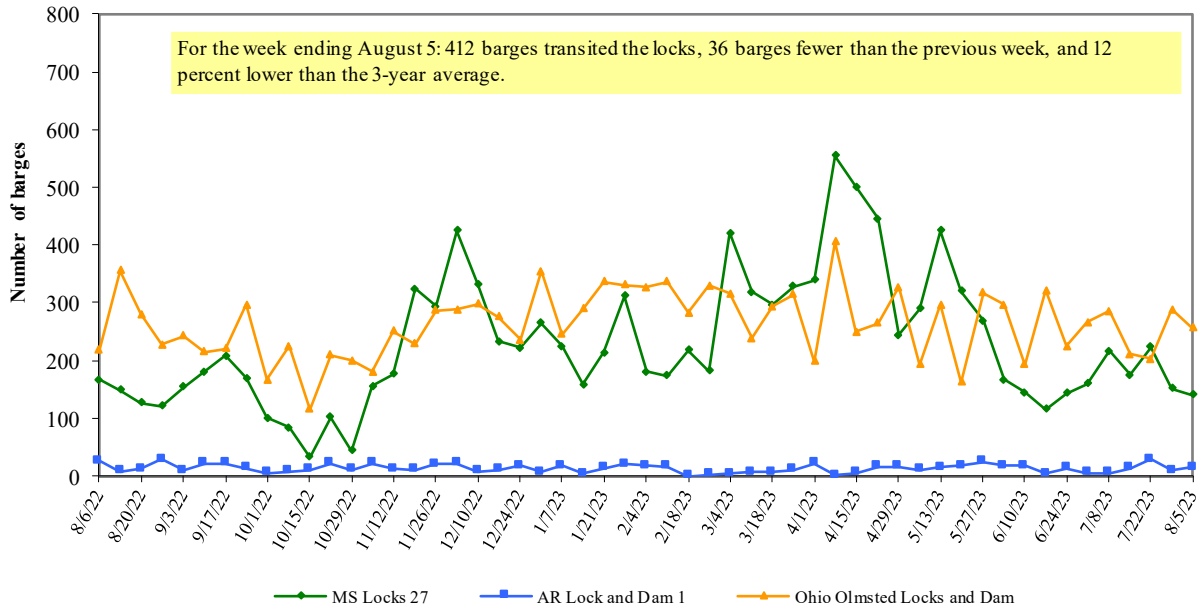
<sup>2</sup> As a percent of same period in 2022.

Note: L (as in "L15") refers to a lock, locks, or locks and dam facility. The U.S. Army Corps of Engineers has recently migrated its lock and vessel database and has noted the latest data may be revised in coming weeks.

Source: U.S. Army Corps of Engineers.

Figure 10

**Upbound empty barges transiting Mississippi River Locks 27, Arkansas River Lock and Dam 1, and Ohio River Olmsted Locks and Dam**

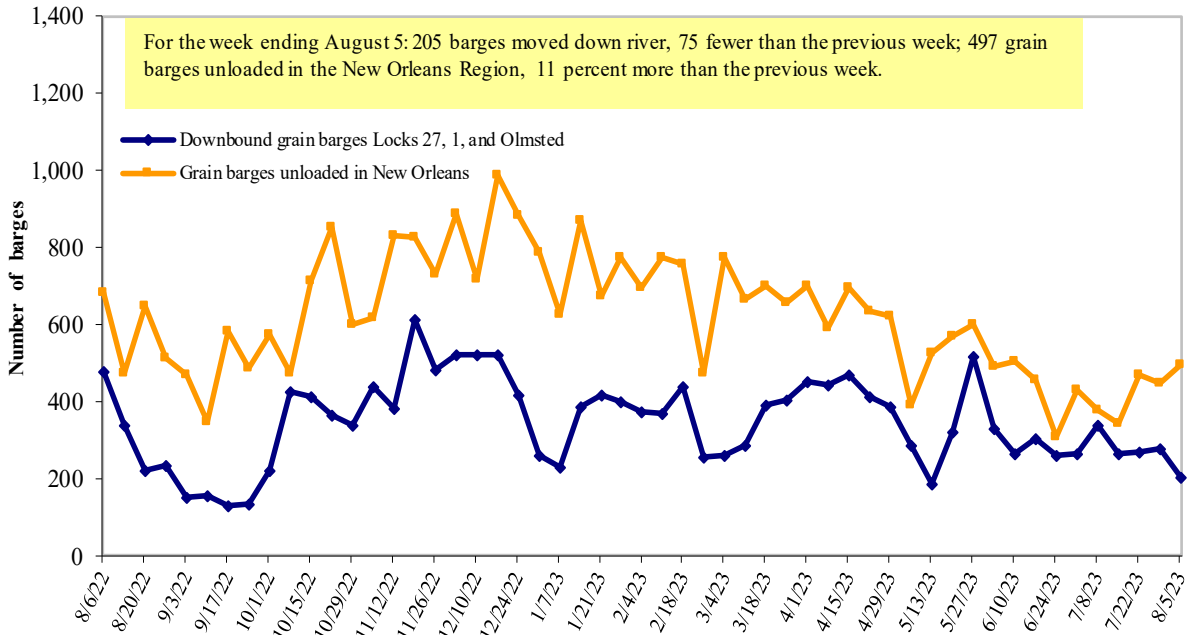


Note: The U.S. Army Corps of Engineers has recently migrated its lock and vessel database and has noted the latest data may be revised in coming weeks.

Source: U.S. Army Corps of Engineers.

Figure 11

**Grain barges for export in New Orleans region**



Note: Olmsted = Olmsted Locks and Dam. The U.S. Army Corps of Engineers has recently migrated its lock and vessel database and has noted the latest data may be revised in coming weeks.

Source: U.S. Army Corps of Engineers and USDA, Agricultural Marketing Service.

# Truck Transportation

The **weekly diesel price** provides a proxy for trends in U.S. truck rates as diesel fuel is a significant expense for truck grain movements.

Table 10

## Retail on-highway diesel prices, week ending 8/7/2023 (U.S. \$/gallon)

Region	Location	Price	Change from	
			Week ago	Year ago
I	East Coast	4.248	0.095	-0.789
	New England	4.235	0.074	-1.116
	Central Atlantic	4.395	0.104	-0.989
	Lower Atlantic	4.196	0.095	-0.678
II	Midwest	4.195	0.090	-0.764
III	Gulf Coast	3.960	0.129	-0.717
IV	Rocky Mountain	4.288	0.161	-0.752
	West Coast	4.911	0.158	-0.719
V	West Coast less California	4.538	0.137	-0.686
	California	5.339	0.181	-0.758
	Total	United States	4.239	0.112

<sup>1</sup>Diesel fuel prices include all taxes. Prices represent an average of all types of diesel fuel.

Note: On June 13, 2022, the Energy Information Administration implemented a new methodology to estimate weekly on-highway diesel fuel prices.

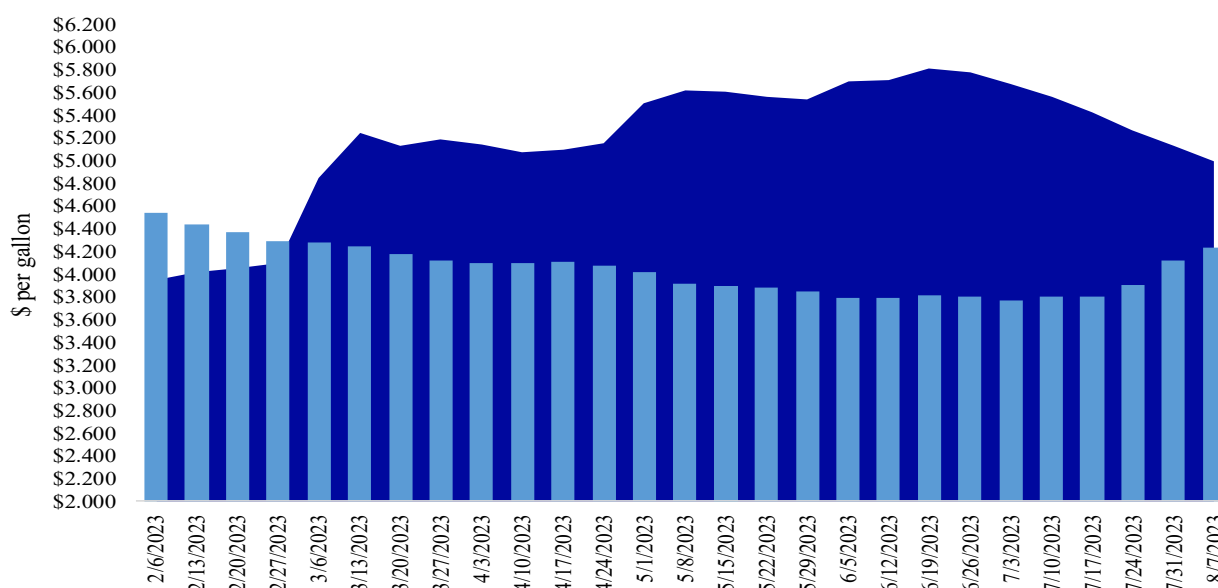
Source: U.S. Department of Energy, Energy Information Administration.

Figure 12

## Weekly diesel fuel prices, U.S. average

For the week ending August 7, the U.S. average diesel fuel price increased 11.2 cents from the previous week to \$4.239 per gallon, 75.4 cents below the same week last year.

■ Last year \$4.993  
■ Current year \$4.239



Note: On June 13, 2022 the Energy Information Administration implemented a new methodology to estimate weekly on-highway diesel fuel prices.

Source: U.S. Department of Energy, Energy Information Administration, Retail On-Highway Diesel Prices.

# Grain Exports

Table 11

## U.S. export balances and cumulative exports (1,000 metric tons)

For the week ending	Wheat						Corn	Soybeans	Total
	HRW	SRW	HRS	SWW	DUR	All wheat			
<b>Export balances<sup>1</sup></b>									
7/27/2023	647	773	1,239	527	74	3,260	3,294	2,351	8,904
This week year ago	1,596	1,076	1,502	1,470	109	5,754	4,246	5,632	15,631
<b>Cumulative exports-marketing year<sup>2</sup></b>									
2022/23 YTD	474	799	756	537	17	2,583	36,873	50,504	89,961
2021/22 YTD	797	496	799	383	18	2,493	56,413	53,896	112,802
YTD 2022/23 as % of 2021/22	59	161	95	140	97	104	65	94	80
Last 4 wks. as % of same period 2021/22	40	86	81	40	57	59	89	47	63
Total 2021/22	7,172	2,786	5,254	3,261	196	18,669	59,764	57,189	135,622
Total 2020/21	8,422	1,790	7,500	6,438	656	24,807	66,958	60,571	152,335

<sup>1</sup> Current unshipped (outstanding) export sales to date.

<sup>2</sup> Shipped export sales to date.

Note: marketing year: wheat = 6/01-5/31, corn and soybeans = 9/01-8/31. YTD = year-to-date; wks. = weeks; HRW= hard red winter; SRW = soft red winter; HRS= hard red spring; SWW= soft white wheat; DUR= durum.

Source: USDA, Foreign Agricultural Service.

Table 12

## Top 5 importers<sup>1</sup> of U.S. corn

For the week ending 7/27/2023	Total commitments <sup>2</sup>			% change current MY from last MY	Exports <sup>3</sup> 3-yr. avg. 2019-21
	2023/24	2022/23	2021/22		
	next MY	current MY	last MY		
		1,000 mt -			-1,000 mt -
Mexico	3,029	15,232	16,737	(9)	15,227
China	272	7,581	14,721	(49)	12,616
Japan	802	6,828	10,056	(32)	10,273
Columbia	26	2,305	4,374	(47)	4,398
Korea	0	821	1,476	(44)	2,563
<b>Top 5 importers</b>	<b>4,128</b>	<b>32,767</b>	<b>47,364</b>	<b>(31)</b>	<b>45,077</b>
<b>Total U.S. corn export sales</b>	<b>5,215</b>	<b>40,167</b>	<b>60,658</b>	<b>(34)</b>	<b>56,665</b>
% of YTD current month's export projection	10%	96%	96%		
Change from prior week <sup>2</sup>	349	108	58		
<b>Top 5 importers' share of U.S. corn export sales</b>	79%	82%	78%		80%
<b>USDA forecast July 2023</b>	<b>53,435</b>	<b>41,985</b>	<b>62,901</b>	<b>(33)</b>	
<b>Corn use for ethanol USDA forecast, July 2023</b>	<b>134,620</b>	<b>132,715</b>	<b>135,281</b>	<b>(2)</b>	

<sup>1</sup>Based on USDA, Foreign Agricultural Service (FAS) marketing year ranking reports for 2021/22; marketing year (MY) = Sep 1 - Aug 31.

<sup>2</sup>Cumulative exports (shipped) + outstanding sales (unshipped), FAS weekly export sales report, or export sales query. Total commitments change (net sales) from prior week could include revisions from previous week's outstanding sales or accumulated sales.

<sup>3</sup>FAS marketing year ranking reports (carryover plus accumulated export); yr. = year; avg. = average; YTD = year to date.

Note: A red number in parentheses indicates a negative number; mt = metric ton.

Source: USDA, Foreign Agricultural Service.

Table 13

**Top 5 importers<sup>1</sup> of U.S. soybeans**

For the week ending 7/27/2023	Total commitments <sup>2</sup>			% change current MY from last MY	Exports <sup>3</sup> 3-yr. avg. 2019-21
	2023/24 next MY	2022/23 current MY	2021/22 last MY		
	1,000 mt -				-1,000 mt -
China	2,999	31,221	30,601	2	27,283
Mexico	1,121	4,774	5,476	(13)	4,929
Egypt	63	1,148	4,144	(72)	3,553
Japan	178	2,359	2,488	(5)	2,266
Indonesia	70	1,689	1,737	(3)	2,116
<b>Top 5 importers</b>	<b>4,430</b>	<b>41,190</b>	<b>44,446</b>	<b>(7)</b>	<b>40,147</b>
<b>Total U.S. soybean export sales</b>	<b>8,089</b>	<b>52,855</b>	<b>59,528</b>	<b>(11)</b>	<b>54,231</b>
% of projected exports	16%	98%	102%		
change from prior week <sup>2</sup>	<b>2,631</b>	<b>91</b>	<b>(11)</b>		
<b>Top 5 importers' share of U.S. soybean export sales</b>	<b>55%</b>	<b>78%</b>	<b>75%</b>		<b>74%</b>
<b>USDA forecast, July 2023</b>	<b>50,409</b>	<b>53,951</b>	<b>58,638</b>	<b>(8)</b>	

<sup>1</sup>Based on USDA, Foreign Agricultural Service (FAS) marketing year ranking reports for 2021/22; marketing year (MY) = Sep 1 - Aug 31.

<sup>2</sup>Cumulative exports (shipped) + outstanding sales (unshipped), FAS weekly export sales report, or export sales query. Total commitments change (net sales) from prior week could include revisions from previous week's outstanding sales or accumulated sales.

<sup>3</sup>FAS marketing year ranking reports (carryover plus accumulated export); yr. = year; avg. = average; YTD = year to date.

Note: A red number in parentheses indicates a negative number; mt = metric ton.

Source: USDA, Foreign Agricultural Service.

Table 14

**Top 10 importers<sup>1</sup> of all U.S. wheat**

For the week ending 7/27/2023	Total commitments <sup>2</sup>		% change current MY from last MY	Exports <sup>3</sup> 3-yr. avg. 2020-22
	2023/24 current MY	2022/23 last MY		
	1,000 mt -			-1,000 mt -
Mexico	1,145	1,386	(17)	3,397
Philippines	841	1,174	(28)	2,615
Japan	669	743	(10)	2,281
China	157	273	(43)	1,740
Korea	381	542	(30)	1,426
Nigeria	104	399	(74)	1,276
Taiwan	450	218	106	944
Thailand	106	182	(42)	643
Colombia	108	287	(62)	537
Indonesia	73	81	(9)	469
<b>Top 10 importers</b>	<b>4,034</b>	<b>5,285</b>	<b>(24)</b>	<b>15,327</b>
<b>Total U.S. wheat export sales</b>	<b>5,843</b>	<b>8,247</b>	<b>(29)</b>	<b>20,411</b>
% of projected exports	30%	40%		
change from prior week <sup>2</sup>	<b>421</b>	<b>250</b>		
<b>Top 10 importers' share of U.S. wheat export sales</b>	<b>69%</b>	<b>64%</b>		<b>75%</b>
<b>USDA forecast, June 2023</b>	<b>19,755</b>	<b>20,681</b>	<b>(4)</b>	

<sup>1</sup>Based on USDA, Foreign Agricultural Service (FAS) marketing year ranking reports for 2022/23; Marketing year (MY) = Jun 1 - May 31.

<sup>2</sup>Cumulative exports (shipped) + outstanding sales (unshipped), FAS weekly export sales report, or export sales query. The total commitments change (net sales) from prior week could include revisions from the previous week's outstanding and/or accumulated sales.

<sup>3</sup>FAS marketing year ranking reports (carryover plus accumulated export); yr. = year; avg. = average.

Note: A red number in parentheses indicates a negative number.

Source: USDA, Foreign Agricultural Service.

Table 15

## Grain inspections for export by U.S. port region (1,000 metric tons)

Port regions	For the week ending 08/03/23	Previous week*	Current week as % of previous	2023 YTD*	2022 YTD*	2023 YTD as % of 2022 YTD	Last 4-weeks as % of:		2022 total*
							Last year	Prior 3-yr. avg.	
<b>Pacific Northwest</b>									
Wheat	98	273	36	6,079	5,339	114	111	68	9,836
Corn	0	0	n/a	3,923	8,623	46	0	0	9,615
Soybeans	0	0	n/a	3,533	4,566	77	16	39	14,178
<b>Total</b>	<b>98</b>	<b>274</b>	<b>36</b>	<b>13,536</b>	<b>18,528</b>	<b>73</b>	<b>50</b>	<b>36</b>	<b>33,629</b>
<b>Mississippi Gulf</b>									
Wheat	144	286	50	2,310	2,669	87	153	174	4,053
Corn	225	317	71	15,316	23,654	65	51	42	30,781
Soybeans	190	274	69	14,107	13,934	101	40	56	31,283
<b>Total</b>	<b>559</b>	<b>877</b>	<b>64</b>	<b>31,733</b>	<b>40,257</b>	<b>79</b>	<b>58</b>	<b>60</b>	<b>66,116</b>
<b>Texas Gulf</b>									
Wheat	1	13	5	1,304	1,984	66	5	4	3,421
Corn	18	15	118	177	463	38	44	59	648
Soybeans	0	0	n/a	52	2	n/a	n/a	n/a	685
<b>Total</b>	<b>18</b>	<b>28</b>	<b>66</b>	<b>1,533</b>	<b>2,449</b>	<b>63</b>	<b>12</b>	<b>12</b>	<b>4,754</b>
<b>Interior</b>									
Wheat	45	38	117	1,437	1,768	81	68	66	2,912
Corn	127	196	65	5,485	5,538	99	109	88	8,961
Soybeans	102	71	143	3,526	4,263	83	72	78	7,109
<b>Total</b>	<b>274</b>	<b>306</b>	<b>90</b>	<b>10,448</b>	<b>11,569</b>	<b>90</b>	<b>87</b>	<b>81</b>	<b>18,982</b>
<b>Great Lakes</b>									
Wheat	0	0	n/a	171	144	119	33	22	395
Corn	0	0	n/a	23	125	18	0	0	158
Soybeans	0	0	n/a	31	239	13	0	0	760
<b>Total</b>	<b>0</b>	<b>0</b>	<b>n/a</b>	<b>224</b>	<b>508</b>	<b>44</b>	<b>24</b>	<b>11</b>	<b>1,312</b>
<b>Atlantic</b>									
Wheat	2	2	72	75	113	66	20	49	169
Corn	0	0	n/a	78	217	36	0	0	309
Soybeans	4	6	77	1,226	1,563	78	73	62	2,867
<b>Total</b>	<b>6</b>	<b>8</b>	<b>76</b>	<b>1,379</b>	<b>1,892</b>	<b>73</b>	<b>27</b>	<b>48</b>	<b>3,345</b>
<b>U.S. total from ports*</b>									
Wheat	289	613	47	11,376	12,017	95	92	77	20,786
Corn	370	529	70	25,002	38,618	65	50	42	50,471
Soybeans	296	351	84	22,475	24,567	91	46	60	56,882
<b>Total</b>	<b>956</b>	<b>1,493</b>	<b>64</b>	<b>58,852</b>	<b>75,203</b>	<b>78</b>	<b>59</b>	<b>55</b>	<b>128,139</b>

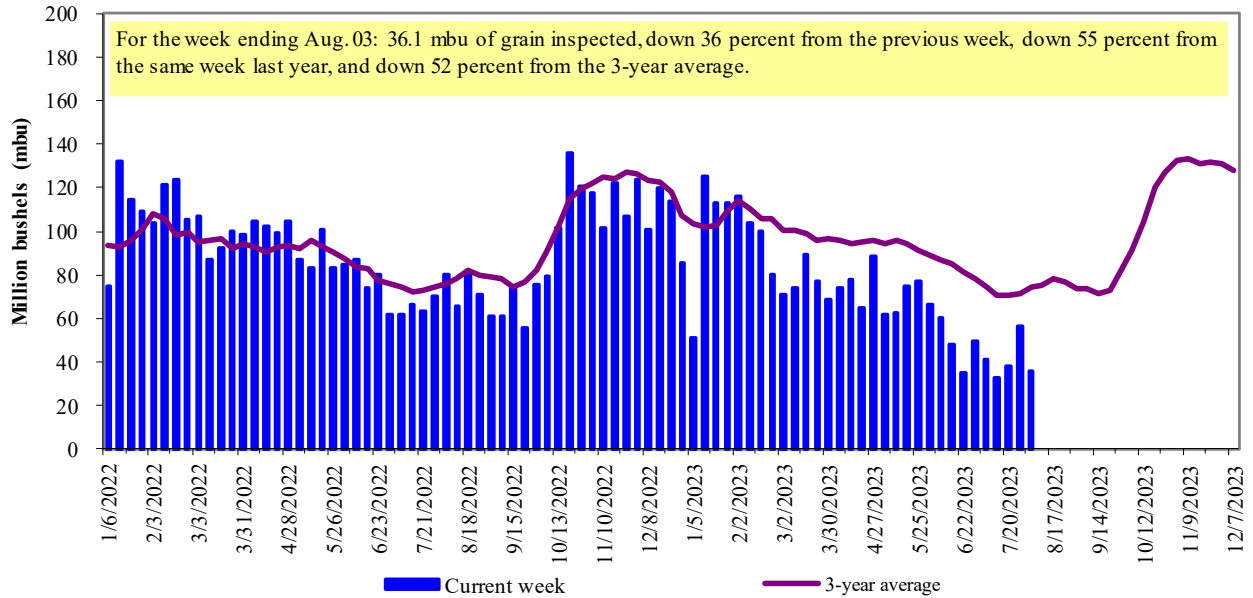
\*Data includes revisions from prior weeks; some regional totals may not add exactly due to rounding.

Source: USDA, Federal Grain Inspection Service; YTD= year-to-date; n/a = not applicable or no change.



Figure 13

**U.S. grain inspected for export (wheat, corn, and soybeans)**

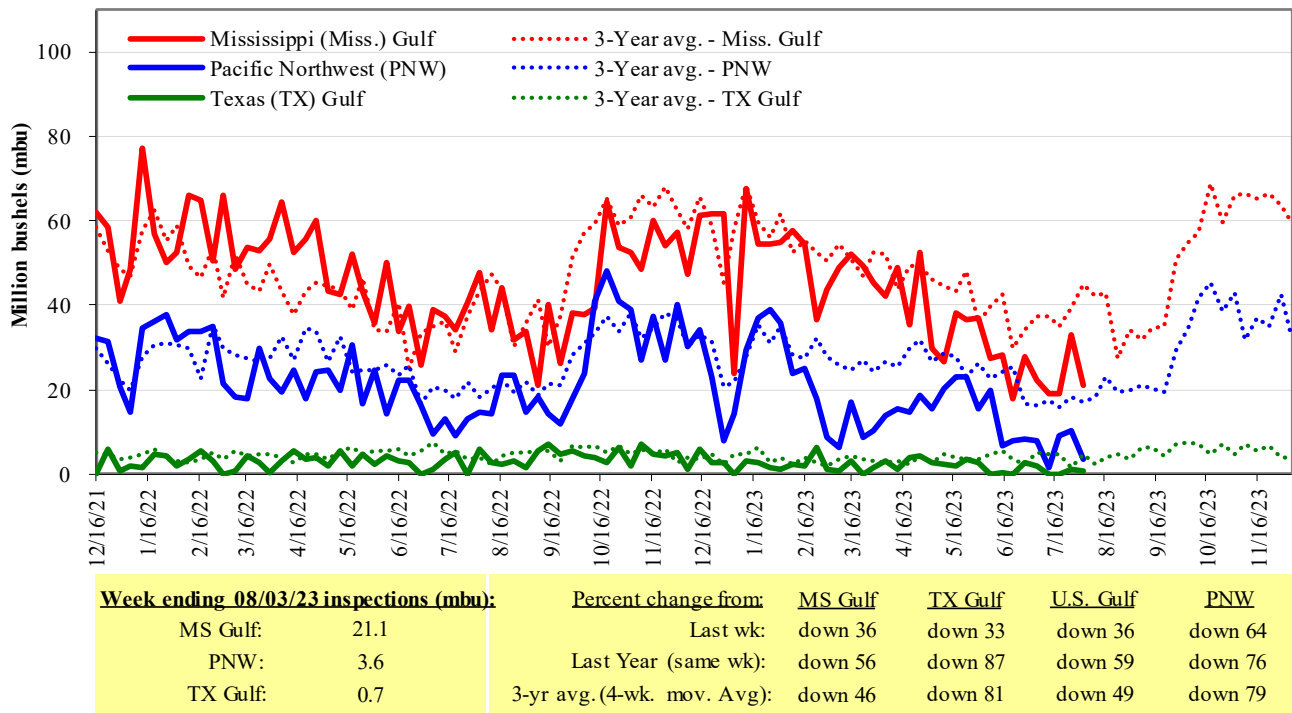


Note: 3-year average consists of 4-week running average.

Source: USDA, Federal Grain Inspection Service.

Figure 14

**U.S. Grain inspections: U.S. Gulf and PNW<sup>1</sup> (wheat, corn, and soybeans)**



Source: USDA, Federal Grain Inspection Service.

# Ocean Transportation

Table 16

**Weekly port region grain ocean vessel activity (number of vessels)**

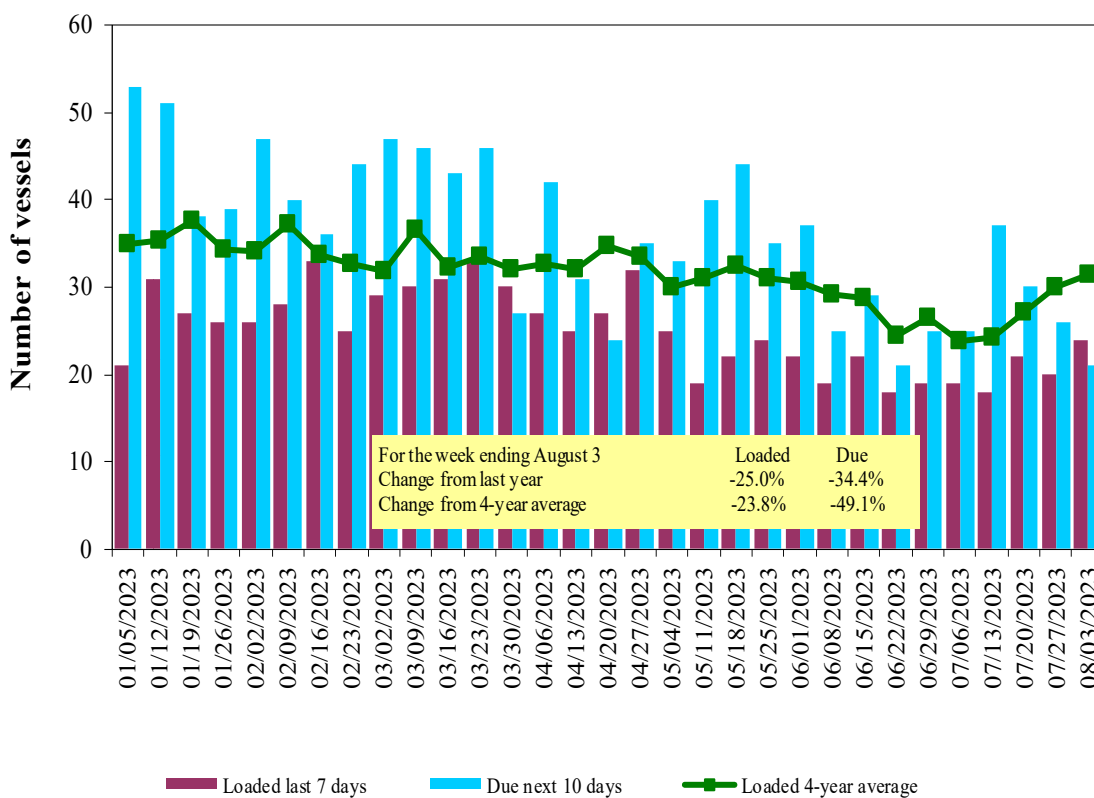
Date	Gulf			Pacific Northwest
	In port	Loaded	Due next	In port
		7-days	10-days	
8/3/2023	24	24	21	7
7/27/2023	29	20	26	1
2022 range	(14...61)	(18...39)	(28...62)	(5...23)
2022 average	30	28	44	13

Note: The data is voluntarily collected and may not be complete.

Source: USDA, Agricultural Marketing Service.

Figure 15

**U.S. Gulf<sup>1</sup> vessel loading activity**

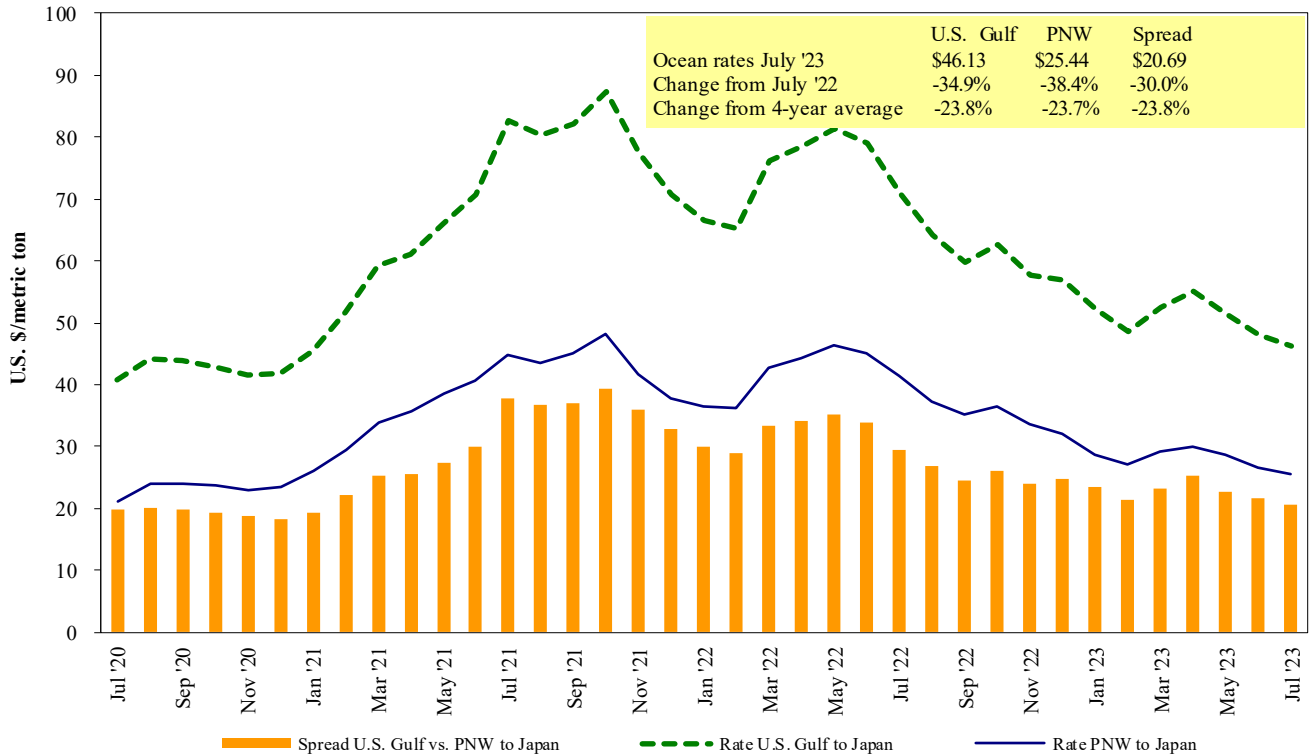


<sup>1</sup>U.S. Gulf includes Mississippi, Texas, and East Gulf.

Source: USDA, Agricultural Marketing Service.

Figure 16

Grain vessel rates, U.S. to Japan



Note: PNW = Pacific Northwest.

Source: O'Neil Commodity Consulting.

Table 17

Ocean freight rates for selected shipments, week ending 08/05/2023

Export region	Import region	Grain types	Loading date	Volume loads (metric tons)	Freight rate (US\$/metric ton)
U.S. Gulf	Japan	Heavy grain	May 2, 2023	50,000	56.70
U.S. Gulf	Japan	Heavy grain	May 1, 2023	50,000	54.80
U.S. Gulf	Japan	Heavy grain	Nov 1/10, 2022	50,000	79.25
U.S. Gulf	S. China	Corn	Aug 1/10, 2022	68,000	71.00
U.S. Gulf	Mexico	Soybean Meal	Oct 1/10, 2023	17,250	87.13*
U.S. Gulf	Dominican Republic	Soybean Meal	Oct 1/10, 2023	17,250	87.13*
U.S. Gulf	Jamaica	Wheat	Jun 20/30, 2023	4,400	63.00 op 66.00
PNW	Indonesia	Soybean Meal	Jul 21/31, 2023	35,000	106.00*
PNW	N. China	Heavy grain	Apr 21/27, 2023	63,000	28.00
PNW	N. China	Heavy grain	May 1/4, 2023	66,000	29.00
Brazil	S. Korea	Heavy grain	Jun 15/Jul 15, 2023	68,000	45.15
Brazil	S. Korea	Soybean Meal	Jun 1, 2023	60,000	53.75
Brazil	China	Heavy grain	Jul 1/31, 2023	63,000	41.50
Brazil	China	Heavy grain	May 5/10, 2023	65,000	36.50
Brazil	N. China	Heavy grain	Apr 21/30, 2023	66,000	40.60
Australia	Vietnam	Heavy grain	Feb 24/Apr 9, 2023	60,000	20.80

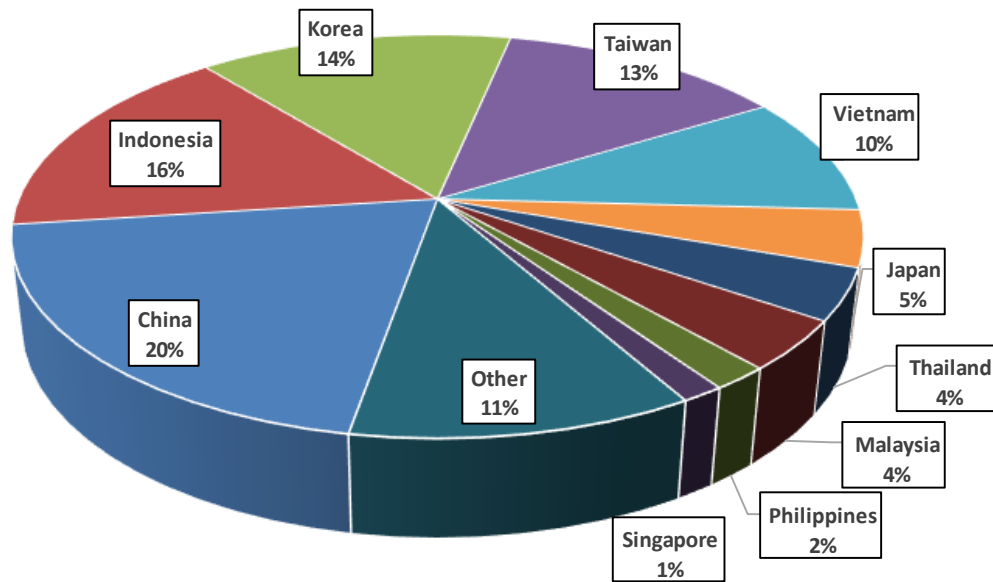
\*50 percent of food aid from the United States is required to be shipped on U.S.-flag vessels.

Note: Rates shown are per metric ton (2,204.62 lbs. = 1 metric ton), free on board (F.O.B), except where otherwise indicated; op = option.

Source: Maritime Research, Inc.

In 2020, containers were used to transport 10 percent of total U.S. waterborne grain exports. Approximately 66 percent of U.S. waterborne grain exports in 2020 went to Asia, of which 14 percent were moved in containers. Approximately 95 percent of U.S. waterborne containerized grain exports were destined for Asia.

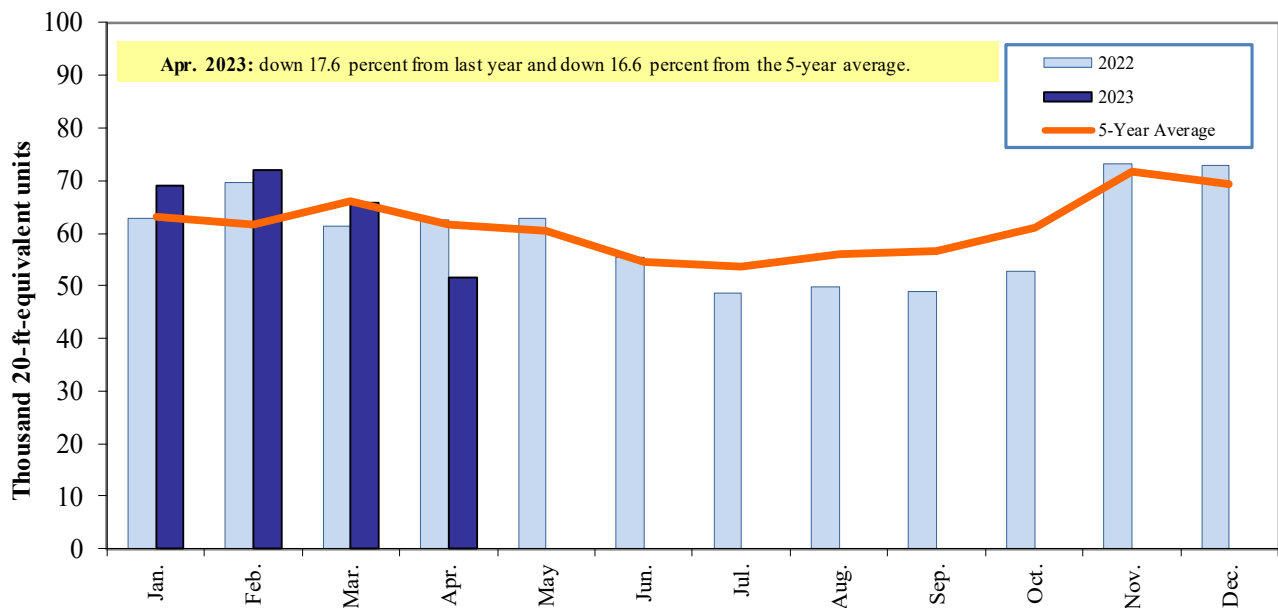
**Figure 17**  
**Top 10 destination markets for U.S. containerized grain exports, Jan-Apr 2023**



Note: The following Harmonized Tariff Codes are used to calculate containerized grains movements: '1001', '100190', '1002', '100200', '1003', '100300', '1004', '100400', '1005', '100590', '1007', '100700', '110100', '1102', '110220', '110290', '1201', '120100', '120190', '120810', '230210', '230310', '230330', '2304', and '230990'.

Source: USDA, Agricultural Marketing Service, Transportation Services Division analysis of PIERs data.

**Figure 18**  
**Monthly shipments of U.S. containerized grain exports**



Note: The following Harmonized Tariff Codes are used to calculate containerized grains movements: '1001', '100190', '1002', '100200', '1003', '100300', '1004', '100400', '1005', '100590', '1007', '100700', '110100', '1102', '110220', '110290', '1201', '120100', '120190', '120810', '230210', '230310', '230330', '2304', and '230990'.

Source: USDA, Agricultural Marketing Service, Transportation Services Division analysis of PIERs data.

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