



Grain Transportation Report

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Record Low River Gauge Along the Mississippi River System (MRS). On October 11, the Memphis, TN, water-level gauge on the Mississippi River captured an official **record low of -11.52 feet**. This surpasses the previous record low of -10.81 feet, from last October. On October 17, the Memphis gauge read an **unofficial record low of -11.98 feet** that the U.S. Army Corps of Engineers has not yet verified.

Records were also broken on the Ohio River at Cairo, IL, where the water-level gauge read 4.5 feet, **the lowest since 1901**, and on the Missouri River at New Madrid, MO, where the reading was -6 feet. Draft and tow-size restrictions are in place along the entire MRS. Despite some recent rain, more rain will be needed to raise water levels enough to improve navigation conditions.

Water levels are projected to rise by late October and early November, but navigation conditions are not expected to improve before late December or early January. Despite the navigation issues, last week, the St. Louis spot freight rate fell for the third week in a row to \$23.06 per ton—down 68 percent from the same week last year—and 496,000 tons of grain moved through MRS locks to the U.S. Gulf ([GTR table 9](#)).

SRW Wheat Exports Rise and HRW Wheat Exports Fall. Following several large purchases from China, U.S. Soft Red Winter (SRW) wheat exports for marketing year (MY) 2023/24 are projected to be 145 million bushels,

the largest since MY 2013/14, according to [USDA's Economic Research Service](#). Also projected at 145 million bushels, Hard Red Winter (HRW) wheat exports are expected to be below average.

If these projections are realized, this year would mark the first time, since official records began in the early 1970s, that SRW wheat exports equaled HRW wheat exports.

Primarily grown in the Southern Plains, HRW wheat is typically shipped by shuttle trains to the Texas Gulf coast for export. Primarily grown along the Mississippi River and in Eastern States, SRW wheat is typically shipped by barge through the Mississippi River System to the U.S. Gulf for export.

Norfolk Southern Increasing Intermodal Service to the West Coast.

According to an October 9 article from the *Journal of Commerce (JOC)*, Norfolk Southern Railway (NS) has expanded service for Midwest container shipments bound for ports on the West Coast. NS's intermodal terminals are open 7 days a week in Cincinnati and Columbus, OH; 6 days a week in Cleveland, OH, and Louisville, KY; and 5 days a week in Detroit, MI. From early 2022 until the recent service expansion, service on these lanes to the West Coast were open 3 days per week.

This enhanced service should expand the market opportunities for containerized grain exporters in the eastern Corn Belt States. According to [USDA's National Agricultural Statistics](#), all three States where NS has

enhanced service (Ohio, Kentucky, and Michigan) are expected to produce more corn and soybeans in 2023 compared to last year and the prior 5-year average.



Export Sales

For the week ending October 5, [unshipped balances](#) of wheat, corn, and soybeans for marketing year (MY) 2023/24 totaled 31.71 million metric tons (mmt), unchanged from last week and down 19 percent from the same time last year.

Net [corn export sales](#) for MY 2023/24 were 0.911 mmt, down 50 percent from last week. Net [soybean export sales](#) were 1.057 mmt, up 31 percent from last week. Net weekly [wheat export sales](#) for MY 2023/24 were 0.652 mmt, up 139 percent from last week.

Rail

U.S. Class I railroads originated 23,235 [grain carloads](#) during the week ending October 7. This was 26 percent more than the previous week, 6 percent more than last year, and 1 percent fewer than the 3-year average.

Average October [shuttle secondary railcar bids/offers](#) (per car) were \$163 below tariff for the week ending October 12. This was \$392 less than last week and \$2,379 lower than this week last year. Average non-shuttle secondary railcar bids/offers per car were at tariff. This was \$150 less than last week and \$600 lower than this week last year.

Barge

For the week ending October 14, [barged grain movements](#) totaled 496,214 tons. This was 29 percent more than the previous week and 22 percent less than the same period last year.

For the week ending October 14, 331 grain barges [moved down river](#)—84 more than last week. There were 867 grain barges [unloaded](#) in the New Orleans region, 5 percent fewer than last week.

Ocean

For the week ending October 12, 30 [oceangoing grain vessels](#) were loaded in the Gulf—36 percent more than the same period last year. Within the next 10 days (starting October 13), 46 vessels were expected to be loaded—22 percent fewer than the same period last year.

As of October 12, the rate for shipping a metric ton (mt) of grain from the U.S. Gulf to Japan was \$57.00. This was 1 percent less than the previous week. The rate from the Pacific Northwest to Japan was \$30.00 per mt, 2 percent less than the previous week.

Fuel

For the week ending October 16, the U.S. average [diesel fuel price](#) decreased 5.4 cents from the previous week to \$4.444 per gallon, 89.5 cents below the same week last year.



Grain Transportation Update: Demand Picks Up; Challenges Remain

After a fairly slow summer for grain transportation ([Grain Transportation Report \(GTR\), July 20, 2023](#)), signs of renewed demand are starting to emerge. U.S. farmers are currently harvesting an estimated 15.1-billion-bushel (bbu) corn crop (third-highest on record), 4.1-bbu soybean crop, and 0.36-bbu sorghum crop. Despite the anticipated historically large harvest, relatively low existing stocks suggest an ample storage surplus at the national level this fall ([GTR, October 12, 2023](#)). In recent weeks, signs of the large harvest can be seen in rail grain carloads—up about 80 percent from their summer lows. Another sign is the rising number of vessels lining up at Pacific Northwest (PNW) ports to support soybean exports.

Still, challenges to grain transportation remain. Water levels in the Mississippi River System (MRS) have continued to fall—eclipsing last year's record lows. Up from earlier in the year, barge rates are still below average—likely reflecting low corn and soybean export sales to China. Despite low water levels in the Panama Canal, resulting in limited daily transits, ocean freight rates from the U.S. Gulf to Japan remain below average.

Future grain transportation demand is expected to rise slightly. According to USDA's October [World Agricultural Supply and Demand Estimates \(WASDE\)](#), total disappearance for grain in marketing year (MY) 2023/24 is

expected to rise 2 percent from the previous year. Total disappearance for corn is expected to rise, but disappearance for soybeans and wheat are expected to fall.

Rail Grain Carloads Tick Up, and Service Remains Generally Strong

So far in 2023, rail grain carloads are down 12 percent from 2022 ([GTR table 3](#)). While still below average, grain carloads have increased in recent weeks. For the week ending October 7, the four U.S. Class I railroads (BNSF Railway, Union Pacific Railroad, CSX Transportation, and Norfolk Southern Railway) originated 23,235 total grain carloads—the most weekly carloads since January.

In the secondary rail market, where shippers buy and sell guaranteed freight, car values tend to rise during periods of poor rail service (e.g., 2014 and 2022) and in times of high demand—like August. In August, shippers' anticipation of harvest raised bids for October shuttle trains to \$1,200 per car. In September, however, October shuttle bids fell significantly. For the week ending October 12, bids (per car) were \$163 below tariff ([GTR fig. 4](#))—\$2,379 below the same week last year. The low bids suggest rail capacity is ample to meet the low demand, as reflected by lagging grain exports out of the PNW. (Exports from PNW are now starting to rise.)

Rail service for Class I railroads, as measured by the Surface Transportation Board ([available on AgTransport](#)), remains generally strong, though slightly worse than the 4-year average for this time of year. For the week ending October 7, average origin dwell time—i.e., from when a shuttle train is released at its origin or interchange until the receiving carrier moves the train—was around 21 hours. This time was slightly above the prior 4-year average (7 percent) for that week, but well below the peak of 47 hours at the start of 2023.

Below-Average Barged Grain Movements and Near-Average Spot Rates

Throughout the year, slow export sales have contributed to slow barge demand and low barged grain movements. Since the beginning of June, low water levels in the MRS have posed another challenge ([GTR, October 5, 2023](#)). Persistent low water led to restrictions on draft and tow sizes, which have become more stringent in the last few weeks. Rolling closures on the MRS for dredging and grounded barges have become commonplace as water levels have continued to fall. Normally, restrictions cause spot rates to increase, as was observed in third quarter 2022. However, this year, except for the last few weeks, spot rates have neared the prior 5-year average, because of low demand from slow export sales.

From the first week in July to the third week in October, the St. Louis spot rate rose from \$9.70 per ton to \$23.06 per ton. For the same period last year, the spot rate rose from \$12.93 per ton to \$72.58 per ton. The current St. Louis spot rate is 68 percent lower than last year's rate.

Since Mid-May, weekly grain movements have been below the 5-year average every week and lower than last year for all but 1 week. For the week ending October 14, year-to-date (YTD) 2023 barged grain movements totaled 18.9 million tons, versus last year's 25.4 million tons—a drop of 26 percent. Although MRS low-water issues begun earlier this year may have contributed to lower-than-average grain movements, slow export sales have had the greatest impact. Barged grain movements are expected to rise later in the harvest. However, it remains uncertain whether farmers will wait until MRS water levels return to normal before shipping their grain.

Dry-Bulk Ocean Freight Rates Reached New Highs, But Trended Down

After tapering from their previous April 13 highs, ocean freight rates for shipping grain edged up again after the week ending August 3. On September 21, rates reached yearly peaks of \$57.50 per metric ton (mt) for U.S. Gulf-to-Japan route and \$30.50 per mt for PNW-to-Japan route. The peaks partly owed to demand from Chinese manufacturers, pushing to ship orders overseas in time for the season's big holiday sales events. Also, China's imports of iron and coal rose to replenish low inventories

(*Shipping Insight*, Drewry Maritime Research, October 6, 2023). Ocean freight rates roughly stayed at their September peaks before dropping slightly in the week ending October 12, and also dipping below the same week a year ago.

In the week ending October 12, ocean freight rates were below prior years (see [Ocean snapshot](#)), partly reflecting the market's current pessimism about China's economic recovery, as well as very low expectations for an increase in cargo volumes (*Transportation and Export Report*, O'Neil Commodity Consulting, October 12, 2023).

YTD, as of October 12, an average of 25 oceangoing grain vessels per week were loaded in the U.S. Gulf, compared to 28 for the same period in 2022, and 31 for the same period in the prior 4 years. In PNW, an average of 9 vessels per week were loading or waiting to load, versus 12 for the same 2022 period. However, the number of vessels loading or waiting to load has risen to an average of 15 vessels per week during the last 4 weeks.

At the Panama Canal, the Panama Canal Authority is [working to address](#) persistent low-water challenges. Starting November 1, the average transits through the Canal will be adjusted to a total of 31 vessels per day: 9 through the Neopanamax locks and 22 through the Panamax locks. The Panamax locks' [normal transit capacity](#) is 34-36 vessels per day and, in the Neopanamax locks, 9-11 vessels per day, depending on vessel mix, transit restrictions, and other factors. The maximum

sustainable capacity of the Panama Canal (Panamax and Neopanamax locks) is about 38 vessels per day.

Diesel Prices Projected To Rise in Fourth Quarter

For the week ending October 16, the U.S. average diesel price fell 5.4 cents per gallon to \$4.444 per gallon, down 89.5 cents from the same time last year. Weekly average U.S. diesel prices fell for most of the first half of 2023, rising only five times. For 9 consecutive weeks—from the week ending July 24 to the week ending September 18—diesel prices increased a total of 72.8 cents per gallon. The increase stemmed from rising crude oil prices following production cuts by the Organization of the Petroleum Exporting Countries and its allies (OPEC+) and Saudi Arabia.

From the week ending September 25 to October 16, diesel prices fell 14.2 cents per gallon. Looking ahead, the Energy Information Administration's (EIA) October [Short-Term Energy Outlook](#) projects spot Brent crude oil prices will average \$94 per barrel in fourth quarter 2023 (up \$7 per barrel from the September forecast) and \$94.91 per barrel in 2024. Voluntary production cuts from Saudi Arabia and reduced production targets among OPEC+ countries are expected to keep oil production below oil consumption.

EIA also projects the fourth-quarter average per gallon diesel price at \$4.31 per gallon, up 14 cents from the previous quarter. U.S. diesel prices are projected to average \$4.29 per gallon in both 2023 and 2024, down 2 cents and up

22 cents, respectively, from EIA’s September forecast, and down from the 2022 average price of \$5.01 per gallon.

Grain Exports Increase in MY 2023/24

According to USDA’s October WASDE, total U.S. disappearance (domestic use, plus exports) of the three major grains is expected to total 20.4 bbu in MY 2023/24, up 2 percent from MY 2022/23. If the increase materializes, it will lift transportation demand. From MY 2022/23 to MY 2023/24, exports for these grains are projected to rise 2 percent, because of higher corn exports. Likewise, over the same period, domestic use is expected to rise 2 percent, mainly because of higher corn and soybean consumption (table 1).

Since WASDE’s September forecast, corn exports for MY 2023/24 were revised down by 0.64 million metric tons (mmt), based on a revised-down production estimate and low early season demand. Still, from MY 2022/23 to MY 2023/24, because of rising corn supply, U.S. corn exports are projected up 22 percent, to 51.5 mmt. As of October 5, unshipped corn exports, which represent future transportation demand, are 10 percent above the same time last year.

Soybean exports for MY 2023/24 were revised down by 0.954 mmt because of strong competition from Brazil and domestic demand for soybean oil for biodiesel. As a result, U.S. exports are projected to be 12 percent lower than MY 2022/23. As of October 5, unshipped soybean exports are 59 percent behind the same time last year.

For MY 2023/24, U.S. wheat exports are projected to fall 8 percent, because of uncompetitive prices and lower wheat supplies than other major exporters. Demand for U.S. wheat exports has been slow for hard red winter wheat and white wheat, but exports of soft red winter (SRW) wheat and hard red

spring wheat have recently increased (see [second highlight](#)). As of October 5, unshipped wheat exports are 38 percent above the same time in MY 2022/23, mainly because of China’s 220,000 metric-ton purchase of U.S. SRW wheat.

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Table 1. Major grains: production and use, October 2023

United States 2023/24 (projected)					
	Corn	Soybeans	Wheat	Total	Y/Y
- Million bushels -					
Production	15,064	4,104	1,812	20,980	6.9%
Exports	2,025	1,755	700	4,480	1.5%
Domestic use	12,315	2,428	1,159	15,902	2.3%
Ending stocks	2,111	220	670		
Total use	14,340	4,183	1,859		
Stocks/use	14.7%	5.3%	36.0%		
United States 2022/23 (estimated)					
	Corn	Soybeans	Wheat	Total	Y/Y
- Million bushels -					
Production	13,715	4,270	1,650	19,635	-7.3%
Exports	1,661	1,992	759	4,412	-18.6%
Domestic use	12,108	2,309	1,130	15,547	-2.1%
Ending stocks	1,361	268	582		
Total use	13,769	4,301	1,888		
Stocks/use	9.9%	6.2%	30.8%		
United States 2021/22					
	Corn	Soybeans	Wheat	Total	Y/Y
- Million bushels -					
Production	15,074	4,465	1,646	21,185	
Exports	2,472	2,152	796	5,420	
Domestic use	12,483	2,312	1,093	15,888	
Ending stocks	1,377	274	698		
Total use	14,956	4,464	1,889		
Stocks/use	9.2%	6.1%	37.0%		

Source: USDA, *World Agricultural Supply and Demand Estimates*, October 2023.

Grains are transported to the domestic and international markets via one or a combination of the following modes: truck, rail, barge and ocean-going vessel. Monitoring the cost of transportation for each mode is vital to the marketing decision making process.

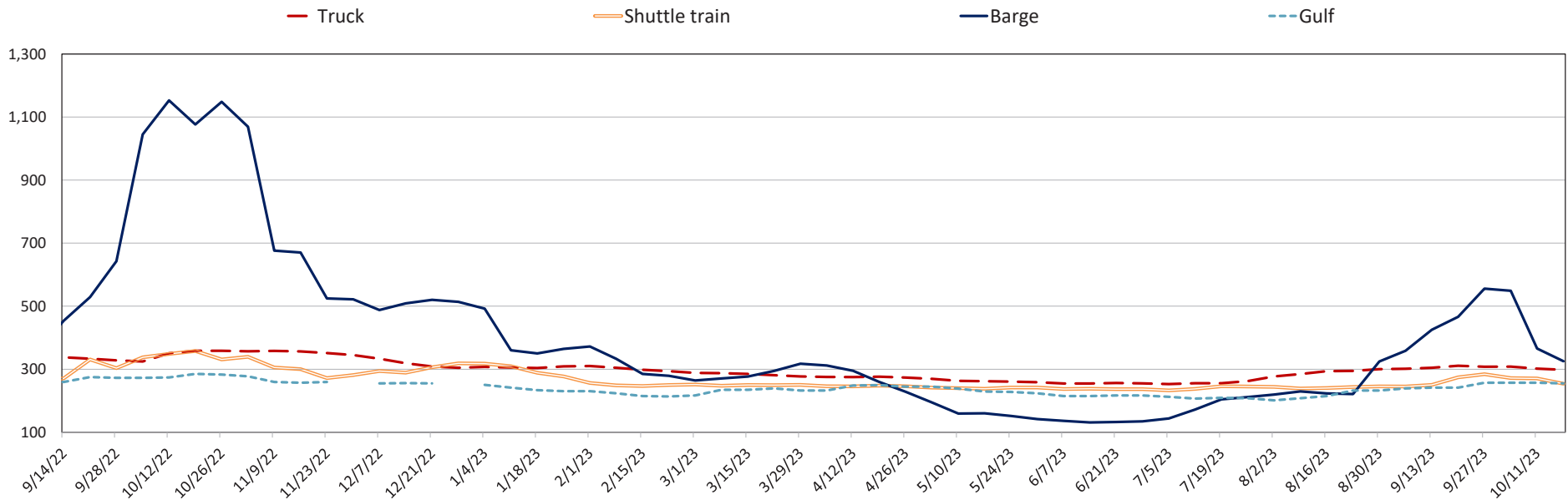
Table 1. Grain transport cost indicators

For the week ending:	Truck	Rail		Barge	Ocean	
		Non-shuttle	Shuttle		Gulf	Pacific
10/18/23	298	332	254	326	255	213
10/11/23	302	340	271	366	257	216
10/19/22	358	366	358	1077	285	303

Note: 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.

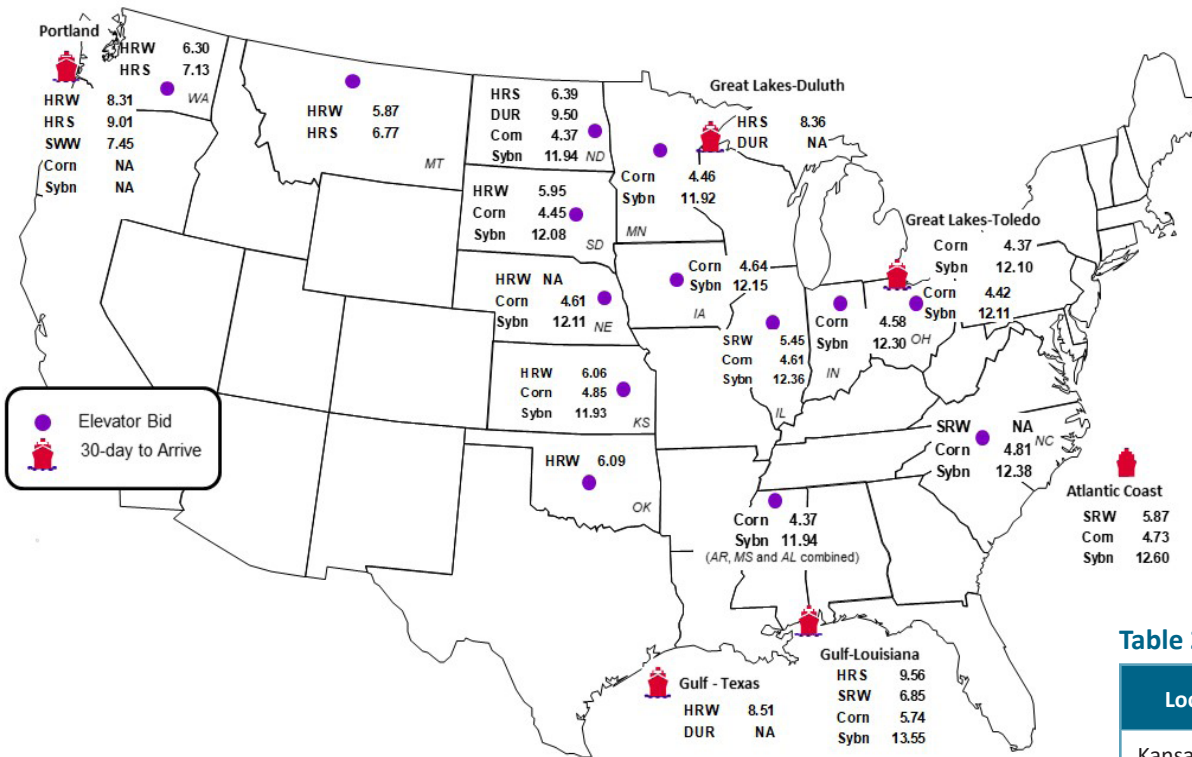
Figure 1. Grain transportation cost indicators as of week ending 10/18/23



Source: USDA, Agricultural Marketing Service.

Figure 2. Grain bid summary

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.



Inland bids: 12% HRW, 14% HRS, #1 SRW, #1 DUR, #1 SWW, #2 Y Corn, #1 Y Soybeans
 Export bids: Ord HRW, 14% HRS, #2 SRW, #2 DUR, #2 SWW, #2 Y Corn, #1 Soybeans
 Note: HRW = Hard red winter wheat, HRS = Hard red spring wheat, SRW = Soft red winter wheat, DUR = Durum, SWW = Soft white winter wheat, Y = Yellow, Ord = Ordinary. Data from tables 2a and 2b derived from map information.
 Sources: U.S. Inland: GeoGrain, USDA Weekly Bids, U.S. Export: Corn & Soybean - Export Grain Bids, AMS, USDA Wheat Bids - Weekly Wheat Report, U.S. Wheat Associates, Washington, DC.

Table 2a. Market update: U.S. origins to export position price spreads (\$/bushel)

Commodity	Origin-destination	10/13/2023	10/6/2023
Corn	IL-Gulf	-1.13	-1.23
Corn	NE-Gulf	-1.13	-1.21
Soybean	IA-Gulf	-1.40	-1.45
HRW	KS-Gulf	-2.45	-2.41
HRS	ND-Portland	-2.62	-2.66

Note: nq = no quote; n/a = not available; HRW = hard red winter wheat; HRS = hard red spring wheat.
 Source: USDA, Agricultural Marketing Service.

Table 2b. Futures

Location	Grain	Month	10/13/2023	Week ago 10/06/2023	Year ago 10/14/2022
Kansas City	Wheat	Dec	6.674	6.810	9.604
Minneapolis	Wheat	Dec	7.220	7.204	9.614
Chicago	Wheat	Dec	5.824	5.766	8.682
Chicago	Corn	Dec	4.920	4.940	6.890
Chicago	Soybean	Nov	12.806	12.706	13.872

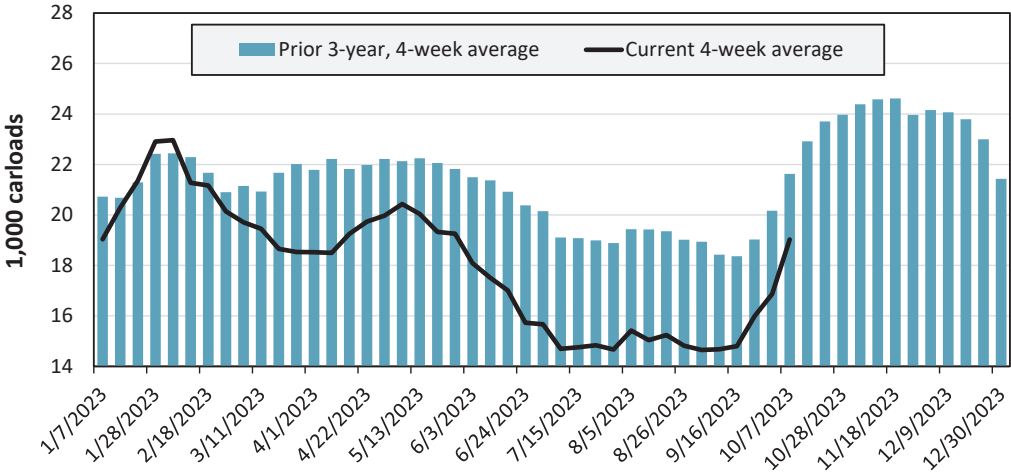
Sources: U.S. Inland: GeoGrain, USDA Weekly Bids, U.S. Export: Corn & Soybean - Export Grain Bids, AMS, USDA Wheat Bids - Weekly Wheat Report, U.S. Wheat Associates, Washington, DC.

Table 3. Class I rail carrier grain car bulletin (grain carloads originated)

For the week ending: 10/07/2023	East		West		U.S. total	Central U.S./Canada	
	CSXT	NS	BNSF	UP		CPKC	CN
This week	2,028	2,340	12,415	6,452	23,235	6,527	5,153
This week last year	1,611	2,220	12,451	5,550	21,832	12,598	4,773
2023 YTD	67,910	98,863	351,329	206,499	724,601	329,169	172,953
2022 YTD	68,647	95,193	433,320	228,412	825,572	372,176	141,515
2023 YTD as % of 2022 YTD	99	104	81	90	88	88	122
Last 4 weeks as % of 2022	112	85	97	96	96	98	98
Last 4 weeks as % of 3-yr. avg.	98	85	88	87	88	102	110
Total 2022	93,428	130,674	570,232	296,945	1,091,279	538,276	213,739

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



For the 4 weeks ending October 7, grain carloads were up 13 percent from the previous week, down 4 percent from last year, and down 12 percent from the 3-year average.

Source: Association of American Railroads.

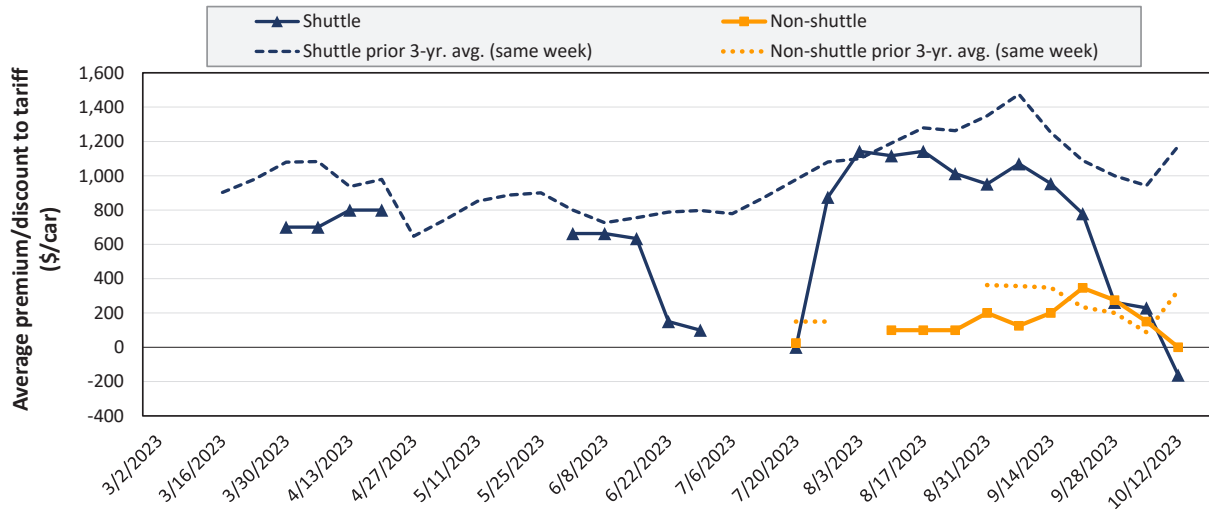
Table 4. Railcar auction offerings (dollars per car)

For the week ending: 10/12/2023		Delivery period							
		Oct-23	Oct-22	Nov-23	Nov-22	Dec-23	Dec-22	Jan-24	Jan-23
BNSF	COT grain units	no offer	no bids	no offer	no bids	no offer	no bids	no offer	0
	COT grain single-car	n/a	no bids	n/a	315	0	39	280	159
UP	GCAS/vouchers	n/a	n/a	no offer	n/a	no offer	n/a	n/a	n/a

Note: Auction offerings are for single-car and unit train shipments only. Bids and offers represent a premium/discount to tariff rates. n/a = not available. 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.

Primary auction market rates reflect offers and bids made between railroads and shippers for guaranteed car service. The secondary rail market information reflects trade values for service agreements traded between shippers that were originally purchased from the railroad carrier. The auction and secondary rail values are indicators of rail service quality and demand/supply. Bids and offers listed in the primary and secondary auctions are market indicators only and are not guaranteed prices.

Figure 4: Secondary market bids/offers for railcars to be delivered in October 2023



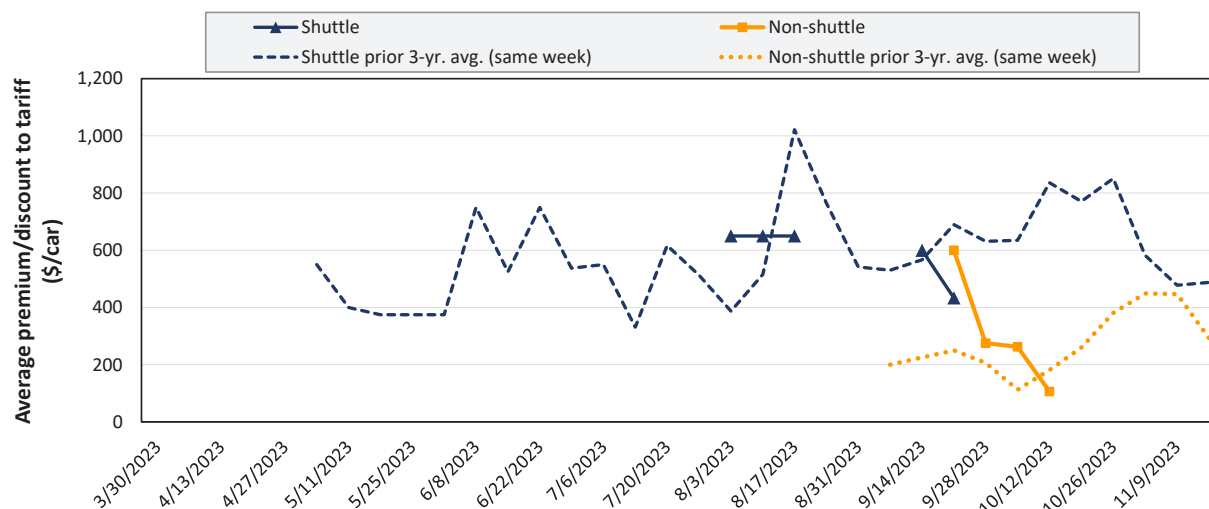
Average non-shuttle bids/offers fell \$150 this week, and are \$346 below the peak.

Average shuttle bids/offers fell \$392 this week and are \$1,305 below the peak.

10/12/2023	BNSF	UP
Non-Shuttle	\$0	n/a
Shuttle	-\$225	-\$100

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 analysis of data from Tradewest Brokerage Company and the Malsam Company.

Figure 5: Secondary market bids/offers for railcars to be delivered in November 2023



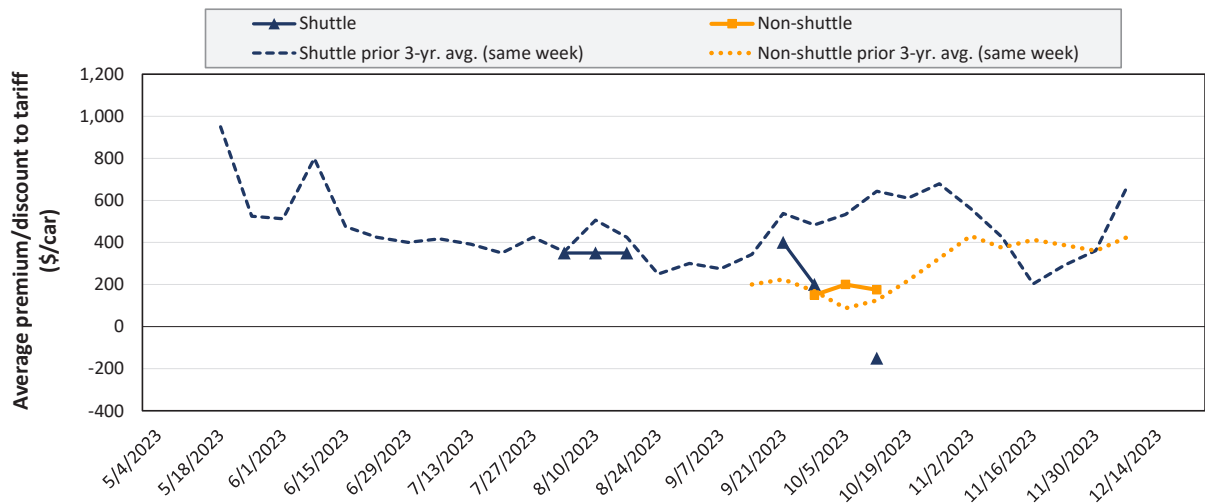
Average non-shuttle bids/offers fell \$156 this week, and are \$494 below the peak.

There were no shuttle bids/offers this week.

10/12/2023	BNSF	UP
Non-Shuttle	\$100	\$113
Shuttle	n/a	n/a

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 analysis of data from Tradewest Brokerage Company and the Malsam Company.

Figure 6: Secondary market bids/offers for railcars to be delivered in December 2023



Average non-shuttle bids/offers fell \$25 this week, and are \$25 below the peak.

There were no shuttle bids/offers last week. Average shuttle bids/offers this week are \$550 below the peak.

10/12/2023	BNSF	UP
Non-Shuttle	n/a	\$175
Shuttle	-\$150	n/a

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 analysis of data from Tradewest Brokerage Company and the Malsam Company.

Table 5. Weekly secondary railcar market (dollars per car)

For the week ending: 10/12/2023		Delivery period					
		Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24
Non-shuttle	BNSF-GF	0	100	n/a	n/a	n/a	n/a
	Change from last week	-200	-250	n/a	n/a	n/a	n/a
	Change from same week 2022	-600	-200	n/a	n/a	n/a	n/a
	UP-Pool	n/a	113	175	n/a	n/a	n/a
	Change from last week	n/a	-63	-25	n/a	n/a	n/a
	Change from same week 2022	n/a	-163	75	n/a	n/a	n/a
Shuttle	BNSF-GF	-225	n/a	-150	n/a	n/a	n/a
	Change from last week	-500	n/a	n/a	n/a	n/a	n/a
	Change from same week 2022	-2,658	n/a	-1,500	n/a	n/a	n/a
	UP-Pool	-100	n/a	n/a	n/a	n/a	n/a
	Change from last week	-283	n/a	n/a	n/a	n/a	n/a
	Change from same week 2022	-2,100	n/a	n/a	n/a	n/a	n/a
	CP-GF	n/a	100	400	n/a	n/a	n/a
	Change from last week	n/a	-300	0	n/a	n/a	n/a
Change from same week 2022	n/a	n/a	n/a	n/a	n/a	n/a	

Note: Bids and offers represent a premium/discount to tariff rates; n/a = not available; GF = guaranteed freight; Pool = guaranteed pool; BNSF = BNSF Railway; UP = Union Pacific Railroad; CP = Canadian Pacific Railway.
 Source: USDA, Agricultural Marketing Service analysis of data from Tradewest Brokerage Company and the Malsam Company.

The tariff rail rate is the base price of freight rail service. Together with fuel surcharges and any auction and secondary rail values, the tariff rail rate constitutes the full cost of shipping by rail. Typically, auction and secondary rail values are a small fraction of the full cost of shipping by rail relative to the tariff rate. However, during times of high rail demand or short supply, high auction and secondary rail values can exceed the cost of the tariff rate plus fuel surcharge.

Table 6. Tariff rail rates for unit train shipments

October 2023	Origin region	Destination region	Tariff rate/car	Fuel surcharge per car	Tariff plus surcharge per metric ton	Tariff plus surcharge per bushel	Percent Change Y/Y
Wheat	Wichita, KS	St. Louis, MO	\$4,095	\$233	\$42.98	\$1.17	4
	Grand Forks, ND	Duluth-Superior, MN	\$4,008	\$86	\$40.66	\$1.11	3
	Wichita, KS	Los Angeles, CA	\$7,340	\$444	\$77.30	\$2.10	-5
	Wichita, KS	New Orleans, LA	\$4,825	\$409	\$51.98	\$1.41	2
	Sioux Falls, SD	Galveston-Houston, TX	\$7,111	\$364	\$74.23	\$2.02	-4
	Colby, KS	Galveston-Houston, TX	\$5,075	\$449	\$54.85	\$1.49	2
	Amarillo, TX	Los Angeles, CA	\$5,121	\$624	\$57.05	\$1.55	-3
Corn	Champaign-Urbana, IL	New Orleans, LA	\$4,000	\$463	\$44.32	\$1.13	-3
	Toledo, OH	Raleigh, NC	\$8,877	\$516	\$93.28	\$2.37	2
	Des Moines, IA	Davenport, IA	\$2,830	\$98	\$29.08	\$0.74	5
	Indianapolis, IN	Atlanta, GA	\$6,866	\$388	\$72.03	\$1.83	2
	Indianapolis, IN	Knoxville, TN	\$5,790	\$251	\$59.99	\$1.52	3
	Des Moines, IA	Little Rock, AR	\$4,425	\$288	\$46.80	\$1.19	2
	Des Moines, IA	Los Angeles, CA	\$6,305	\$839	\$70.94	\$1.80	-1
Soybeans	Minneapolis, MN	New Orleans, LA	\$3,556	\$698	\$42.24	\$1.15	-20
	Toledo, OH	Huntsville, AL	\$7,269	\$368	\$75.84	\$2.06	2
	Indianapolis, IN	Raleigh, NC	\$8,169	\$523	\$86.32	\$2.35	2
	Indianapolis, IN	Huntsville, AL	\$5,921	\$248	\$61.27	\$1.67	3
	Champaign-Urbana, IL	New Orleans, LA	\$5,040	\$463	\$54.65	\$1.49	1

Note: 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. The table assumes 111 short tons (100.7 metric tons) per car, 56 pounds per bushel of corn, and 60 pounds per bushel of wheat and soybeans. Percentage change year to year (Y/Y) is calculated using the tariff rate plus fuel surcharge

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

Table 7. Tariff rail rates for shuttle train shipments

October 2023	Origin region	Destination region	Tariff rate/car	Fuel surcharge per car	Tariff plus surcharge per metric ton	Tariff plus surcharge per bushel	Percent Change Y/Y
Wheat	Great Falls, MT	Portland, OR	\$4,543	\$255	\$47.65	\$1.30	0
	Wichita, KS	Galveston-Houston, TX	\$4,611	\$199	\$47.76	\$1.30	4
	Chicago, IL	Albany, NY	\$7,413	\$487	\$78.45	\$2.14	3
	Grand Forks, ND	Portland, OR	\$6,201	\$441	\$65.96	\$1.80	-1
	Grand Forks, ND	Galveston-Houston, TX	\$5,549	\$459	\$59.66	\$1.62	-2
	Colby, KS	Portland, OR	\$5,923	\$736	\$66.12	\$1.80	-3
Corn	Minneapolis, MN	Portland, OR	\$5,660	\$537	\$61.54	\$1.56	-5
	Sioux Falls, SD	Tacoma, WA	\$5,620	\$492	\$60.69	\$1.54	-4
	Champaign-Urbana, IL	New Orleans, LA	\$4,345	\$463	\$47.74	\$1.21	1
	Lincoln, NE	Galveston-Houston, TX	\$4,560	\$287	\$48.13	\$1.22	1
	Des Moines, IA	Amarillo, TX	\$4,845	\$362	\$51.71	\$1.31	1
	Minneapolis, MN	Tacoma, WA	\$5,660	\$532	\$61.49	\$1.56	-5
Soybeans	Council Bluffs, IA	Stockton, CA	\$5,780	\$551	\$62.87	\$1.60	-2
	Sioux Falls, SD	Tacoma, WA	\$6,535	\$492	\$69.78	\$1.90	-1
	Minneapolis, MN	Portland, OR	\$6,585	\$537	\$70.72	\$1.92	-2
	Fargo, ND	Tacoma, WA	\$6,435	\$437	\$68.24	\$1.86	-1
	Council Bluffs, IA	New Orleans, LA	\$5,270	\$534	\$57.63	\$1.57	0
	Toledo, OH	Huntsville, AL	\$5,509	\$368	\$58.36	\$1.59	2
	Grand Island, NE	Portland, OR	\$5,905	\$753	\$66.12	\$1.80	-1

Note: 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. The table assumes 111 short tons (100.7 metric tons) per car, 56 pounds per bushel of corn, and 60 pounds per bushel of wheat and soybeans. Percentage change year to year (Y/Y) is calculated using the tariff rate plus fuel surcharge.

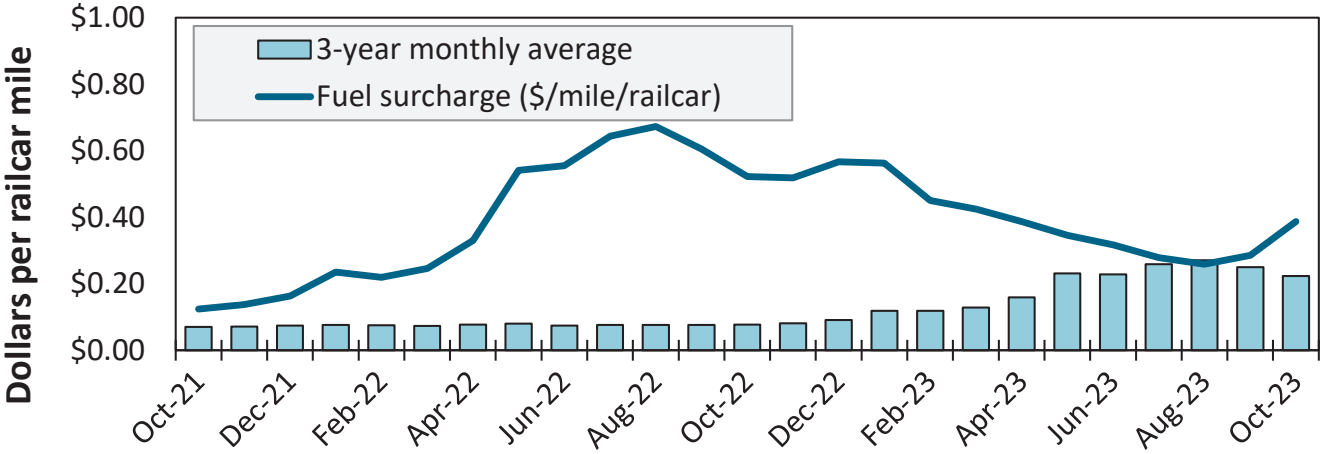
Source: BNSF Railway, Canadian National Railway, CSX Transportation, and Union Pacific Railroad.

Table 8. Tariff rail rates for U.S. bulk grain shipments to Mexico

December 2021	Origin state	Destination region	Tariff rate per car	Fuel surcharge per car	Tariff rate plus fuel surcharge per:		Percent change Y/Y
					metric ton	bushel	
Wheat	MT	Chihuahua, CI	\$7,699	\$0	\$78.67	\$2.14	4
	OK	Cuautitlan, 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

Note: Rates are based on published tariff rates for high-capacity shuttle trains. Shuttle trains are available for qualified shipments of 75-110 cars that meet railroad efficiency requirements. The table assumes 97.87 metric tons per car, 56 pounds per bushel for corn and sorghum, and 60 pounds per bushel for wheat and soybeans. Percentage change year over year (Y/Y) is calculated using the tariff rate plus fuel surcharge. **As of January 1, both BNSF and Union Pacific changed their billing and reporting of rates to Mexico. As we incorporate the change, table 8 updates will be delayed.**
 Source: BNSF Railway, Union Pacific Railroad, Kansas City Southern.

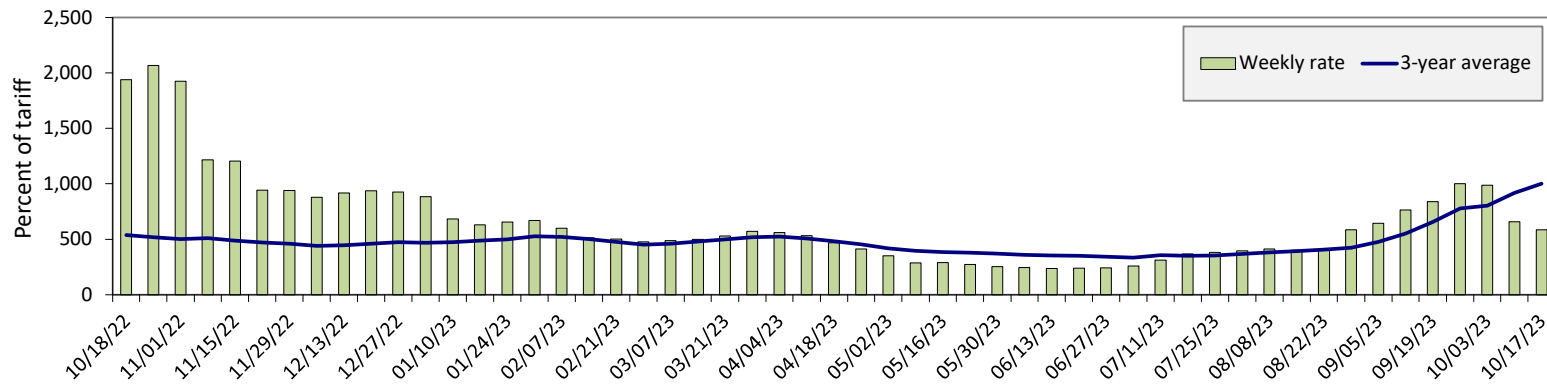
Figure 7. Railroad fuel surcharges, North American weighted average



October 2023: \$0.39/mile, up 10 cents from last month's surcharge of \$0.29/mile; down 13 cents from the October 2022 surcharge of \$0.52/mile; and up 17 cents from the October prior 3-year average of \$0.22/mile.

Note: Weighted by each Class I railroad's proportion of grain traffic for the prior year.
 Source: BNSF Railway, Canadian National Railway, CSX Transportation, Canadian Pacific Railway, Union Pacific Railroad, Kansas City Southern Railway, Norfolk Southern Corporation.

Figure 8. Illinois River barge freight rate



For the week ending October 17: 11 percent lower than the previous week; and 70 percent lower than last year; and 41 percent lower than the 3-year average.

Note: Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); 3-year avg. = 4-week moving average of the 3-year average.
Source: USDA, Agricultural Marketing Service.

Table 9. Weekly barge freight rates: southbound only

Measure	Date	Twin Cities	Mid-Mississippi	Lower Illinois River	St. Louis	Cincinnati	Lower Ohio	Cairo-Memphis
Rate	10/17/2023	565	580	586	578	607	607	546
	10/10/2023	619	650	658	642	693	693	624
\$/ton	10/17/2023	34.97	30.86	27.19	23.06	28.47	24.52	17.14
	10/10/2023	38.32	34.58	30.53	25.62	32.50	28.00	19.59
Measure	Time Period	Twin Cities	Mid-Mississippi	Lower Illinois River	St. Louis	Cincinnati	Lower Ohio	Cairo-Memphis
Current week % change from the same week	Last year	-59	-69	-70	-68	-71	-71	-72
	3-year avg.	-36	-42	-41	-46	-44	-44	-51
Rate	November	567	547	535	477	530	530	434
	January	-	-	513	418	456	456	385

Note: Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); 3-year avg. = 4-week moving average of the 3-year avg.; ton = 2,000 pounds; "-" = data not available.
Source: USDA, Agricultural Marketing Service.

Figure 9. Benchmark tariff rates



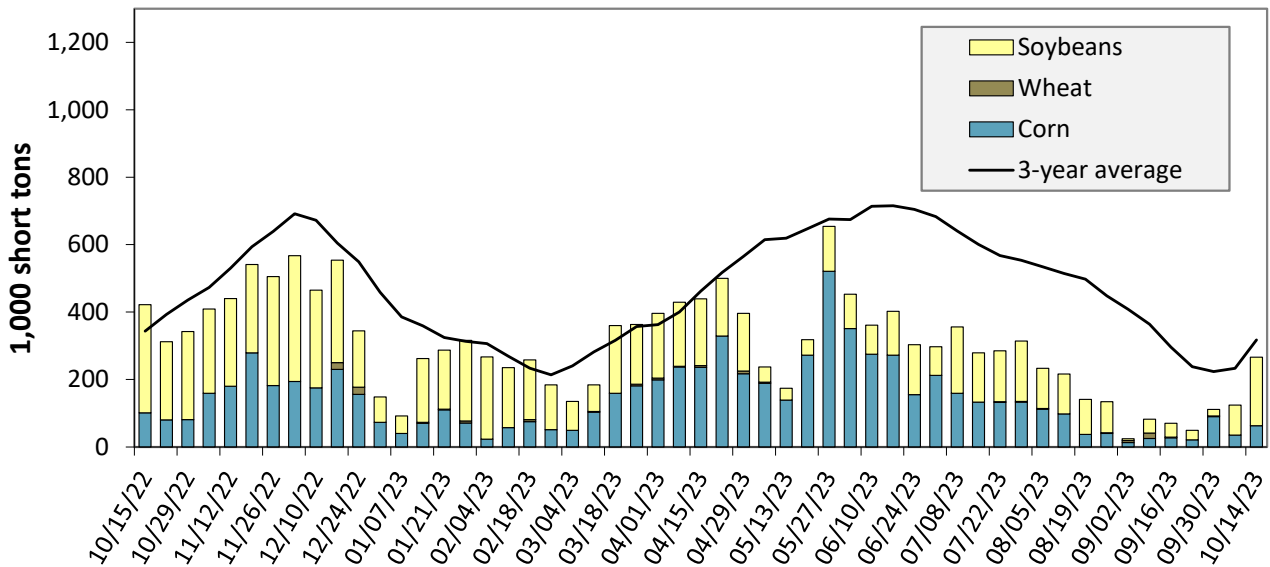
Calculating barge rate per ton:

$$\text{Rate} \times \text{1976 tariff benchmark rate per ton} / 100$$

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

Source: USDA, Agricultural Marketing Service.

Figure 10. Barge movements on the Mississippi River (Locks 27-Granite City, IL)



For the week ending October 14: 37 percent lower than last year and 16 percent lower than the 3-year average.

Note: The 3-year average is a 4-week moving average. 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.

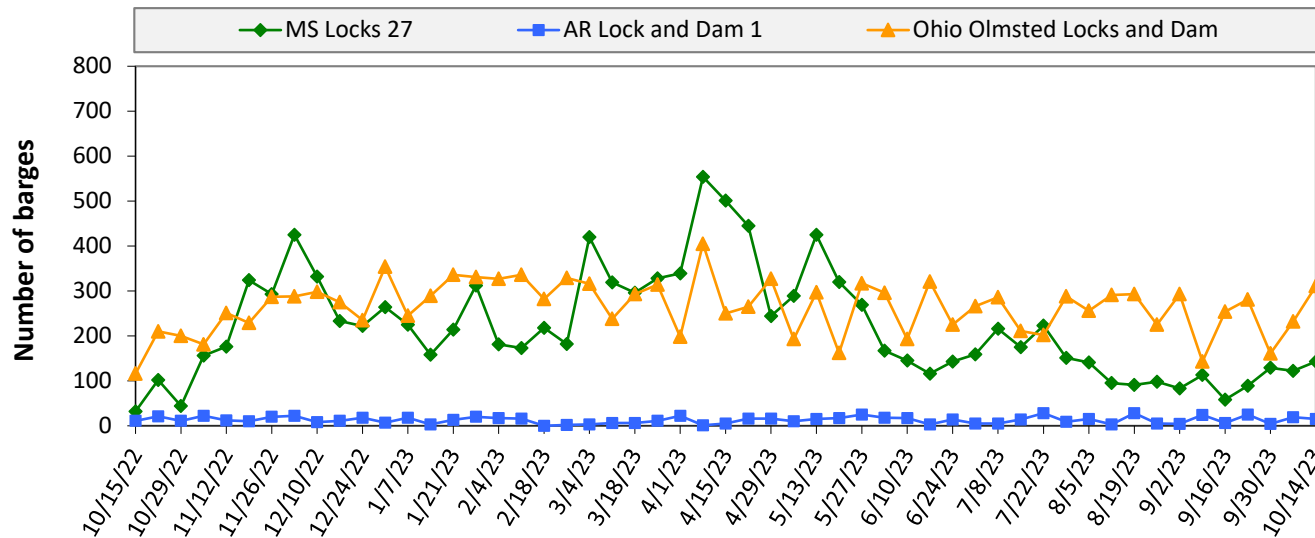
Table 10. Barged grain movements (1,000 tons)

For the week ending 10/14/2023	Corn	Wheat	Soybeans	Other	Total
Mississippi River (Rock Island, IL (L15))	20	0	90	0	111
Mississippi River (Winfield, MO (L25))	39	0	137	0	177
Mississippi River (Alton, IL (L26))	56	0	203	0	259
Mississippi River (Granite City, IL (L27))	63	0	203	0	266
Illinois River (La Grange)	11	0	46	0	56
Ohio River (Olmsted)	70	0	135	4	209
Arkansas River (L1)	4	3	14	0	21
Weekly total - 2023	137	3	353	4	496
Weekly total - 2022	195	3	426	16	640
2023 YTD	9,435	1,152	8,150	205	18,943
2022 YTD	13,888	1,498	9,851	206	25,443
2023 as % of 2022 YTD	68	77	83	100	74
Last 4 weeks as % of 2022	81	146	77	21	80
Total 2022	16,437	1,594	14,464	232	32,727

Note: "Other" refers to oats, barely, sorghum, and rye. Total may not add up due to rounding. YTD = year to date. Weekly total, YTD, and calendar year total include Mississippi River lock 27, Ohio River Olmsted lock, and Arkansas Lock 1. "L" (as in "L15") refers to a lock, locks, or lock 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.

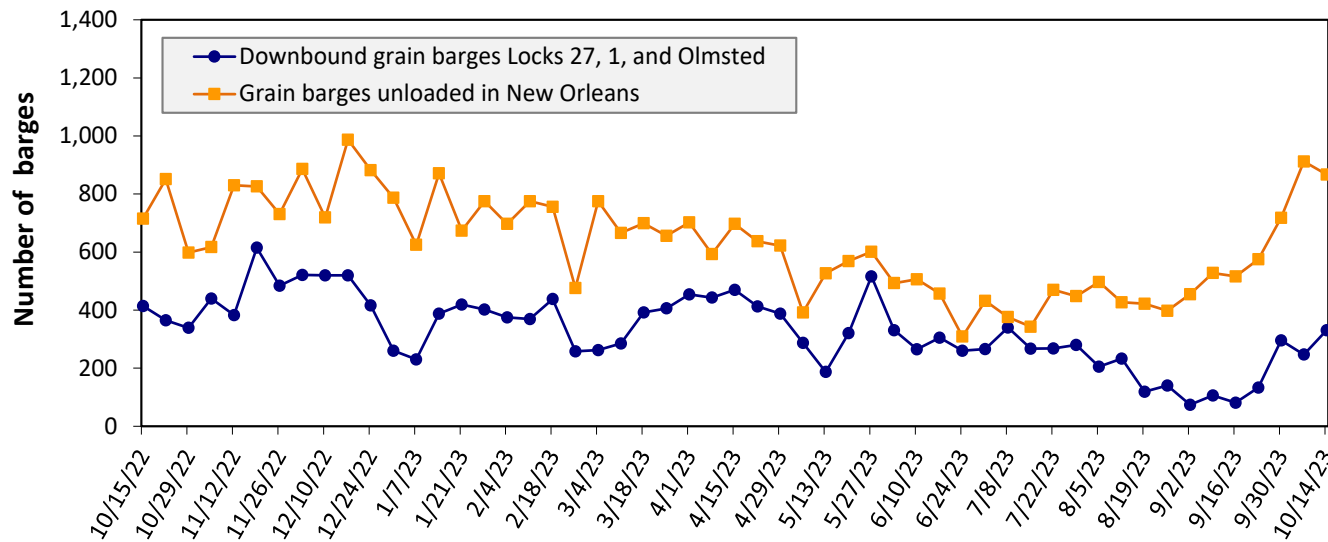
Figure 11. Upbound empty barges transiting Mississippi River Locks 27, Arkansas River Lock and Dam 1, and Ohio River Olmsted Locks and Dam



For the week ending October 14: 469 barges transited the locks, 96 barges more than the previous week, and 18 percent higher than the 3-year 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.

Figure 12. Grain barges for export in New Orleans region



For the week ending October 14: 331 barges moved down river, 84 more than the previous week; 867 grain barges unloaded in the New Orleans Region, 5 percent fewer than the previous week.

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.

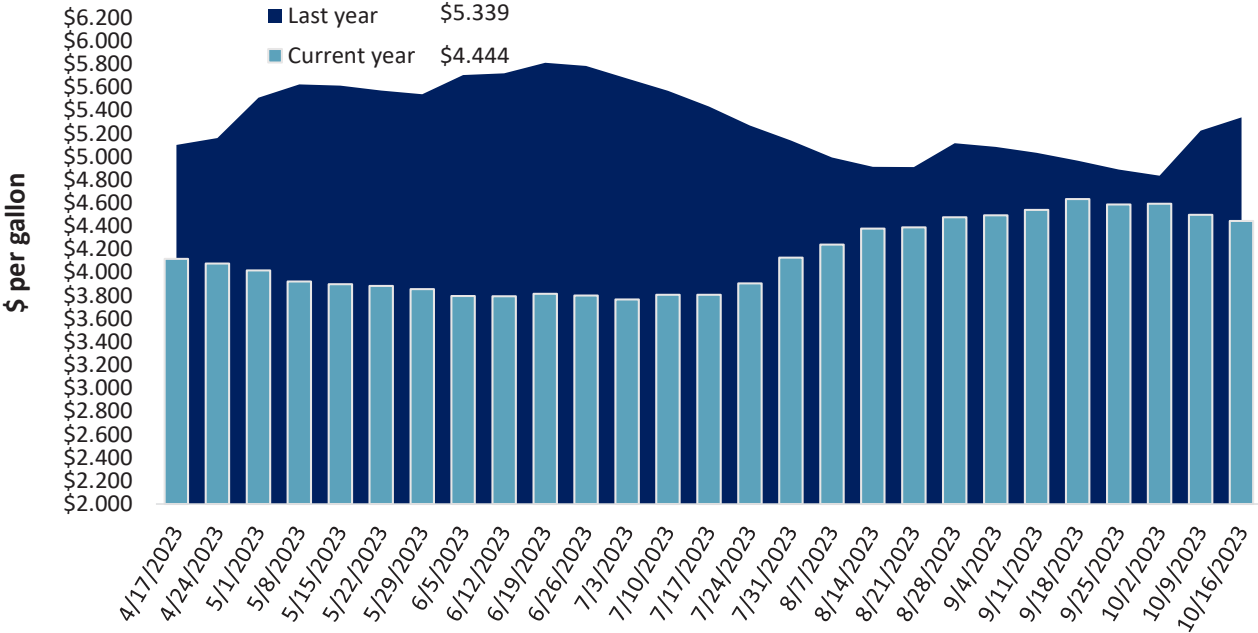
The weekly diesel price provides a proxy for trends in U.S. truck rates as diesel fuel is a significant expense for truck grain movements.

Table 11. Retail on-highway diesel prices, week ending 10/16/2023 (U.S. \$/gallon)

Region	Location	Price	Change from	
			Week ago	Year ago
I	East Coast	4.404	-0.054	-0.946
	New England	4.557	-0.020	-1.038
	Central Atlantic	4.672	-0.049	-1.056
	Lower Atlantic	4.290	-0.059	-0.900
II	Midwest	4.304	-0.072	-1.042
III	Gulf Coast	4.114	-0.025	-0.904
IV	Rocky Mountain	4.664	-0.053	-0.604
V	West Coast	5.528	-0.072	-0.469
	West Coast less California	5.010	-0.083	-0.562
	California	6.119	-0.059	-0.380
Total	United States	4.444	-0.054	-0.895

Note: Diesel fuel prices include all taxes. Prices represent an average of all types of diesel fuel. 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 13. Weekly diesel fuel prices, U.S. average



For the week ending October 16, the U.S. average diesel fuel price decreased 5.4 cents from the previous week to \$4.444 per gallon, 89.5 cents below the same week last year.

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.

Table 12. U.S. export balances and cumulative exports (1,000 metric tons)

Grain Exports		Wheat					Corn	Soybeans	Total	
		Hard red winter (HRW)	Soft red winter (SRW)	Hard red spring (HRS)	Soft white wheat (SWW)	Durum				All wheat
Current unshipped (outstanding) export sales	For the week ending 10/05/2023	736	825	1,296	863	169	3,888	11,811	16,013	31,712
	This week year ago	725	520	864	611	90	2,809	10,754	25,512	39,075
	Last 4 wks. as % of same period 2022/23	88	136	154	141	211	133	103	63	79
Current shipped (cumulative) exports sales	2023/24 YTD	1,077	1,528	2,224	1,262	112	6,203	3,484	3,496	13,183
	2022/23 YTD	2,417	1,548	2,357	1,918	78	8,318	2,666	2,676	13,660
	YTD 2023/24 as % of 2022/23	45	99	94	66	144	75	131	131	97
	Total 2022/23	4,872	2,695	5,382	4,414	395	17,759	39,469	52,208	109,435
	Total 2021/22	7,172	2,786	5,254	3,261	196	18,669	59,764	57,189	135,622

Note: The marketing year for wheat is Jun. 1 to May 31 and, for corn and soybeans, Sep. 1 to Aug. 31. YTD = year-to-date; wks. = weeks.

Source: USDA, Foreign Agricultural Service.

Table 13. Top 5 importers of U.S. corn

For the week ending 10/05/2023	Total commitments (1,000 mt)		% change current MY from last MY	Exports 3-year average 2020-22 (1,000 mt)
	YTD MY 2023/24	YTD MY 2022/23		
Mexico	8,058	5,411	49	15,227
China	929	3,393	-73	12,616
Japan	1,615	1,173	38	10,273
Columbia	978	283	246	4,398
Korea	76	8	913	2,563
Top 5 importers	11,656	10,267	14	45,077
Total U.S. corn export sales	15,295	13,420	14	56,665
% of YTD current month's export projection	30%	32%		
Change from prior week	911	197		
Top 5 importers' share of U.S. corn export sales	76%	77%		80%
USDA forecast October 2023	51,527	42,265	22	
Corn use for ethanol USDA forecast, October 2023	134,620	131,496	2	

Note: The top 5 importers are based on USDA, Foreign Agricultural Service (FAS) marketing year ranking reports for marketing year (MY) 2022/23 (Sep. 1 – Aug. 31). "Total commitments" = cumulative exports (shipped) + outstanding sales (unshipped), from 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. In rightmost column, "Exports" = carryover plus accumulated exports (as defined in FAS marketing year ranking reports). mt = metric ton; yr. = year; avg. = average; YTD = year to date.

Source: USDA, Foreign Agricultural Service.

Table 14. Top 5 importers of U.S. soybeans

For the week ending 10/05/2023	Total commitments (1,000 mt)		% change current MY from last MY	Exports 3-year average 2020-22 (1,000 mt)
	YTD MY 2023/24	YTD MY 2022/23		
China	8,931	14,654	-39	32,321
Mexico	2,019	2,096	-4	4,912
Egypt	130	657	-80	2,670
Japan	674	655	3	2,259
Indonesia	361	261	38	1,973
Top 5 importers	12,115	18,323	-34	44,133
Total U.S. soybean export sales	19,509	28,189	-31	56,656
% of YTD current month's export projection	41%	52%		
Change from prior week	1,057	724		
Top 5 importers' share of U.S. soybean export sales	62%	65%		78%
USDA forecast, October 2023	47,820	54,278	-12	

Note: The top 5 importers are based on USDA, Foreign Agricultural Service (FAS) marketing year ranking reports for marketing year (MY) 2022/23 (Sep. 1 – Aug. 31). "Total commitments" = cumulative exports (shipped) + outstanding sales (unshipped), from 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. In rightmost column, "Exports" = carryover plus accumulated export (as defined in FAS marketing year ranking reports). mt = metric ton; yr. = year; avg. = average; YTD = year to date.

Source: USDA, Foreign Agricultural Service.

Table 15. Top 10 importers of all U.S. wheat

For the week ending 10/05/2023	Total commitments (1,000 mt)		% change current MY from last MY	Exports 3-year average 2020-22 (1,000 mt)
	YTD MY 2023/24	YTD MY 2022/23		
Mexico	1,670	1,927	-13	3,397
Philippines	1,517	1,484	2	2,615
Japan	1,078	1,142	-6	2,281
China	566	616	-8	1,740
Korea	743	619	20	1,426
Nigeria	133	548	-76	1,276
Taiwan	653	416	57	944
Thailand	222	344	-35	643
Columbia	178	387	-54	537
Indonesia	236	236	-0	469
Top 10 importers	6,997	7,720	-9	15,327
Total U.S. wheat export sales	10,091	11,127	-9	20,411
% of YTD current month's export projection	53%	54%		
Change from prior week	652	212		
Top 10 importers' share of U.S. wheat export sales	69%	69%		75%
USDA forecast, October 2023	19,074	20,681	-8	

Note: The top 5 importers are based on USDA, Foreign Agricultural Service (FAS) marketing year ranking reports for marketing year (MY) 2022/23 (Sep. 1 – Aug. 31). "Total commitments" = cumulative exports (shipped) + outstanding sales (unshipped), from 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. In rightmost column, "Exports" = carryover plus accumulated export (as defined in FAS marketing year ranking reports). mt = metric ton; yr. = year; avg. = average; YTD = year to date.

Source: USDA, Foreign Agricultural Service.

Table 16. Grain inspections for export by U.S. port region (1,000 metric tons)

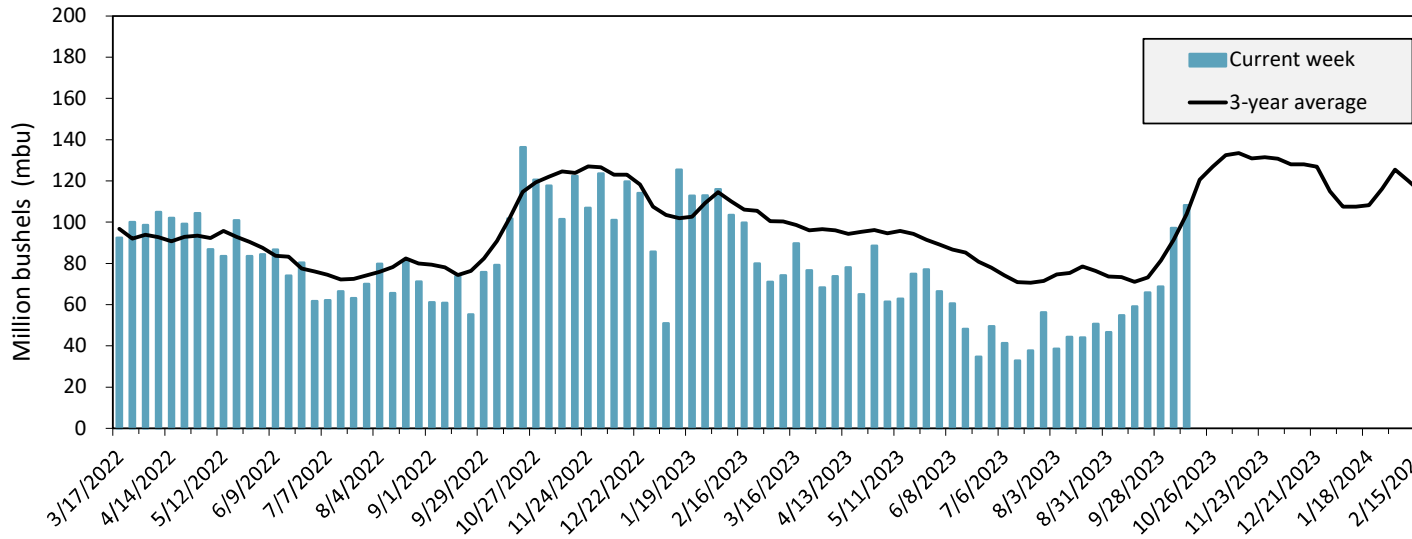
Port regions	Commodity	For the week ending 10/12/2023	Previous week*	Current week as % of previous	2023 YTD*	2022 YTD*	2023 YTD as % of 2022 YTD	Last 4-weeks as % of:		2022 total*
								Last year	Prior 3-yr. avg.	
Pacific Northwest	Wheat	201	164	123	8,323	8,568	97	73	88	9,836
	Corn	0	1	n/a	3,925	8,953	44	880	1	9,615
	Soybeans	701	639	110	4,944	6,500	76	110	64	14,178
	Total	903	804	112	17,191	24,021	72	91	69	33,629
Mississippi Gulf	Wheat	53	112	48	3,059	3,884	79	110	115	4,053
	Corn	279	567	49	19,143	27,292	70	117	80	30,781
	Soybeans	1,070	659	162	18,719	18,239	103	138	97	31,283
	Total	1,402	1,338	105	40,921	49,414	83	128	91	66,116
Texas Gulf	Wheat	50	35	143	1,536	2,916	53	39	36	3,421
	Corn	12	11	109	255	564	45	313	67	648
	Soybeans	55	0	n/a	110	58	190	103	30	685
	Total	117	46	256	1,902	3,538	54	51	36	4,754
Interior	Wheat	35	11	312	1,969	2,389	82	73	84	2,912
	Corn	134	201	67	7,444	7,062	105	133	116	8,961
	Soybeans	229	178	129	4,556	5,262	87	112	95	7,109
	Total	398	389	102	13,969	14,713	95	119	105	18,982
Great Lakes	Wheat	33	0	n/a	319	268	119	379	204	395
	Corn	0	0	n/a	23	148	15	0	0	158
	Soybeans	0	0	n/a	63	339	19	0	0	760
	Total	33	0	n/a	405	755	54	73	64	1,312
Atlantic	Wheat	2	1	179	103	169	61	22	57	169
	Corn	1	11	14	103	276	37	78	105	309
	Soybeans	62	2	n/a	1,319	1,678	79	89	45	2,867
	Total	65	13	484	1,525	2,122	72	69	53	3,345
U.S. total from ports*	Wheat	373	322	116	15,308	18,193	84	74	82	20,786
	Corn	427	790	54	30,893	44,295	70	122	85	50,471
	Soybeans	2,117	1,477	143	29,712	32,076	93	121	80	56,882
	Total	2,917	2,590	113	75,913	94,564	80	109	82	128,139

*Note: Data include revisions from prior weeks; some regional totals may not add exactly because of rounding. YTD = year-to-date; n/a = not applicable or no change.

Source: USDA, Federal Grain Inspection Service.

The United States exports approximately one-quarter of the grain it produces. On average, this includes nearly 45 percent of U.S.-grown wheat, 50 percent of U.S.-grown soybeans, and 20 percent of the U.S.-grown corn. Approximately 55 percent of the U.S. export grain shipments departed through the U.S. Gulf region in 2019.

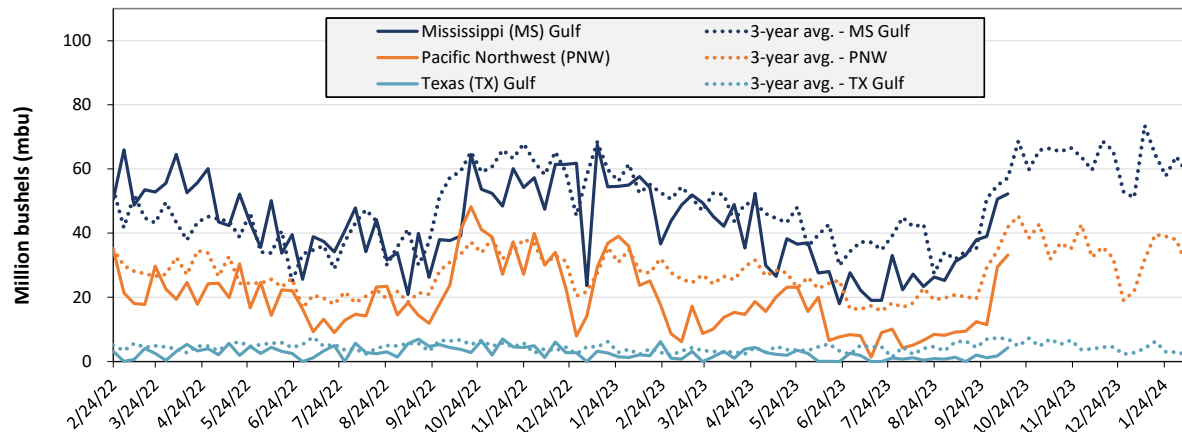
Figure 14. U.S. grain inspected for export (wheat, corn, and soybeans)



For the week ending October 12: 108.3 mbu of grain inspected, up 11 percent from the previous week, up 6 percent from the same week last year, and up 4 percent from the 3-year average.

Note: 3-year average consists of 4-week running average.
Source: USDA, Federal Grain Inspection Service.

Figure 15. U.S. grain inspections for U.S. Gulf and PNW (wheat, corn, and soybeans)



Week ending 10/12/23 inspections (mbu):	
MS Gulf:	52.3
PNW:	33.2
TX Gulf:	4.3

Percent change from	MS Gulf	TX Gulf	U.S. Gulf	PNW
Last week	up 3	up 154	up 8	up 12
Last year (same week)	up 34	up 15	up 32	down 19
3-year average (4-week moving average)	up 6	down 33	up 1	up 6

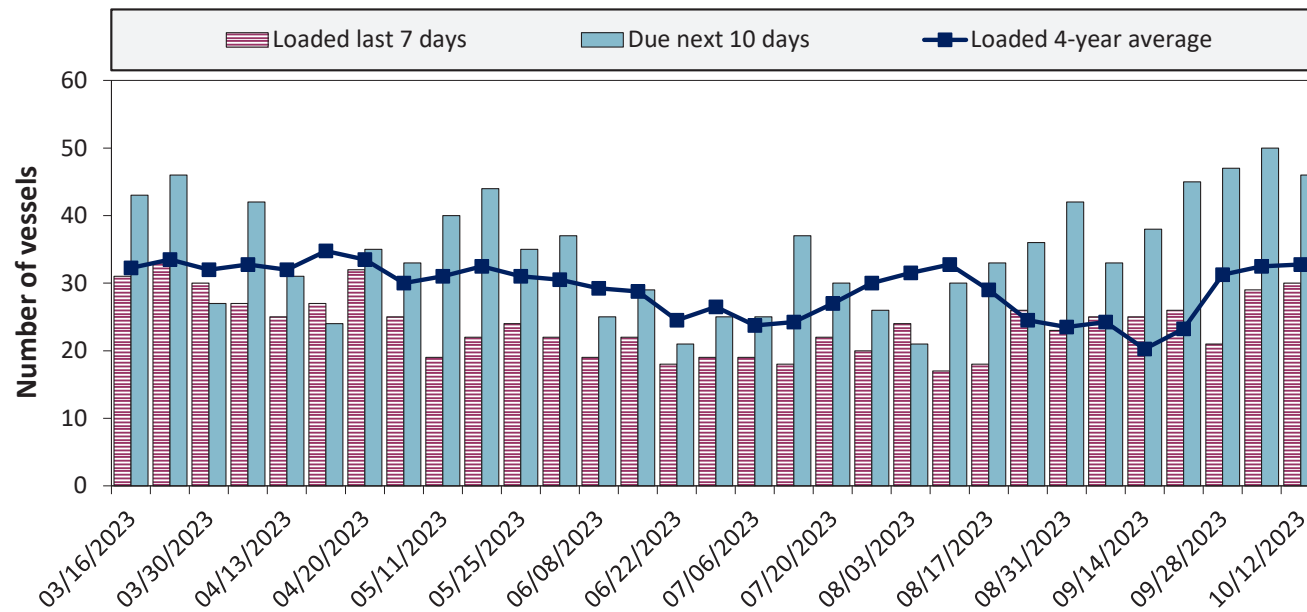
Source: USDA, Federal Grain Inspection Service.

Table 17. Weekly port region grain ocean vessel activity (number of vessels)

Date	Gulf			Pacific Northwest
	In port	Loaded 7-days	Due next 10-days	In port
10/12/2023	27	30	46	19
10/5/2023	30	29	50	19
2022 range	(14...61)	(18...39)	(28...62)	(5...23)
2022 average	30	28	44	13

Note: The data are voluntarily submitted and may not be complete.
 Source: USDA, Agricultural Marketing Service.

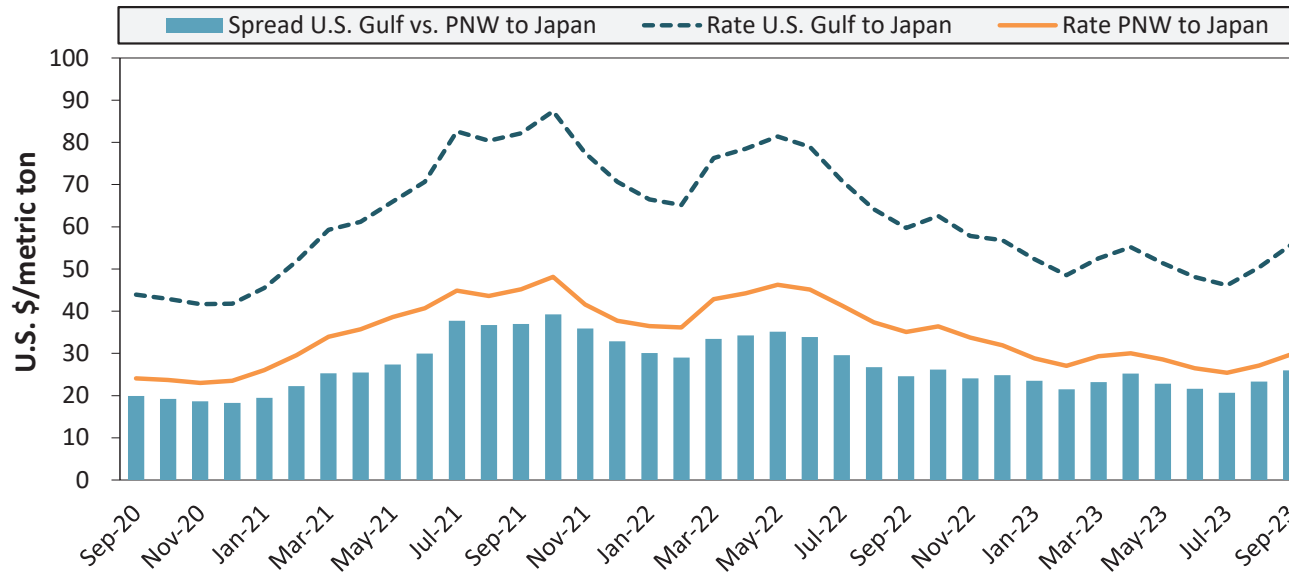
Figure 16. U.S . Gulf vessel loading activity



Week ending 10/12/23, number of vessels	Loaded	Due
Change from last year	36.4%	-22.0%
Change from 4-year average	-8.4%	-19.3%

Note: U.S. Gulf includes Mississippi, Texas, and east Gulf
 Source: USDA, Agricultural Marketing Service.

Figure 17. U.S. Grain vessel rates, U.S. to Japan



Ocean rates	U.S. Gulf	PNW	Spread
September 2023	\$55.75	\$29.75	\$26.00
Change from September 2022	-6.6%	-15.2%	5.7%
Change from 4-year average	-6.2%	-11.1%	0.0%

Note: PNW = Pacific Northwest
Source: O'Neil Commodity Consulting.

Table 18. Ocean freight rates for selected shipments, week ending 10/14/2023

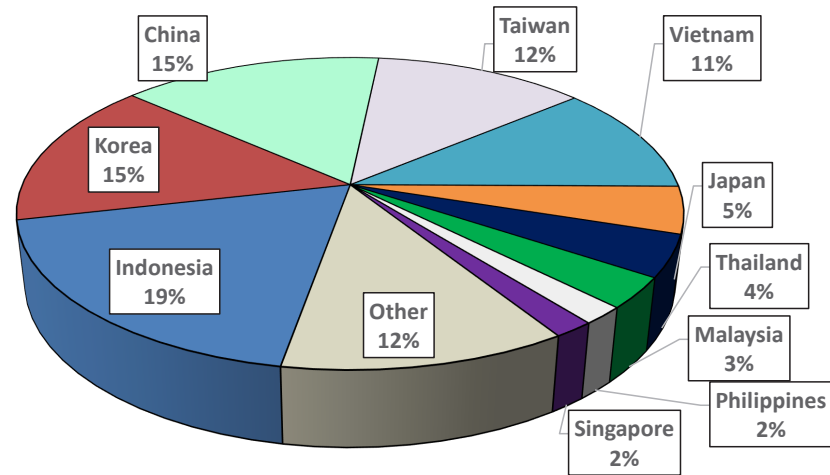
Export region	Import region	Grain types	Loading date	Volume loads (metric tons)	Freight rate (US\$/metric ton)
U.S. Gulf	Japan	Heavy grain	May 2, 2023	50,000	56.70
U.S. Gulf	China	Heavy grain	Oct 1/Nov 1, 2023	66,000	54.50
U.S. Gulf	China	Heavy grain	Oct 1/10, 2023	68,000	55.00
U.S. Gulf	Mexico	Soybean 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	S. Korea	Heavy grain	Nov 25/Dec 5, 2023	58,000	65.35
U.S. Gulf	S. Korea	Heavy grain	Oct 25/Nov 5, 2023	57,000	64.85
U.S. Gulf	S. Korea	Heavy grain	Nov 1/15	58,000	64.50
U.S. Gulf	S. Korea	Heavy grain	Oct 1/20, 2023	57,000	58.30
PNW	Yemen	Wheat	Nov 5/15, 2023	30,000	74.43
PNW	Yemen	Wheat	Nov 5/15, 2023	24,740	91.89
Brazil	S. Korea	Heavy grain	Jun 15/Jul 15, 2023	68,000	45.15
Brazil	China	Heavy grain	Jul 1/31, 2023	63,000	41.50
River Plate	China	Soybeans	Oct 15/30, 2023	65,000	46.75

Note: 50 percent of food aid from the United States is required to be shipped on U.S.-flag vessels. Rates shown are per metric ton (1 metric ton = 2,204.62 pounds), 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.

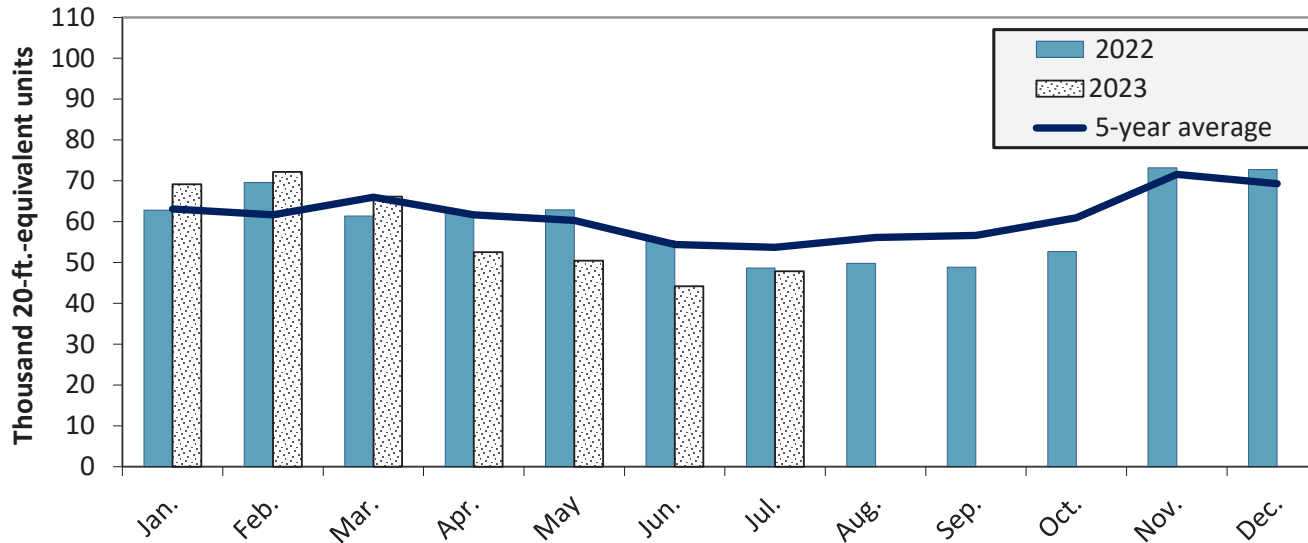
Figure 18. Top 10 destination markets for U.S. containerized grain exports, Jan-Jul 2023



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: Source: USDA, Agricultural Marketing Service analysis of PIERS data, S&P Global.

Figure 19. Monthly shipments of U.S. containerized grain exports



Containerized grain shipments were down 1.5 percent from last year and down 10.9 percent from the 5-year average.

Note: ft. = foot. 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: Source: USDA, Agricultural Marketing Service analysis of PIERS data, S&P Global.

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