



Grain Transportation Report

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Wheat Imports Reach 6-Year High.

According to USDA's Economic Research Service (ERS) November [Wheat Outlook](#) report, wheat imports for marketing year (MY) 2023/24 are forecast at 145 million bushels (mbu), the largest volume since MY 2017/18.

The United States commonly imports hard red spring and durum wheat varieties from Canada. However, recent drought in the Southern Plains has prompted imports of hard red winter (HRW) wheat. ERS forecasts U.S. imports of HRW wheat—primarily from the European Union (EU)—will reach a record 25 mbu. In May, U.S. HRW wheat was over \$100 per metric ton (mt), more expensive than comparable EU wheat. A surplus of EU wheat, due to the [Russia-Ukraine War](#), lowered its price. The U.S.-EU price spread has since narrowed to around \$50 per mt ([Wheat Outlook, page 11](#)).

Some East Coast millers have found importing EU wheat to be more economical than shipping Midwestern wheat by rail. Europe-to-U.S. wheat shipments cost about \$30 per metric ton, versus more than \$50 per mt for several Chicago-to-East Coast routes (e.g., Chicago to Albany, [GTR table 7](#)).

Update to GTR Grain Carload Data.

Starting this week, the source for data on weekly grain carloads in [GTR table 3](#) and [GTR fig. 3](#) will change from the Association of American Railroads (AAR) to the Surface Transportation Board (STB). STB requires all Class I railroads to submit weekly originated and received carloadings for grain (and 22 other commodities).

Use of STB's data will allow GTR readers to see total grain carloads in the United States, isolated from Canadian grain carloads. Two Class I railroads—Canadian National Railway (CN) and Canadian Pacific Kansas City (CPKC)—operate in both the United States and Canada. Unlike the AAR data—which include carloads over the entire CN and CPKC networks (i.e., both the United States and Canada)—the STB carload data include only those carloads originated or received in the United States.

In addition to the GTR, the weekly STB grain carloads data are available on [AgTransport](#).

ATRI Releases 2023 Top Industry Issues Report.

The American Transportation Research Institute (ATRI) recently [released](#) its 19th annual [Top Industry Issues](#) report, which identifies the trucking industry's most pressing concerns. Conducted in September, the survey collected data from more than 4,000 trucking industry stakeholders: motor carriers (48 percent); truck drivers (29 percent—down from 47 percent in 2022); and other industry stakeholders (23 percent), which included industry suppliers, driver trainers, and law enforcement.

This year, for *all* respondents, the top five concerns were as follows (in descending order of importance): the U.S. economy, lack of available truck parking, fuel prices, driver shortage, and driver compensation. For driver respondents, the top five concerns were driver compensation, truck parking, fuel prices, speed limiters, and detention/delay at customer facilities.

For motor carriers, the top five concerns were the economy, driver shortage, lawsuit abuse reform, driver retention, and fuel prices.

Ports of Los Angeles and Long Beach To Fund Zero-Emission Drayage Trucks.

On November 9, the Ports of Los Angeles and Long Beach [announced](#) they will allocate \$60 million for vouchers toward purchasing zero-emission Class 8 drayage trucks for use at the ports.

The funding announcement comes as the [California Air Resources Board](#) (CARB) prepares to implement new requirements for drayage vehicles. Beginning January 1, 2024, all new drayage trucks in California must be zero-emission vehicles. CARB's goal is to have the more than 30,000 drayage trucks that service California's seaports and railyards annually become zero-emission vehicles by 2035 ([Grain Transportation Report, May 4, 2023, first highlight](#)).

For the first 8 months of this year, California ports handled nearly half (46 percent) of all [containerized grain exports](#).

Export Sales

For the week ending November 9, **unshipped balances** of wheat, corn, and soybeans for marketing year (MY) 2023/24 totaled 33.41 million metric tons (mmt), up 10 percent from last week and down 7 percent from the same time last year.

Net **corn export sales** for MY 2023/24 were 1.808 mmt, up 78 percent from last week. Net **soybean export sales** were 3.918 mmt, up 263 percent from last week. Net weekly **wheat export sales** were 0.176 mmt, down 50 percent from last week.

Rail

U.S. Class I railroads originated 27,318 **grain carloads** during the week ending November 11. This was a 6-percent increase from the previous week, 1 percent fewer than last year, and 7 percent fewer than the 3-year average.

Average December **shuttle secondary railcar bids/offers** (per car) were \$25 above tariff for the week ending November 16. This was \$8 less than last week and \$202 lower than this week last year. Average non-shuttle secondary railcar bids/offers per car were \$163 above tariff. This was \$13 more than last week and \$438 lower than this week last year.

Barge

For the week ending November 18, **barged grain movements** totaled 742,814 tons. This was 3 percent more than the previous week and 12 percent less than the same period last year.

For the week ending November 18, 473 grain barges **moved down river**—42 fewer than last week. There were 712 grain barges **unloaded** in the New Orleans region, 2 percent fewer than last week.

Ocean

For the week ending November 16, 22 **oceangoing grain vessels** were loaded in the Gulf—12 percent less than the same period last year. Within the next 10 days (starting November 17), 50 vessels were expected to be loaded—4 percent more than the same period last year.

As of November 16, the rate for shipping a metric ton (mt) of grain from the U.S. Gulf to Japan was \$57.00. This was 2 percent more than the previous week. The rate from the Pacific Northwest to Japan was \$29.50 per mt, 2 percent more than the previous week.

Fuel

For the week ending November 20, the U.S. average **diesel price** decreased 8.5 cents from the previous week to \$4.209 per gallon, 102.4 cents below the same week last year.



Unprecedented Drought at the Panama Canal Alters Path of U.S. Grain Exports

The Panama Canal is a major thoroughfare for U.S. grain exports—shortening the voyage from export terminals at the U.S. Gulf Coast to major importers in East Asia ([Grain Transportation Report \(GTR\), September 8, 2022](#)). In 2022, 41 percent of total corn exports and 51 percent of total soybean exports from the U.S. Gulf were destined for countries in East Asia (i.e., China, Japan, Korea, and Taiwan).

Although the Panama Canal is usually the preferred route for grain exports, the surrounding region has experienced an ongoing drought since early 2023, which has resulted in draft restrictions and limited daily vessel transits. This article examines grain shipments carried by dry bulk vessels, though the Canal’s restrictions can impact containerized grain exports as well. The article discusses the drought’s impact on Canal operations; the Panama Canal Authority’s (PCA) mitigation strategies; and the effects of a severely restricted Panama Canal on this year’s U.S. grain exports.

2023 Drought at Gatun Lake

The Panama Canal is made up of a system of 12 locks that use water from several freshwater lakes—the largest of which is Gatun Lake. Each vessel transit is estimated to use about 50 million gallons of water. In a typical year,

Panama has a short “dry season” (January to May) and a long “rainy season” (May to January), which allows the freshwater lakes to recharge.

In 2023, however, Panama has had an **unusually dry** rainy season, which has sunk water levels at Gatun Lake to record lows (fig. 1). As of November 20, water levels for Gatun Lake were 81.34 feet—5 percent below the 2010-22 November average.

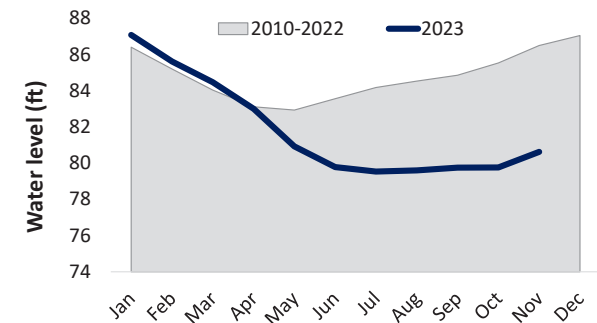
PCA [has estimated](#) that Gatun Lake currently receives an inflow of about 7 cubic hectometers each day. Outflows (for Canal operations, human/industry consumption, etc.) amount to about 10 cubic hectometers each day—resulting in a daily deficit of 3 cubic hectometers (approximately, 800 million gallons).

PCA Actions in Response to Drought

PCA has two main strategies to manage the drought conditions—reductions to vessel draft levels and restrictions to daily vessel transits.

Reductions to Draft Levels. The draft level at which a vessel can safely transit the Canal has fallen from 50 feet to 44 feet for the larger Neopanamax Locks, but remains at 39.5 feet for the Panamax Locks. The draft of a vessel is measured as the underwater portion of the

Figure 1. Monthly average Gatun Lake water levels, 2010-23



Source: [Panama Canal Authority](#).

vessel, from the waterline to the bottom most portion of the ship. To reduce the draft, the vessel operator loads less cargo onto the ship.

Restrictions to Daily Vessel Limits. PCA uses an appointment system to meter traffic through the Canal. In response to the drought conditions, PCA has reduced traffic from the normal 36 appointment slots per day to only 24 slots per day, through November 30. In a tiered process, further transit restrictions are scheduled for next month and January 2024, with transits falling to 18 per day by February 1, 2024 ([Advisory To Shipping No. A-48-2023](#)). PCA is restricting the number of transits to postpone the need for additional draft restrictions.

As far as 13 weeks in advance, vessel operators can make an appointment to transit the Canal. Vessels such as container ships that operate on fixed routes with predetermined schedules often book appointments a month or more in advance. However, bulk carriers, both liquid and dry bulk, typically operate on an as needed basis and, therefore, have a shorter window to reserve a transit slot. Without an appointment, vessels enter a queue for the single-digit number of transit slots the Canal allows without an appointment each day. This process has resulted in some vessels waiting more than 2 weeks to transit; however, a recent estimate by HJ O’Neil Commodity Consulting reports grain vessels are typically waiting in queue 6-7 days.

To avoid congestion through the Panama Canal, many bulk-vessel operators have chosen to take longer routes through the Suez Canal or around the southern tip of Africa. However, all options carry difficult tradeoffs: routing through Panama requires extended queue-waits and higher Canal transit fees. Alternatively, routing through the Suez Canal places vessels near [conflicts in the Middle East](#).

Both alternatives to Panama—through the Suez Canal or around the Cape of Good Hope—increase transit times by as much as 14 days. For a given number of vessels, more time and distance spent on each trip means those vessels cannot complete as many trips as they normally would. As a result, to meet demand,

additional vessels are required on the water, thereby reducing the overall supply of bulk vessels for the industry.

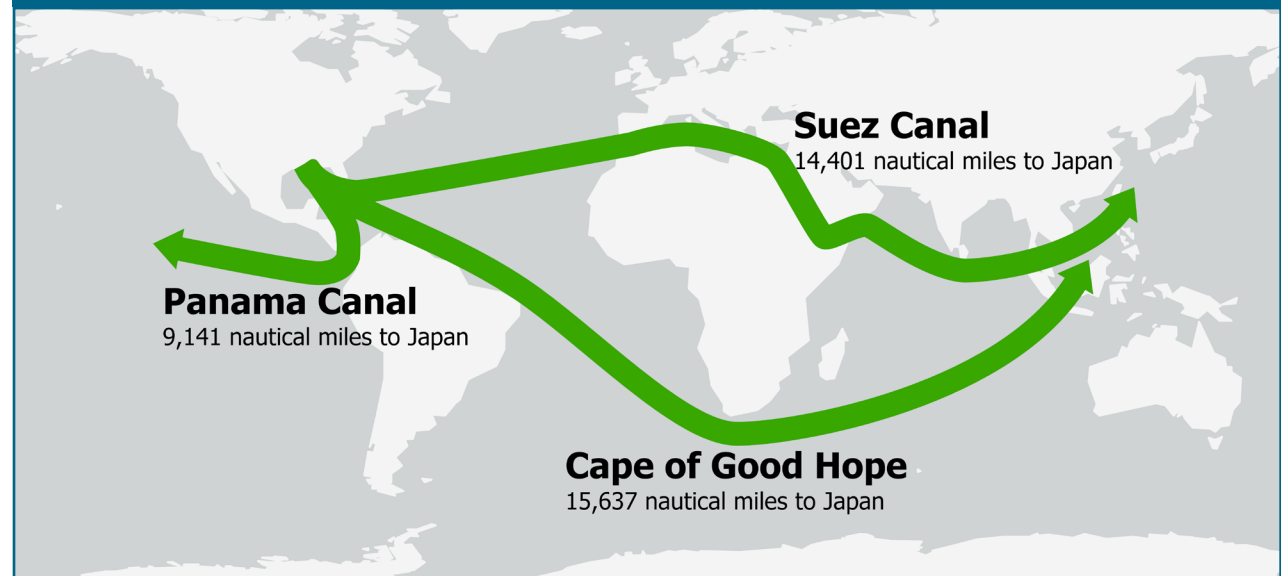
With demand for transit slots at record levels, PCA has offered an auction for the limited number of slots available. The strength of the auction bids reflects the pressure some carriers are under to move shipments through the Canal. Bids grew to more than \$1 million per slot in the past several months. As the drought continues and demand increases, pressure on the auction market increases as well. Reportedly, a slot recently auctioned for nearly \$4 million.¹

Grain Export Routes

The Panama Canal is the most direct route for U.S. grain exports from the U.S. Gulf to East Asia (fig. 2). Traveling at an average of 12 knots (and assuming no delays), a voyage between New Orleans and Tokyo, Japan, via the Panama Canal takes about 32 days. At the same speed, the same voyage takes 50 days via the Suez Canal; and 54 days via the Cape of Good Hope.²

Using publicly available data, researchers can track trends in routes for grain shipments over time. One source of data is from USDA’s Federal Grain Inspection Service (FGIS). FGIS inspections data ([Available on AgTransport](#))

Figure 2. : U.S. Gulf export routes to Japan



Source: [Sea-distances.org](#) and USDA-Agricultural Marketing Service.

1 [\\$4 Million Lets Shipper Cut to Front of Line at Panama Canal | Transport Topics \(ttnews.com\)](#)

2 Vessel distances are calculated from [sea-distances.org](#).

dates back to 1983 and is released weekly. The dataset includes information such as type or classification of grain, port of origin, vessel name, destination, and volume. FGIS inspections data are not official trade data, but are a close proxy for official trade figures collected by the U.S. Census Bureau ([GTR, October 27, 2022](#)).

FGIS data reveal *when* and *where* shipments originated from, as well as the intended destination (e.g., New Orleans or Los Angeles to Tokyo, Japan). Geospatial data on the specific route a vessel takes can be determined using automatic identification system (AIS) data. AIS is a global shipping tracking system intended to alert vessels to traffic in their area, helping to avoid collisions. Numerous websites publish AIS data for public inspection—such data can be used to determine a vessels’ position, speed, course, etc. Together, FGIS and AIS data make it possible to determine the shares of U.S.-originated grain exports by route.

Table 1 displays the routes for grain exports originating in the U.S. Gulf and destined for East Asia (i.e., China, Japan, Korea, and Taiwan), and compares the final 2 weeks in October in 2022 and 2023.

Gulf Exports in 2022. In the last 2 weeks of October 2022 (October 16-29), 41 vessels destined for East Asia were inspected at a U.S. Gulf port. These 41 vessels carried 2.56 million metric tons (mmt) of grain—82 percent soybeans and 18 percent corn.

Table 1. U.S. Gulf exports to East Asia, by route

	2022 (October 16-29)		2023 (October 15-28)	
	Panama Canal	Suez Canal	Panama Canal	Suez Canal
Vessels	34	7	5	33
	83%	17%	13%	87%
Total Grain (metric tons)	2,058,609	502,041	209,727	2,082,700
	80%	20%	9%	91%

Source: USDA-Federal Grain Inspection Service and S&P Global, Market Intelligence Network.

Of the 41 total vessels, 34 transited the Panama Canal en route to East Asia, and 7 vessels transited the Suez Canal. Of the 7 vessels that transited the Suez Canal, 5 were destined for a port in South China.³ On a tonnage basis, 2.06 mmt of grain (80 percent) transited the Panama Canal, and 0.50 mmt (20 percent) transited the Suez Canal.

Gulf Exports in 2023. In the last 2 weeks of October 2023 (October 15-28), 38 vessels destined for East Asia were inspected at a U.S. Gulf port. These 38 vessels are currently carrying 2.29 mmt of grain—93 percent soybeans, 4 percent corn, and 3 percent sorghum.

Of the 38 total vessels, 5 transited the Panama Canal, and 33 transited (or will transit) the Suez Canal. On a tonnage basis, 2.08 mmt of grain (91 percent) transited (or will transit) the Suez Canal, and 0.21 mmt (9 percent) transited the

Panama Canal. During this period, only 91,206 metric tons of corn was inspected for export to East Asia.

Freight Rates Below Average

Despite the added ton-miles from rerouting through the Suez Canal, freight rates for shipping grain from the U.S. Gulf to Japan have been below the 4-year average ([GTR fig. 17](#)). One possible reason is that U.S. grain inspections at the Mississippi have been weak, compared to the 3-year average ([GTR fig. 15](#)), dampening the demand for freight out of the U.S. Gulf. Another reason for the relatively low freight rates is the increase of total global dry bulk capacity in recent years ([GTR, October 26, 2023](#)). Still, freight rates could rise in coming weeks if dry bulk demand increases.

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³ The Suez Canal is more competitive for the route from the U.S. Gulf to South China than for some other routes (such as U.S. Gulf to Tokyo, Japan). Although (compared to the Suez Canal) the Panama Canal saves 5,260 nautical miles for U.S. Gulf to Tokyo, Japan, it only saves 2,320 nautical miles for U.S. Gulf to South China.

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.

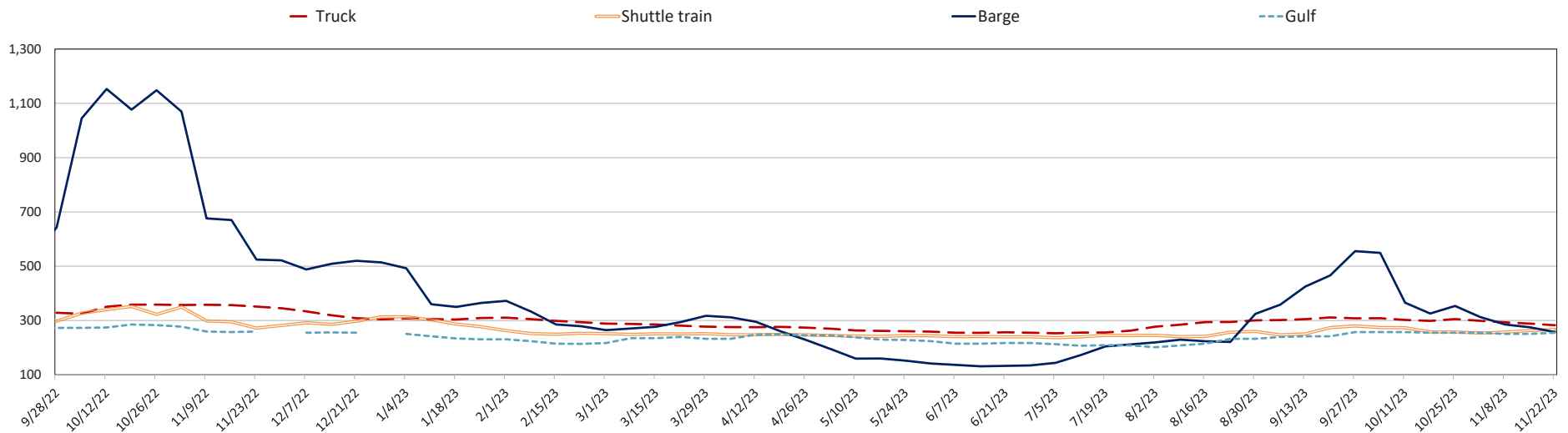
Table 1. Grain transport cost indicators

For the week ending:	Truck	Rail		Barge	Ocean	
		Non-shuttle	Shuttle		Gulf	Pacific
11/22/23	282	342	267	257	255	209
11/15/23	288	344	263	275	250	206
11/23/22	351	368	272	524	259	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.

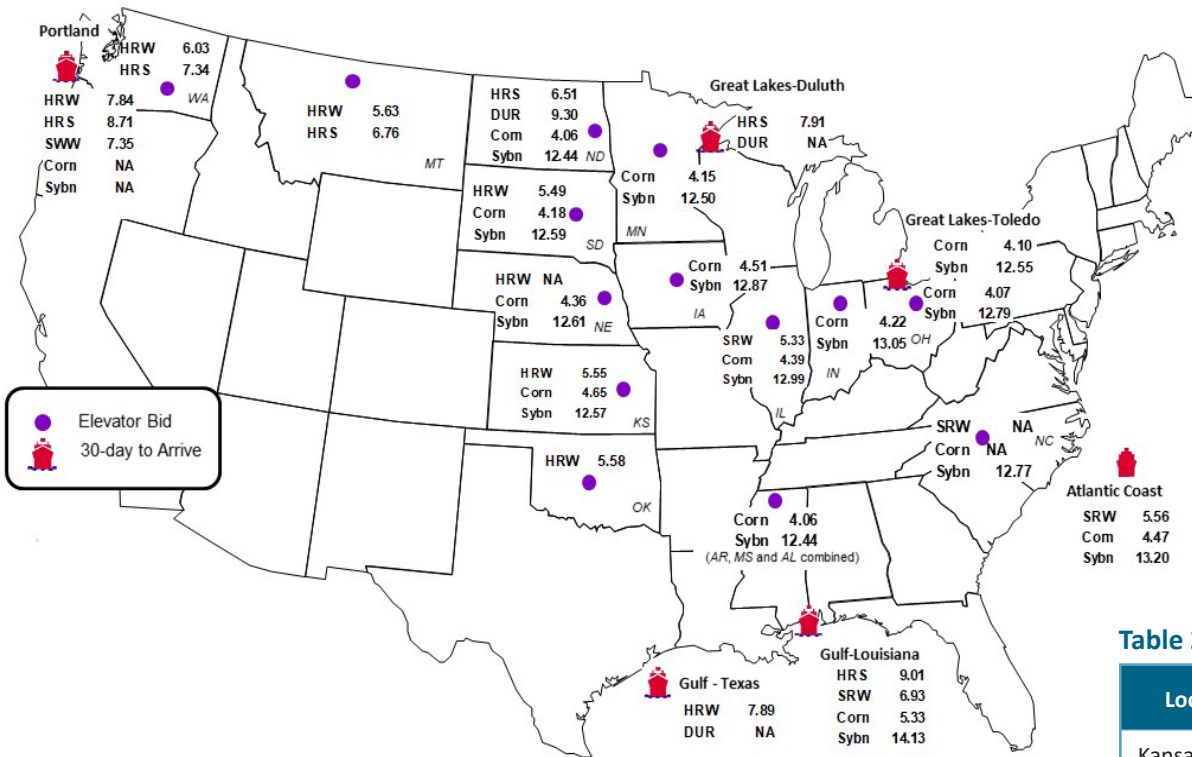
Figure 1. Grain transportation cost indicators as of week ending 11/22/23



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	11/17/2023	11/10/2023
Corn	IL-Gulf	-0.94	-0.95
Corn	NE-Gulf	-0.97	-0.96
Soybean	IA-Gulf	-1.26	-1.33
HRW	KS-Gulf	-2.34	-2.12
HRS	ND-Portland	-2.20	-1.95

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	11/17/2023	Week ago 11/10/2023	Year ago 11/18/2022
Kansas City	Wheat	Dec	6.224	6.362	9.192
Minneapolis	Wheat	Dec	7.154	7.304	9.562
Chicago	Wheat	Dec	5.73	5.692	8.122
Chicago	Corn	Dec	4.852	4.626	6.684
Chicago	Soybean	Jan	13.512	13.580	14.274

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.

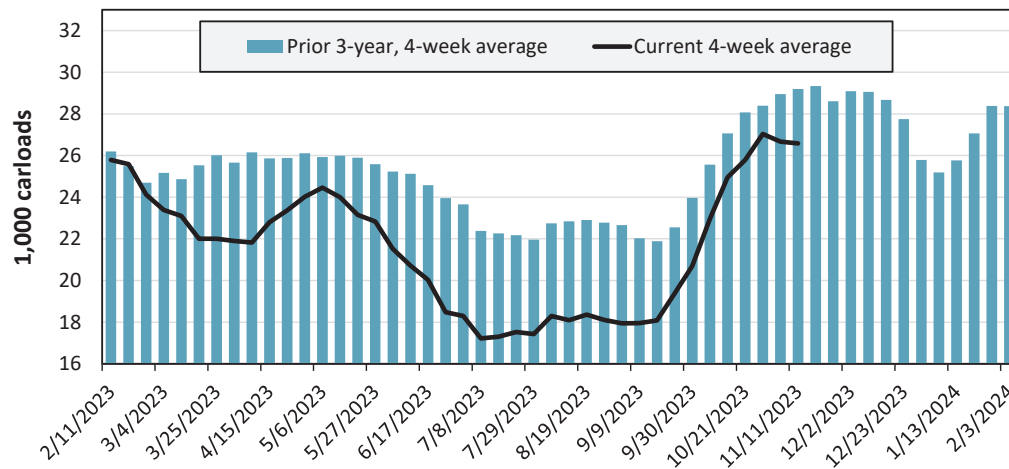
Table 3. Class I rail carrier grain car bulletin (grain carloads originated)

For the week ending: 11/11/2023	East		West		Central U.S.		U.S. total
	CSXT	NS	BNSF	UP	CPKC	CN	
This week	2,696	2,256	12,149	5,759	3,105	1,353	27,318
This week last year	2,066	3,148	11,285	5,819	3,064	2,120	27,502
2023 YTD	79,050	109,979	409,251	236,007	109,329	57,371	1,000,987
2022 YTD	78,996	109,550	495,516	259,591	118,901	70,510	1,133,064
2023 YTD as % of 2022 YTD	100	100	83	91	92	81	88
Last 4 weeks as % of 2022	106	73	95	94	107	87	94
Last 4 weeks as % of 3-yr. avg.	108	81	88	88	105	96	91
Total 2022	93,392	129,293	571,376	297,775	140,039	83,680	1,315,555

Note: The last 4-week percentages compare the last 4 weeks of this year to the closest 4 weeks of last year, and to the average across the prior 3 years. NS = Norfolk Southern; UP = Union Pacific; CN = Canadian National; CPKC = Canadian Pacific Kansas City; YTD = year-to-date; avg. = average; yr. = year. CPKC and CN report carloads for their U.S.-operations only, so the U.S. total reflects originated carloads for all six Class I railroads.

Source: Surface Transportation Board.

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



For the 4 weeks ending November 11, grain carloads were unchanged from the previous week, down 6 percent from last year, and down 9 percent from the 3-year average.

Source: Surface Transportation Board.

Table 4. Railcar auction offerings (dollars per car)

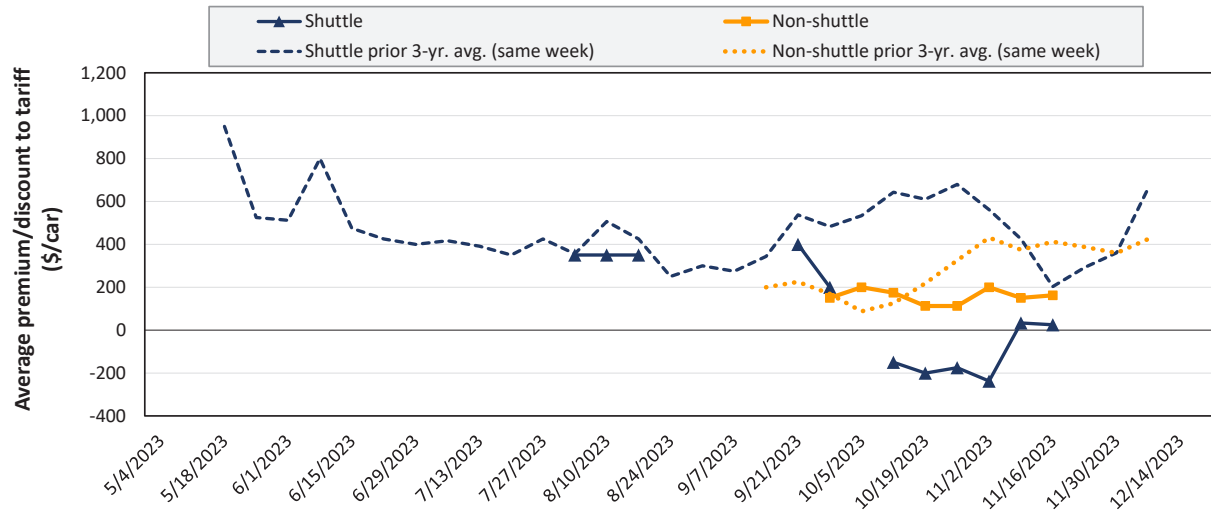
For the week ending: 11/16/2023		Delivery period							
		Dec-23	Dec-22	Jan-24	Jan-23	Feb-24	Feb-23	Mar-24	Mar-23
BNSF	COT grain units	no offer	no bids	no offer	0	no offer	0	no offer	0
	COT grain single-car	n/a	no bids	158	834	154	385	134	326
UP	GCAS/vouchers	n/a	n/a	10	n/a	10	n/a	10	n/a

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 December 2023



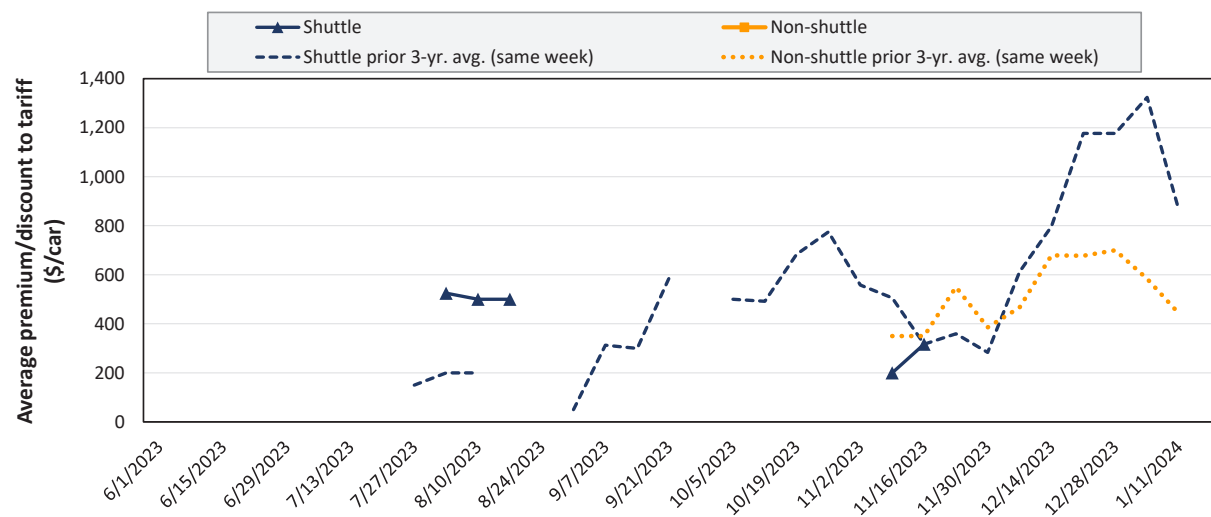
Average non-shuttle bids/offers rose \$13 this week, and are \$38 below the peak.

Average shuttle bids/offers fell \$8 this week and are \$375 below the peak.

	11/16/2023	BNSF	UP
Non-Shuttle		\$275	\$50
Shuttle		\$267	-\$217

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 January 2024



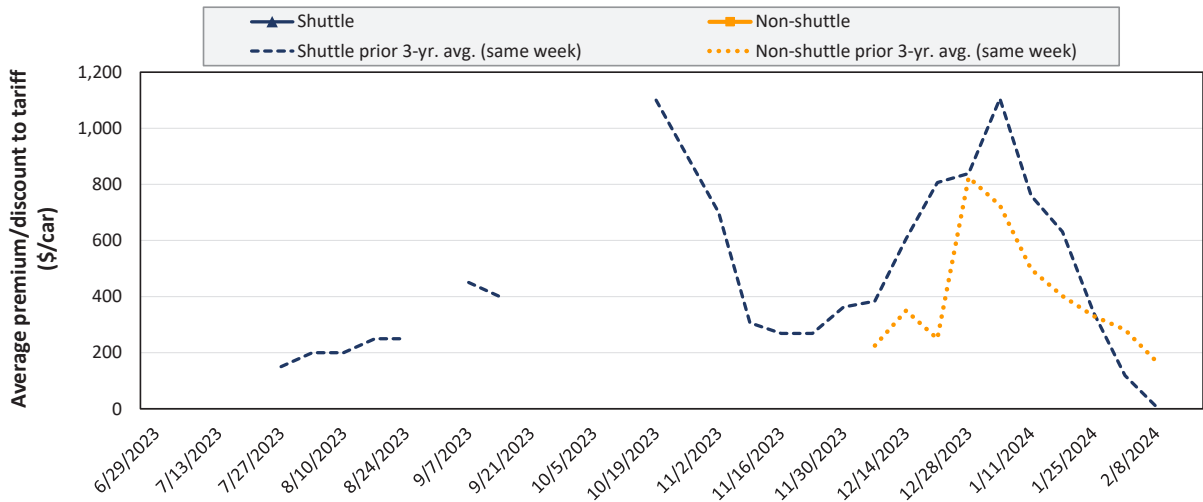
There were no non-shuttle bids/offers this week.

Average shuttle bids/offers rose \$117 this week and are \$208 below the peak.

	11/16/2023	BNSF	UP
Non-Shuttle		n/a	n/a
Shuttle		\$317	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 February 2024



There were no non-shuttle bids/offers this week.

There were no shuttle bids/offers this week.

11/16/2023	BNSF	UP
Non-Shuttle	n/a	n/a
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.

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

For the week ending: 11/16/2023		Delivery period					
		Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24
Non-shuttle	BNSF	275	n/a	n/a	n/a	n/a	n/a
	Change from last week	75	n/a	n/a	n/a	n/a	n/a
	Change from same week 2022	-75	n/a	n/a	n/a	n/a	n/a
	UP	50	n/a	n/a	n/a	n/a	n/a
	Change from last week	-50	n/a	n/a	n/a	n/a	n/a
	Change from same week 2022	-800	n/a	n/a	n/a	n/a	n/a
Shuttle	BNSF	267	317	n/a	100	n/a	n/a
	Change from last week	-100	117	n/a	n/a	n/a	n/a
	Change from same week 2022	89	-33	n/a	n/a	n/a	n/a
	UP	-217	n/a	n/a	n/a	n/a	n/a
	Change from last week	83	n/a	n/a	n/a	n/a	n/a
	Change from same week 2022	-492	n/a	n/a	n/a	n/a	n/a
	CPKC	300	n/a	n/a	n/a	n/a	n/a
	Change from last week	n/a	n/a	n/a	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; BNSF = BNSF Railway; UP = Union Pacific Railroad; CPKC = Canadian Pacific Kansas City.
 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

November 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	\$253	\$43.18	\$1.18	4
	Grand Forks, ND	Duluth-Superior, MN	\$4,008	\$98	\$40.78	\$1.11	3
	Wichita, KS	Los Angeles, CA	\$7,340	\$505	\$77.90	\$2.12	-4
	Wichita, KS	New Orleans, LA	\$4,825	\$445	\$52.33	\$1.42	3
	Sioux Falls, SD	Galveston-Houston, TX	\$7,111	\$414	\$74.73	\$2.03	-3
	Colby, KS	Galveston-Houston, TX	\$5,075	\$488	\$55.24	\$1.50	3
	Amarillo, TX	Los Angeles, CA	\$5,121	\$679	\$57.59	\$1.57	-2
Corn	Champaign-Urbana, IL	New Orleans, LA	\$4,000	\$503	\$44.72	\$1.14	-2
	Toledo, OH	Raleigh, NC	\$8,877	\$559	\$93.70	\$2.38	3
	Des Moines, IA	Davenport, IA	\$2,830	\$107	\$29.16	\$0.74	6
	Indianapolis, IN	Atlanta, GA	\$6,866	\$420	\$72.35	\$1.84	3
	Indianapolis, IN	Knoxville, TN	\$5,790	\$272	\$60.20	\$1.53	3
	Des Moines, IA	Little Rock, AR	\$4,425	\$313	\$47.05	\$1.20	3
	Des Moines, IA	Los Angeles, CA	\$6,305	\$912	\$71.66	\$1.82	0
Soybeans	Minneapolis, MN	New Orleans, LA	\$3,356	\$765	\$40.93	\$1.11	-35
	Toledo, OH	Huntsville, AL	\$7,269	\$398	\$76.14	\$2.07	2
	Indianapolis, IN	Raleigh, NC	\$8,169	\$567	\$86.75	\$2.36	3
	Indianapolis, IN	Huntsville, AL	\$5,921	\$269	\$61.47	\$1.67	3
	Champaign-Urbana, IL	New Orleans, LA	\$5,040	\$503	\$55.04	\$1.50	2

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

November 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	\$290	\$48.00	\$1.31	1
	Wichita, KS	Galveston-Houston, TX	\$4,611	\$226	\$48.03	\$1.31	5
	Chicago, IL	Albany, NY	\$7,413	\$528	\$78.86	\$2.15	3
	Grand Forks, ND	Portland, OR	\$6,201	\$502	\$66.56	\$1.81	-0
	Grand Forks, ND	Galveston-Houston, TX	\$5,549	\$522	\$60.29	\$1.64	-0
	Colby, KS	Portland, OR	\$5,923	\$800	\$66.76	\$1.82	-2
Corn	Minneapolis, MN	Portland, OR	\$5,660	\$611	\$62.27	\$1.58	-3
	Sioux Falls, SD	Tacoma, WA	\$5,620	\$559	\$61.36	\$1.56	-3
	Champaign-Urbana, IL	New Orleans, LA	\$4,345	\$503	\$48.14	\$1.22	2
	Lincoln, NE	Galveston-Houston, TX	\$4,560	\$326	\$48.52	\$1.23	2
	Des Moines, IA	Amarillo, TX	\$4,845	\$394	\$52.02	\$1.32	2
	Minneapolis, MN	Tacoma, WA	\$5,660	\$606	\$62.22	\$1.58	-3
	Council Bluffs, IA	Stockton, CA	\$5,780	\$627	\$63.62	\$1.62	-0
Soybeans	Sioux Falls, SD	Tacoma, WA	\$6,335	\$559	\$68.46	\$1.86	-3
	Minneapolis, MN	Portland, OR	\$6,385	\$611	\$69.47	\$1.89	-3
	Fargo, ND	Tacoma, WA	\$6,235	\$497	\$66.86	\$1.82	-3
	Council Bluffs, IA	New Orleans, LA	\$5,270	\$580	\$58.09	\$1.58	1
	Toledo, OH	Huntsville, AL	\$5,509	\$398	\$58.66	\$1.60	3
	Grand Island, NE	Portland, OR	\$5,905	\$819	\$66.77	\$1.82	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.

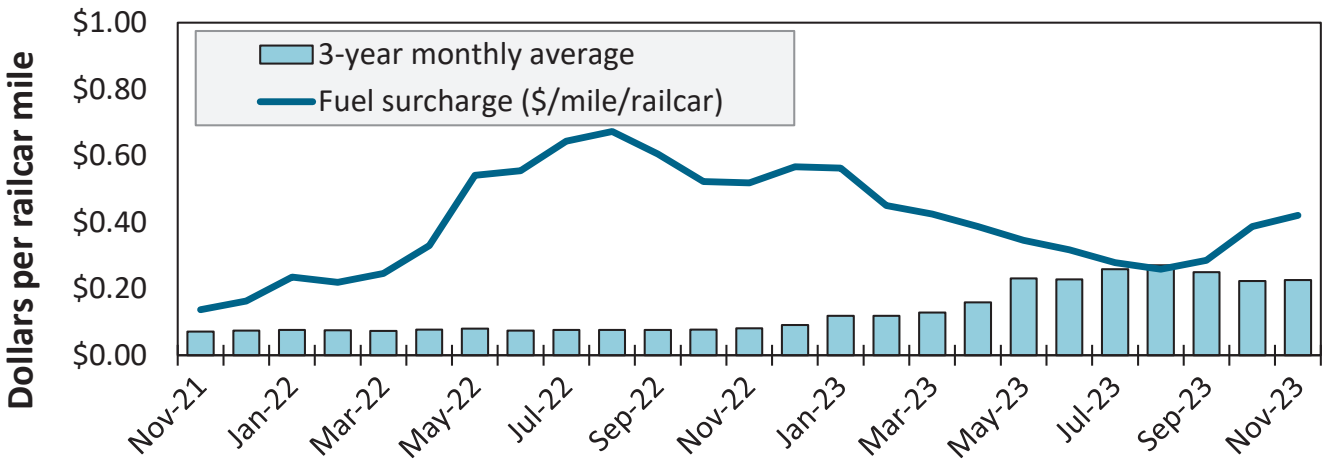
Source: BNSF Railway, Canadian National Railway, CSX Transportation, and Union Pacific Railroad.

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.

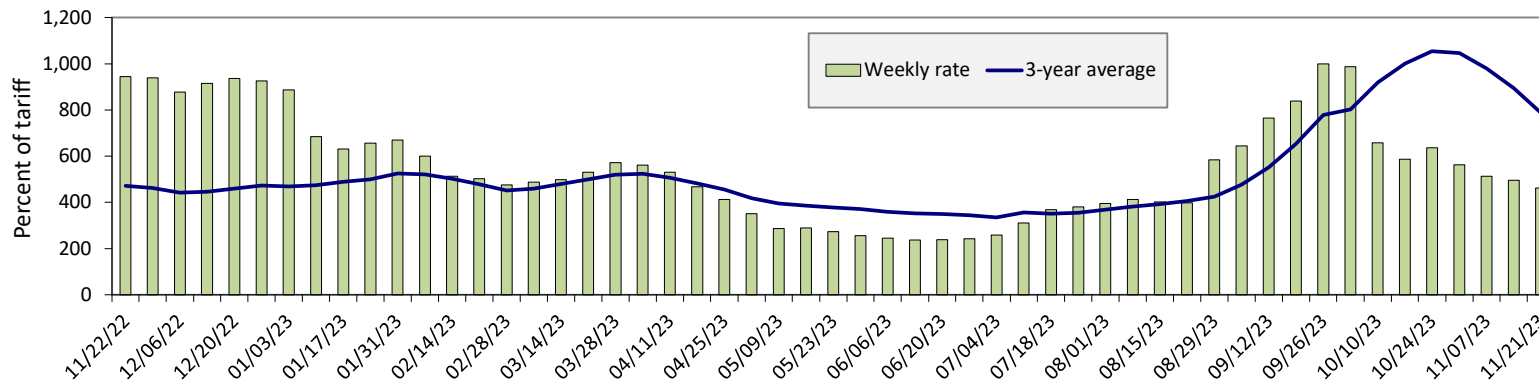
Figure 7. Railroad fuel surcharges, North American weighted average



November 2023: \$0.42/mile, up 3 cents from last month's surcharge of \$0.39/mile; down 10 cents from the November 2022 surcharge of \$0.52/mile; and up 19 cents from the November prior 3-year average of \$0.23/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 November 21: 7 percent lower than the previous week; and 51 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	11/21/2023	492	454	463	393	477	477	359
	11/14/2023	506	493	495	446	611	611	396
\$/ton	11/21/2023	30.45	24.15	21.48	15.68	22.37	19.27	11.27
	11/14/2023	31.32	26.23	22.97	17.80	28.66	24.68	12.43
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	-	-52	-51	-54	-49	-49	-56
	3-year avg.	-31	-41	-41	-44	-41	-41	-44
Rate	December	-	-	446	383	453	453	346
	February	-	-	434	359	409	409	328

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



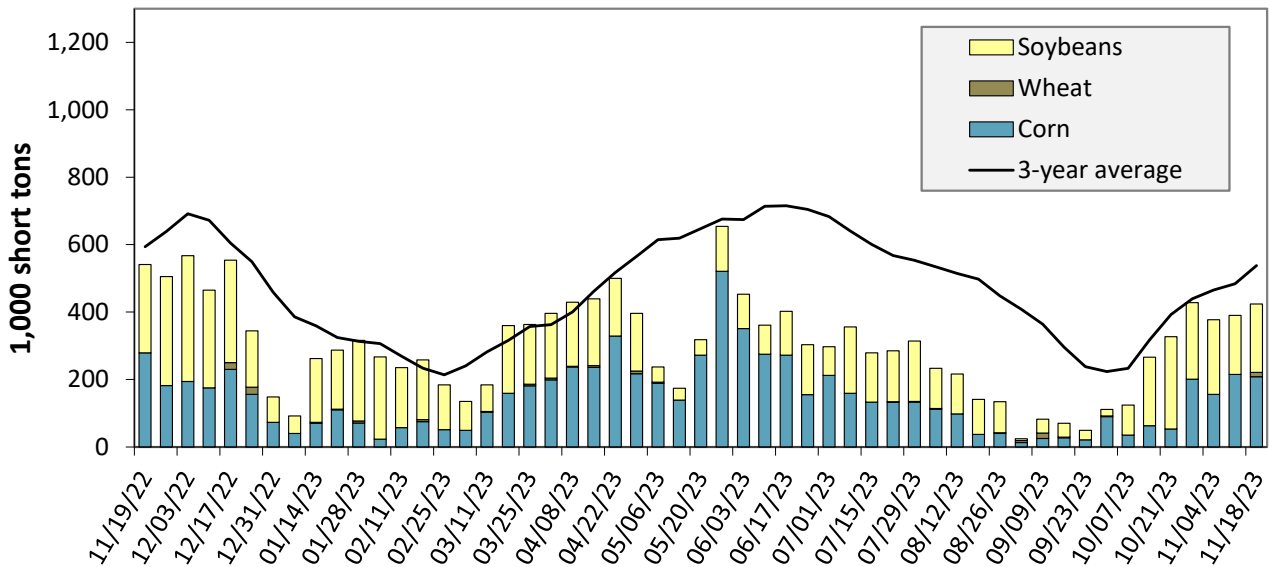
Calculating barge rate per ton:

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

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 November 18:
22 percent lower than last year and 21 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.

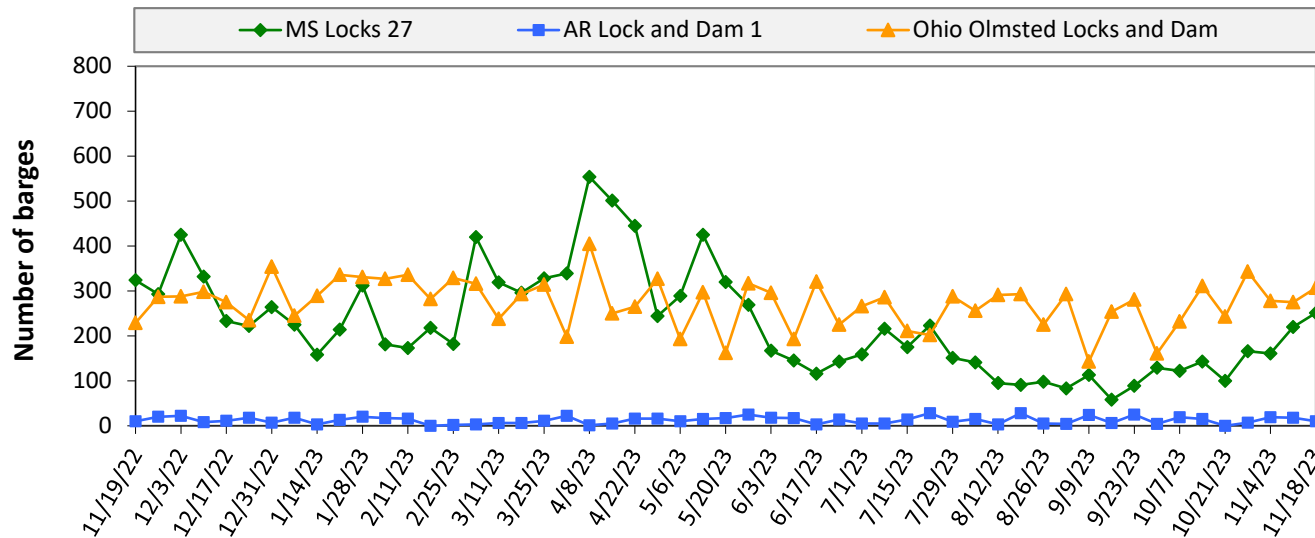
Table 10. Barged grain movements (1,000 tons)

For the week ending 11/18/2023	Corn	Wheat	Soybeans	Other	Total
Mississippi River (Rock Island, IL (L15))	73	13	111	0	196
Mississippi River (Winfield, MO (L25))	140	11	152	0	303
Mississippi River (Alton, IL (L26))	191	11	193	0	395
Mississippi River (Granite City, IL (L27))	208	13	203	0	424
Illinois River (La Grange)	68	3	39	0	111
Ohio River (Olmsted)	144	0	150	4	297
Arkansas River (L1)	0	3	19	0	22
Weekly total - 2023	352	16	372	4	743
Weekly total - 2022	365	0	476	0	841
2023 YTD	10,903	1,207	10,116	216	22,441
2022 YTD	14,944	1,499	11,910	227	28,580
2023 as % of 2022 YTD	73	81	85	95	79
Last 4 weeks as % of 2022	143	-	94	59	112
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.

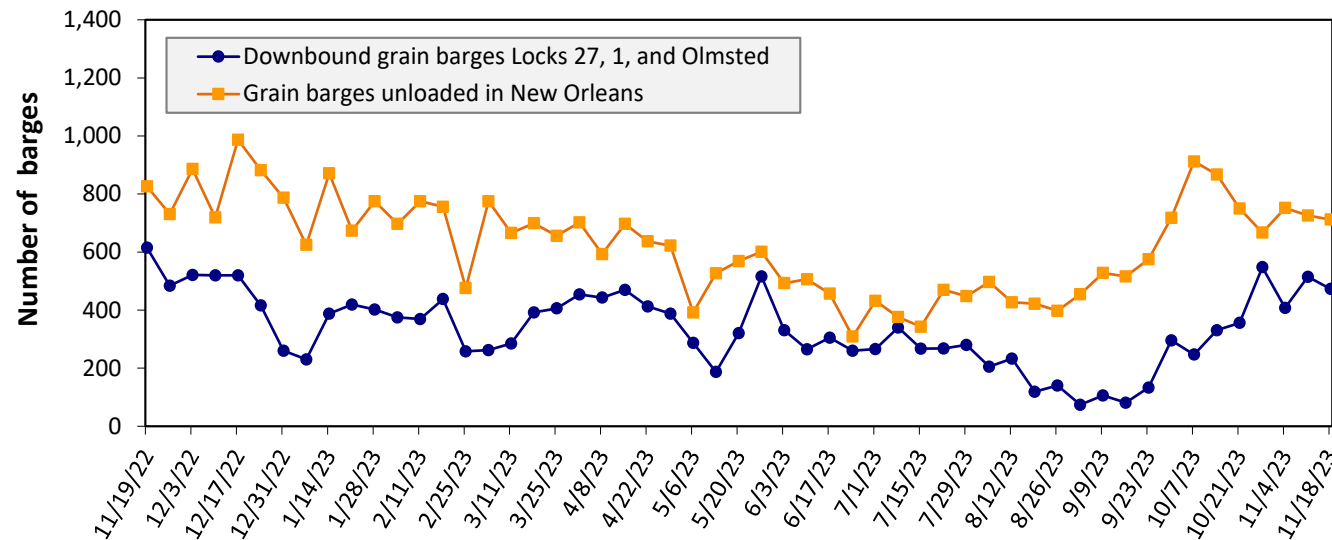
Figure 11. Upbound empty barges transiting Mississippi River Locks 27, Arkansas River Lock and Dam 1, and Ohio River Olmsted Locks and Dam



For the week ending November 18: 568 barges transited the locks, 55 barges more than the previous week, and 13 percent lower 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 November 18: 473 barges moved down river, 42 fewer than the previous week; 712 grain barges unloaded in the New Orleans Region, 2 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.

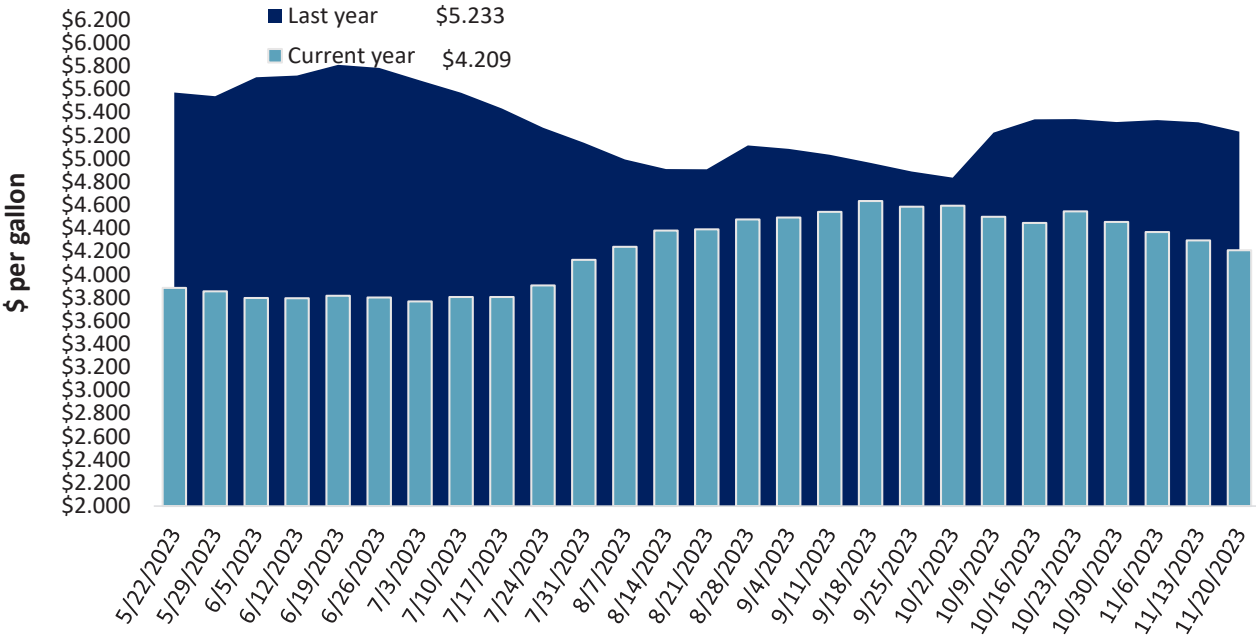
The weekly diesel price provides a proxy for trends in U.S. truck rates as diesel fuel is a significant expense for truck grain movements.

Table 11. Retail on-highway diesel prices, week ending 11/20/2023 (U.S. \$/gallon)

Region	Location	Price	Change from	
			Week ago	Year ago
I	East Coast	4.155	-0.065	-1.256
	New England	4.457	-0.026	-1.506
	Central Atlantic	4.471	-0.057	-1.470
	Lower Atlantic	4.007	-0.072	-1.171
II	Midwest	4.207	-0.101	-1.024
III	Gulf Coast	3.841	-0.086	-0.941
IV	Rocky Mountain	4.268	-0.088	-1.170
V	West Coast	5.069	-0.070	-0.675
	West Coast less California	4.571	-0.080	-0.859
	California	5.640	-0.059	-0.465
Total	United States	4.209	-0.085	-1.024

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 November 20, the U.S. average diesel fuel price decreased 8.5 cents from the previous week to \$4.209 per gallon, 102.4 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 11/9/2023	866	1,023	1,596	1,017	127	4,629	14,601	14,176	33,406
	This week year ago	919	523	1,153	1,043	62	3,699	10,933	21,398	36,030
	Last 4 wks. as % of same period 2022/23	90	199	132	101	211	124	124	63	88
Current shipped (cumulative) exports sales	2023/24 YTD	1,348	1,685	2,545	1,501	186	7,264	6,498	13,983	27,745
	2022/23 YTD	2,613	1,678	2,616	2,101	78	9,085	4,967	14,446	28,498
	YTD 2023/24 as % of 2022/23	52	100	97	71	239	80	131	97	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 11/9/2023	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	10,961	6,974	57	15,227
China	930	3,498	-73	12,616
Japan	2,633	1,447	82	10,273
Columbia	1,602	279	474	4,398
Korea	205	18	1058	2,563
Top 5 importers	16,331	12,216	34	45,077
Total U.S. corn export sales	21,098	15,899	33	56,665
% of YTD current month's export projection	40%	38%		
Change from prior week	1,808	1,170		
Top 5 importers' share of U.S. corn export sales	77%	77%		80%
USDA forecast November 2023	52,708	42,192	25	
Corn use for ethanol USDA forecast, November 2023	135,255	131,471	3	

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 11/9/2023	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	15,329	20,960	-27	32,321
Mexico	2,684	2,723	-1	4,912
Egypt	195	714	-73	2,670
Japan	968	1,107	-13	2,259
Indonesia	466	433	7	1,973
Top 5 importers	19,641	25,938	-24	44,133
Total U.S. soybean export sales	28,159	35,844	-21	56,656
% of YTD current month's export projection	59%	66%		
Change from prior week	3,918	2,960		
Top 5 importers' share of U.S. soybean export sales	70%	72%		78%
USDA forecast, November 2023	47,763	54,213	-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 11/9/2023	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	1,937	2,211	-12	3,397
Philippines	1,759	1,623	8	2,615
Japan	1,197	1,373	-13	2,281
China	813	616	32	1,740
Korea	898	881	2	1,426
Nigeria	189	605	-69	1,276
Taiwan	711	457	55	944
Thailand	281	499	-44	643
Columbia	185	406	-54	537
Indonesia	256	299	-14	469
Top 10 importers	8,224	8,970	-8	15,327
Total U.S. wheat export sales	11,893	12,784	-7	20,411
% of YTD current month's export projection	62%	62%		
Change from prior week	176	290		
Top 10 importers' share of U.S. wheat export sales	69%	70%		75%
USDA forecast, November 2023	19,051	20,657	-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)

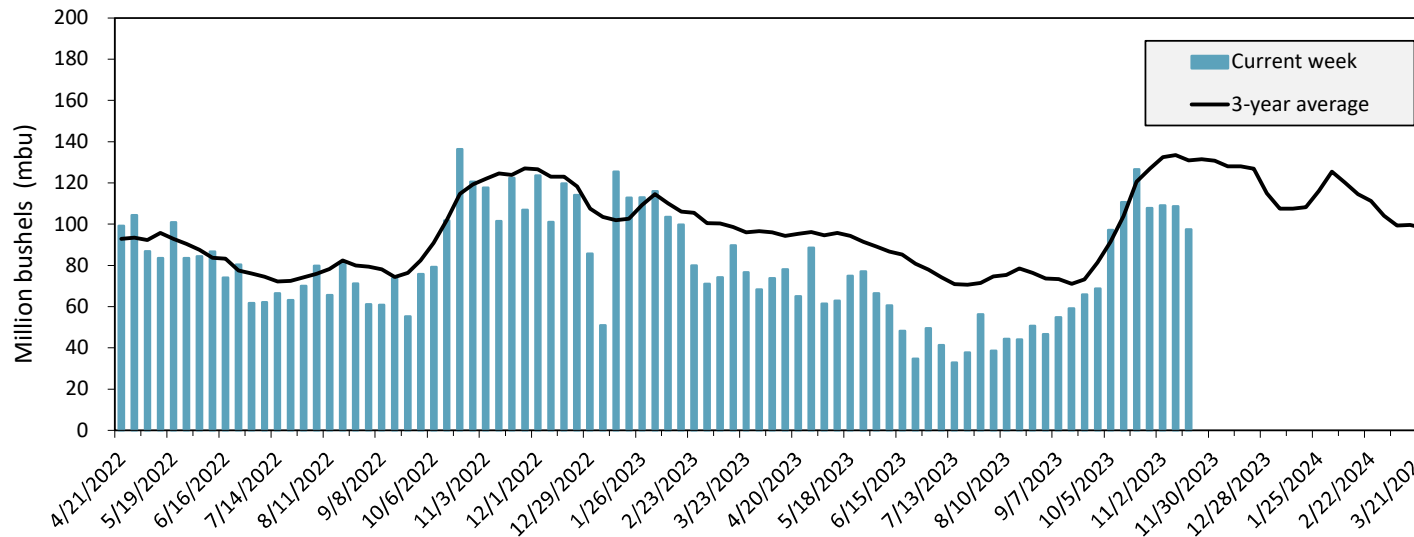
Port regions	Commodity	For the week ending 11/16/2023	Previous week*	Current week as % of previous	2023 YTD*	2022 YTD*	2023 YTD as % of 2022 YTD	Last 4-weeks as % of:		2022 total*
								Last year	Prior 3-yr. avg.	
Pacific Northwest	Wheat	340	127	268	9,012	9,057	100	137	119	9,836
	Corn	69	0	n/a	3,995	8,954	45	n/a	40	9,615
	Soybeans	500	710	71	8,704	11,253	77	82	84	14,178
	Total	910	837	109	21,710	29,264	74	90	87	33,629
Mississippi Gulf	Wheat	9	49	18	3,238	3,951	82	336	73	4,053
	Corn	220	364	60	20,420	28,582	71	108	65	30,781
	Soybeans	969	940	103	23,920	24,385	98	81	75	31,283
	Total	1,198	1,353	89	47,579	56,918	84	87	72	66,116
Texas Gulf	Wheat	11	13	86	1,560	3,132	50	12	12	3,421
	Corn	20	11	180	323	593	55	191	121	648
	Soybeans	0	0	n/a	281	432	65	36	28	685
	Total	31	24	130	2,164	4,157	52	36	30	4,754
Interior	Wheat	18	46	39	2,129	2,560	83	104	86	2,912
	Corn	215	319	67	8,808	7,894	112	159	151	8,961
	Soybeans	211	235	90	5,801	6,257	93	126	116	7,109
	Total	443	600	74	16,737	16,710	100	139	129	18,982
Great Lakes	Wheat	0	0	n/a	384	287	134	n/a	98	395
	Corn	19	0	n/a	56	148	38	n/a	361	158
	Soybeans	0	23	0	176	542	32	30	20	760
	Total	19	23	83	616	977	63	73	41	1,312
Atlantic	Wheat	0	0	n/a	106	169	63	n/a	10	169
	Corn	0	0	n/a	121	293	41	161	193	309
	Soybeans	13	70	19	1,703	2,211	77	60	67	2,867
	Total	13	70	19	1,929	2,673	72	62	69	3,345
U.S. total from ports*	Wheat	377	234	161	16,428	19,155	86	114	87	20,786
	Corn	544	695	78	33,723	46,464	73	137	91	50,471
	Soybeans	1,694	1,977	86	40,584	45,080	90	81	78	56,882
	Total	2,615	2,906	90	90,736	110,699	82	91	81	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.

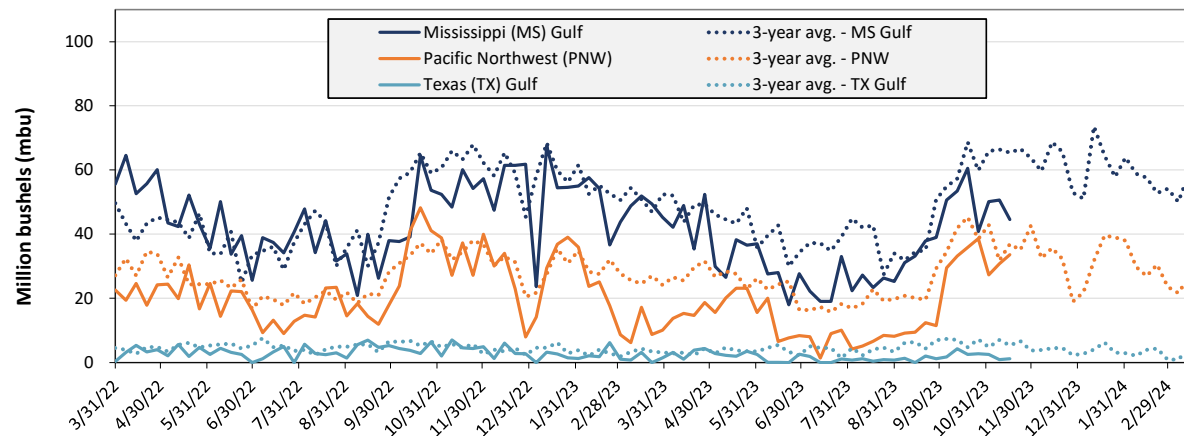
Figure 14. U.S. grain inspected for export (wheat, corn, and soybeans)



For the week ending November 16: 97.5 mbu of grain inspected, down 10 percent from the previous week, down 20 percent from the same week last year, and down 26 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 11/16/23 inspections (mbu):

MS Gulf: 44.6

PNW: 33.6

TX Gulf: 1.2

Percent change from	MS Gulf	TX Gulf	U.S. Gulf	PNW
Last week	down 12	up 32	down 11	up 9
Last year (same week)	down 26	down 73	down 29	down 10
3-year average (4-week moving average)	down 31	down 80	down 35	down 10

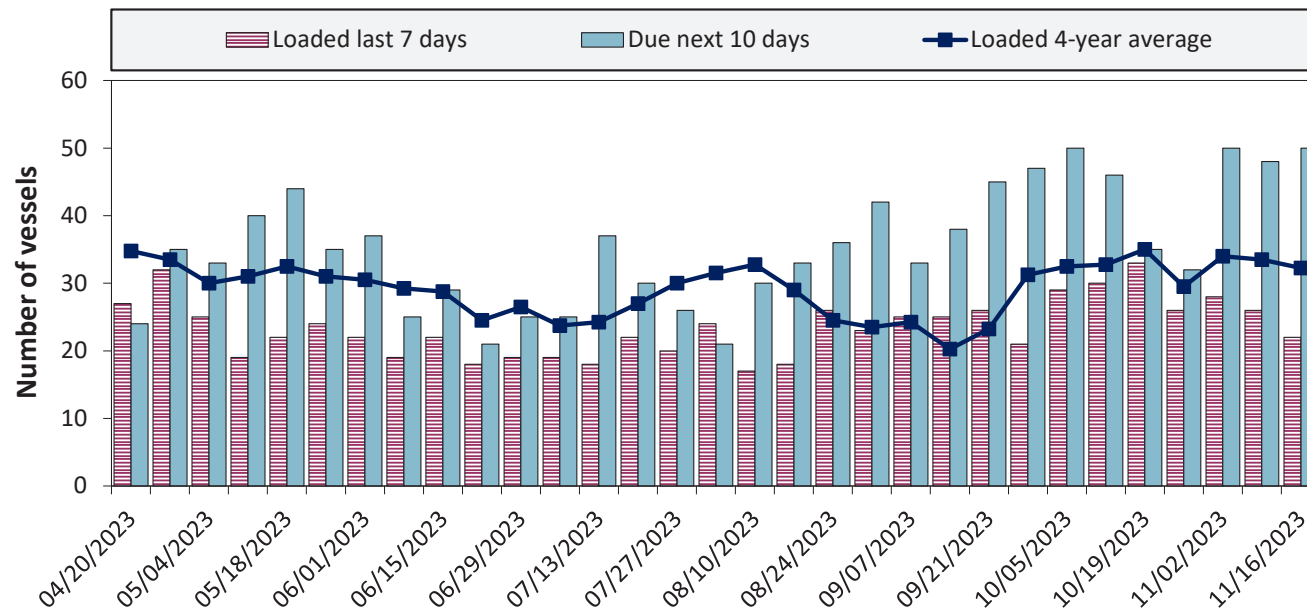
Source: USDA, Federal Grain Inspection Service.

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
11/16/2023	31	22	50	17
11/9/2023	30	26	48	11
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.

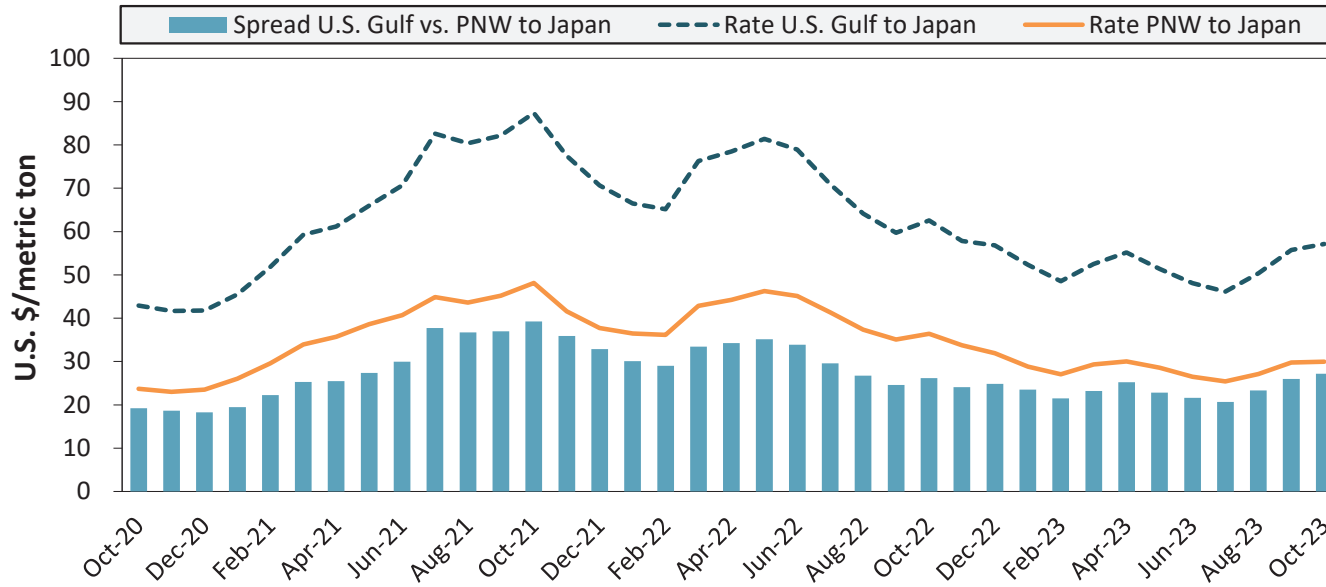
Figure 16. U.S . Gulf vessel loading activity



Week ending 11/16/23, number of vessels	Loaded	Due
Change from last year	-12.0%	4.2%
Change from 4-year average	-31.8%	0.5%

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
October 2023	\$57.13	\$29.94	\$27.19
Change from October 2022	-8.7%	-17.7%	3.8%
Change from 4-year average	-6.2%	-12.1%	1.3%

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

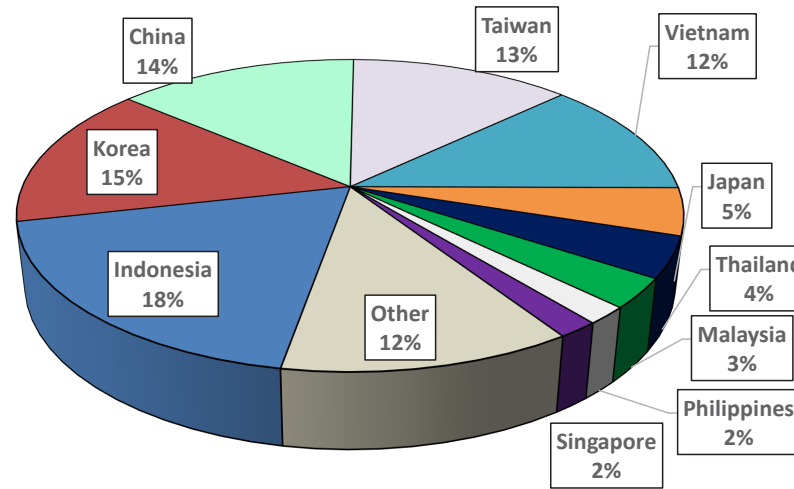
Table 18. Ocean freight rates for selected shipments, week ending 11/18/2023

Export region	Import region	Grain types	Entry date	Loading date	Volume loads (metric tons)	Freight rate (US\$/metric ton)
U.S. Gulf	China	Heavy grain	Sep 12, 2023	Oct 1/ Nov 1, 2023	66,000	54.50
U.S. Gulf	China	Heavy grain	Sep 6, 2023	Oct 1/10, 2023	68,000	55.00
U.S. Gulf	Jamaica	Wheat	Nov 2, 2023	Dec 1/10, 2023	9,460	63.50
U.S. Gulf	Colombia	Wheat	Oct 26, 2023	Dec 15/25, 2023	27,500	99.00
U.S. Gulf	Guyana	Wheat	Nov 2, 2023	Dec 1/10, 2023	8,250	84.00
U.S. Gulf	S. Korea	Heavy grain	Oct 10, 2023	Nov 25/Dec 5, 2023	58,000	65.35
U.S. Gulf	S. Korea	Heavy grain	Sep 27, 2023	Oct 25/Nov 5, 2023	57,000	64.85
U.S. Gulf	S. Korea	Heavy grain	Sep 19, 2023	Nov 1/15, 2023	58,000	64.50
U.S. Gulf	S. Korea	Heavy grain	Aug 1, 2023	Oct 1/20, 2023	57,000	58.30
PNW	N. China	Heavy grain	Oct 19, 2023	Nov 16/22, 2023	66,000	28.00
PNW	Thailand	Heavy grain	Oct 20, 2023	Dec 5/15, 2023	66,000	22.50
PNW	Yemen	Wheat	Oct 6, 2023	Nov 5/15, 2023	30,000	74.43
PNW	Yemen	Wheat	Sep 26, 2023	Nov 5/15, 2023	24,740	91.89
WC US	Thailand	Wheat	Nov 9, 2023	Dec 1/10, 2023	60,500	35.25
Brazil	China	Heavy grain	Oct 26, 2023	Dec 1/3, 2023	64,000	39.25

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.

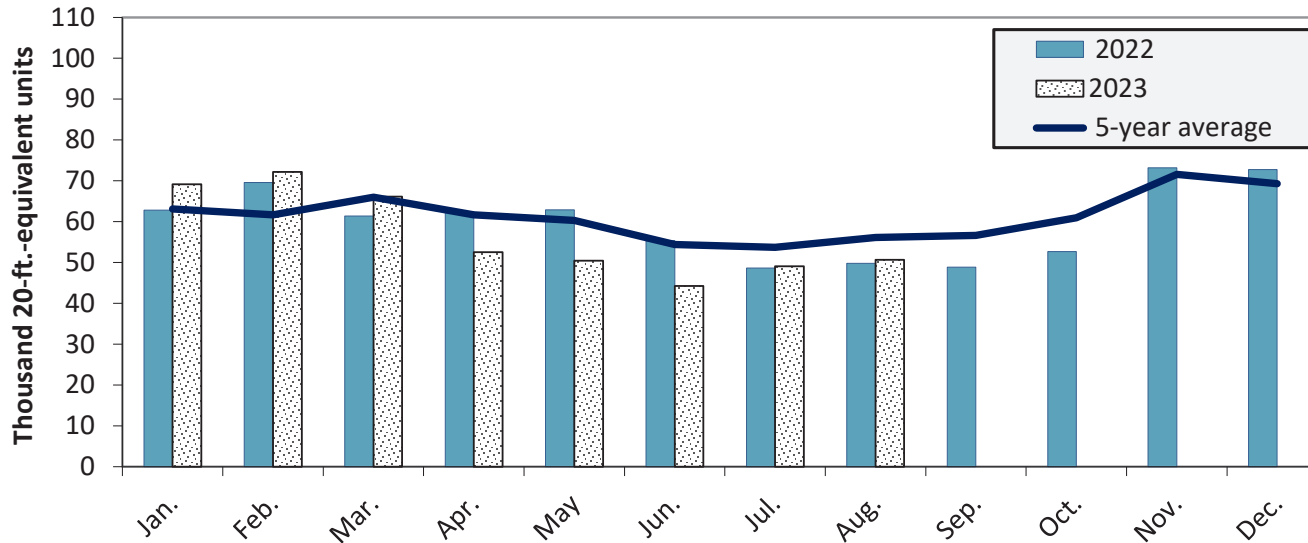
Figure 18. Top 10 destination markets for U.S. containerized grain exports, Jan-Aug 2023



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 up 1.8 percent from last year but down 9.7 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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