



Grain Transportation Report

A weekly publication of the Agricultural Marketing Service
www.ams.usda.gov/GTR

Contact Us

December 30, 2021

WEEKLY HIGHLIGHTS

DOT Funds Major Upgrades of Supply Chain Infrastructure at Ports

The Department of Transportation's (DOT) Maritime Administration (MARAD) [recently awarded](#) \$241 million in grants for port infrastructure. The grants are expected to nearly double annually for 5 years starting next year (to \$450 million). Disbursed through MARAD's Port Infrastructure Development Program, the grants will be allocated immediately to 25 projects in 19 states. The allotments include \$52.3 million to the Port of Long Beach, CA, which will boost rail capacity with several new features: a new locomotive facility, 10,000-foot support track, and extensions of five existing tracks. The new Long Beach construction will expedite freight movements, while reducing the number of required truck trips. Other awards include \$18.3 million to Houston, TX, for a 39-acre greenspace at the Bayport Container Terminal; \$15.7 million to Tacoma, WA, for construction of an off-dock container support facility; and \$14.6 million to Brunswick, GA, to build a fourth berth for cargo ships at Colonel's Island Terminal. The full list of recipients can be [found here](#).

USACE Hosts Inland Waterways Industry Day

On December 15, the U.S. Army Corps of Engineers (USACE) hosted an Inland Waterways Industry Day to update the status and budget of lock construction and maintenance projects, and to facilitate the conversation between USACE and the barge industry on current issues related to waterways and infrastructure. During the meeting, Assistant Secretary of the Army for Civil Works Michael Connor stressed the economic and environmental benefits of the U.S. inland waterways system. USACE provided updates of ongoing construction projects by its district commanders. Also discussed was USACE's [Capital Investment Strategy](#) (CIS) and its role in prioritizing projects and allocating USACE's budget, particularly so with the \$2.5 billion in funding from the recently passed Infrastructure Investment and Jobs Act. On the day before the meeting, USACE arranged for Secretary Connor and industry representatives to visit Mississippi River Lock 25 (near Winfield, MO) and Lock 26 (near Alton, IL). USACE tentatively plans to host three quarterly Inland Waterways meetings (such as Industry Days or User Board Meetings) in 2022 and encourages the industry to continue the open dialogue.

DOT Publishes 50th edition of National Transportation Statistics Report

On December 16, DOT's Bureau of Transportation Statistics and Volpe National Transportation Systems Center [released](#) its 50th anniversary edition of *National Transportation Statistics (NTS)*. First published in 1971, *NTS* has grown to more than 200 data tables. The wide-ranging data span the U.S. transportation system's infrastructure for multiple modes, safety record, energy use, environmental impacts, and economic performance. One notable finding on economic performance: from 1999 to 2018, inflation-adjusted rates of revenue per ton-mile increased 27 percent for truck, rose 25 percent for Class I railroad, and rose 16 percent for domestic water transportation. Over the past three decades (from 1990 to 2019), the average length of haul has remained relatively constant for inland waterway shipments, but has increased over 40 percent for Class I railroads. The [commemorative publication](#) includes links to digitized versions of the entire *NTS* collection, and data are also [available online](#).

Snapshots by Sector

Export Sales

For the week ending December 16, **unshipped balances** of wheat, corn, and soybeans for marketing year 2021/22 totaled 45.5 million metric tons (mmt), down 17 percent from the same time last year, and down 2 percent from the previous week. Net **corn export sales** were 0.983 mmt, down 50 percent from the previous week. Net **soybean export sales** were 0.812 mmt, down 38 percent from the previous week. Net weekly **wheat export sales** were 0.425 mmt, down 35 percent from the previous week.

Rail

U.S. Class I railroads originated 24,159 **grain carloads** during the week ending December 18. This was a 3-percent decrease from the previous week, 7 percent fewer than last year, and 3 percent more than the 3-year average.

Average January shuttle **secondary railcar** bids/offers (per car) were \$1,729 above tariff for the week ending December 23. This was \$726 more than last week and \$1,161 more than this week last year. There were no non-shuttle bids/offers this week.

Barge

For the week ending December 25, **barge grain movements** totaled 624,640 tons. This was 24 percent fewer than the previous week and 37 percent fewer than the same period last year.

For the week ending December 25, 390 grain barges **moved down river**—134 fewer barges than the previous week. There were 856 grain barges unloaded in the New Orleans region, 9 percent more than last week.

Ocean

For the week ending December 23, 28 **oceangoing grain vessels** were loaded in the Gulf—down 39 percent from the same period last year. Within the next 10 days (starting December 24), 52 vessels were expected to be loaded—9 percent lower than the same period last year.

Fuel

For the week ending December 27, the U.S. average **diesel fuel price** decreased by 1.1 cents from the previous week to \$3.615 per gallon, 98 cents above the same week last year. At \$3.479 per gallon, the average Midwest diesel price has declined for 8 consecutive weeks and is at its lowest level since October 4, 2021.

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Feature Article/Calendar

Dear Readers,

We commend your tremendous efforts to keep food moving from farm to table in another extraordinary year. Challenges from 2020 persisted into 2021, and new ones emerged, such as increased port congestion and limited transportation capacity. Agricultural and transportation professionals met the challenges of 2021 with great tenacity and resilience. In the highly competitive, ever-evolving business of U.S. grain, we know that insightful, timely, and reliable information is key to your decisions. Through the *Grain Transportation Report (GTR)* and our other products, we strive to provide the information you need. This year, *GTR* staff wrapped up a number of [cooperative research projects funded by USDA's Agricultural Marketing Service](#). These investigated such topics as a comparison of the U.S. and Canadian rail systems, Brazil modal share data for corn and soybeans, the substitutability of barge and rail near the inland waterways, rail service barriers, and chassis availability for containerized agricultural exports. In July, we rolled out "AgTransport 3.0," an expanded and upgraded version of our [Agricultural Transportation Open Data Platform](#).

Synopsis of Agricultural Transportation in 2021

- **Year-to-year grain inspections remain steady.** Total year-to-date (YTD) grain inspections for export are nearing 2020's record level. As of December 23, YTD inspections were around 137 million metric tons (mmt), unchanged from the same time last year, with corn increasing 31 percent, but wheat and soybeans decreasing 10 percent and 19 percent, respectively. Corn inspected for export to Asia has risen significantly from last year, with increased Asian demand. Despite sizeable 2020-21 increases in total grain inspections, second-quarter 2021 soybean and wheat inspections and third-quarter soybean and corn inspections often faltered, mainly reflecting lower shipments to Asia and Latin America.
- **Barged grain movements slightly lower than last year.** The barge industry showed resilience despite multiple challenges to navigation conditions, including severe winter weather, limited barge supply, and flooding and damage from Hurricane Ida that took months to recover from. For the week ending December 25, barged grain shipments reached 36.2 million tons, 6 percent lower than 2020, but 4 percent higher than the 3-year average. These volumes were supported by high production and strong export demand. This year's spot rates mostly followed the historical pattern, staying relatively low in the first two quarters of 2021. In mid-August, rates started to rise quickly, spurred by rising movements and a short supply of empty barges. Overall, 2021 weekly rates were higher than for the same weeks last year. However, for 2 months after Hurricane Ida, in the face of large-scale logistical challenges, rates remained lower than the 3-year average.
- **Grain carloads start and end the year strong.** Grain carloads originated by Class I railroads started the year high. Through May, carloads were well above recent years. However, during the summer months, the situation flipped, with grain carloads well below recent years. As the grain harvest headed into September, grain carloads rose significantly and stayed above the weekly averages for 2018-20. Prices in the secondary market for shuttle service generally correlated with trends in traffic—bids were above average in January and February, below average through September, and above average in October and November. Despite starting and ending the year strong, total 2021 grain carloads (through December 11) were down 7 percent from last year and down 3 percent from the 2018-20 annual average.
- **Fuel prices below the 3-year average.** Average diesel fuel prices from January through November were 11 percent above the 3-year average. Fuel prices have been on an upward swing since January. With the lifting of pandemic restrictions, demand rose, and fuel supply could not keep up with demand. Several factors worsened the supply shortage, including a cyber attack on the Colonial pipeline in April; a breach and spill in a key Southeast-supplying pipeline in October; and the recent decision by the Organization of Petroleum Exporting Countries (OPEC) not to raise current oil production rates. In the year's final weeks, fuel prices dropped, responding to the release of millions of barrels of oil reserves. Prices also dropped in response to demand uncertainty generated by the new Omicron variant of the SARS-CoV-2 coronavirus.

Happy New Year

We hope our insight and analysis facilitated better transportation and marketing decisions in 2021, and we look forward to continuing to serve you in 2022. Many thanks to all industry and government representatives whose tireless work provides the necessary information and data to produce this report. We wish all our readers and contributors a safe, healthy, and prosperous New Year!

Sincerely,

[The GTR Team](#)

Grain Transportation Indicators

Table 1

Grain transport cost indicators¹

For the week ending	Truck	Rail		Barge	Ocean	
		Non-Shuttle	Shuttle		Gulf	Pacific
12/29/21	243	299	304	397	n/a	n/a
12/22/21	243	299	273	410	313	264

¹Indicator: 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.

Source: USDA, Agricultural Marketing Service.

Table 2

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

Commodity	Origin-destination	12/23/2021	12/17/2021
Corn	IL-Gulf	-0.92	-0.93
Corn	NE-Gulf	-0.97	-1.01
Soybean	IA-Gulf	-1.48	-1.39
HRW	KS-Gulf	n/a	-3.10
HRS	ND-Portland	n/a	-2.24

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

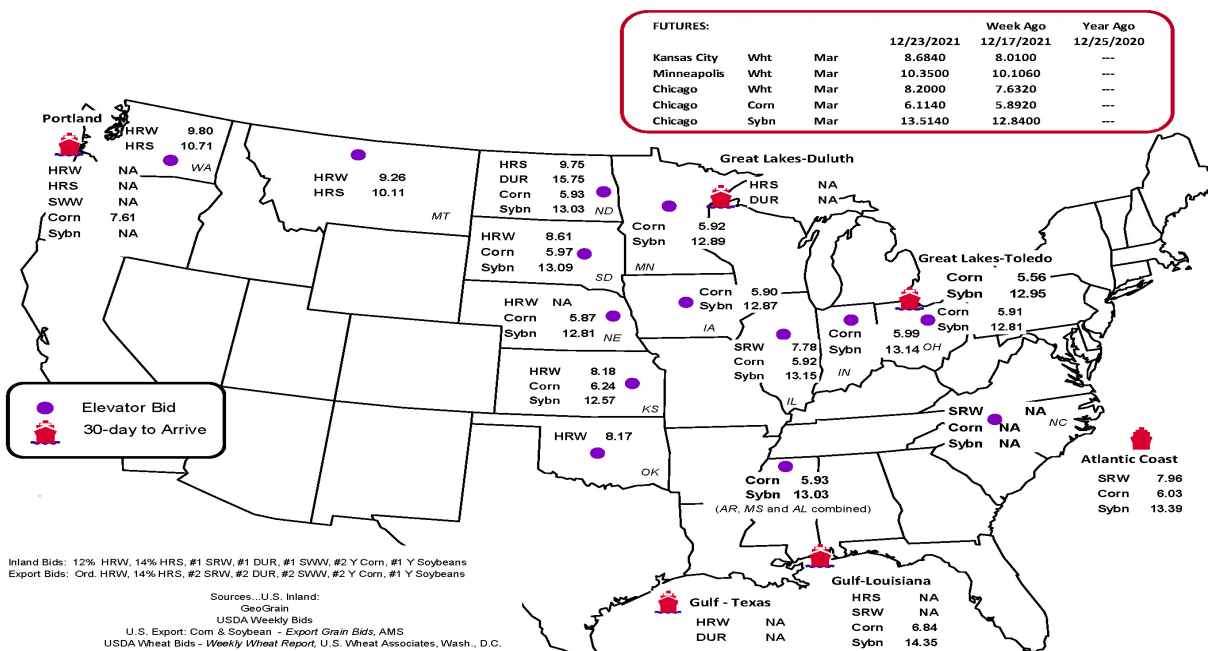
Due to the holiday, data on 12/24 were not available. Therefore, available data on 12/23 are reported.

Source: USDA, Agricultural Marketing Service.

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

Figure 1
Grain bid summary

Note: Because of the holiday, data on 12/24 were not available. Therefore, available data on 12/23 are reported.



Rail Transportation

Table 3

Rail deliveries to port (carloads)¹

For the week ending	Mississippi		Pacific	Atlantic &	Total	Week ending	Cross-border Mexico ³
	Gulf	Texas Gulf	Northwest	East Gulf			
12/22/2021 ^P	1,469	1,732	6,780	943	10,924	12/18/2021	3,439
12/15/2021 ^r	1,276	572	6,739	814	9,401	12/11/2021	3,248
2021 YTD ^r	52,164	66,991	301,166	21,581	441,902	2021 YTD	143,763
2020 YTD ^r	44,235	62,661	292,888	23,761	423,545	2020 YTD	126,292
2021 YTD as % of 2020 YTD	118	107	103	91	104	% change YTD	114
Last 4 weeks as % of 2020 ²	78	70	88	83	84	Last 4wks. % 2020	131
Last 4 weeks as % of 4-year avg. ²	204	128	122	183	134	Last 4wks. % 4 yr.	129
Total 2020	45,294	64,116	299,882	24,458	433,750	Total 2020	126,407
Total 2019	40,974	51,167	251,181	16,192	359,514	Total 2019	125,315

¹Data is incomplete as it is voluntarily provided.

²Compared with same 4-weeks in 2020 and prior 4-year average.

³Cross-border weekly data is approximately 15 percent below the Association of American Railroads' reported weekly carloads received by Mexican railroads to reflect switching between Kansas City Southern de Mexico (KCSM) and Grupo Mexico.

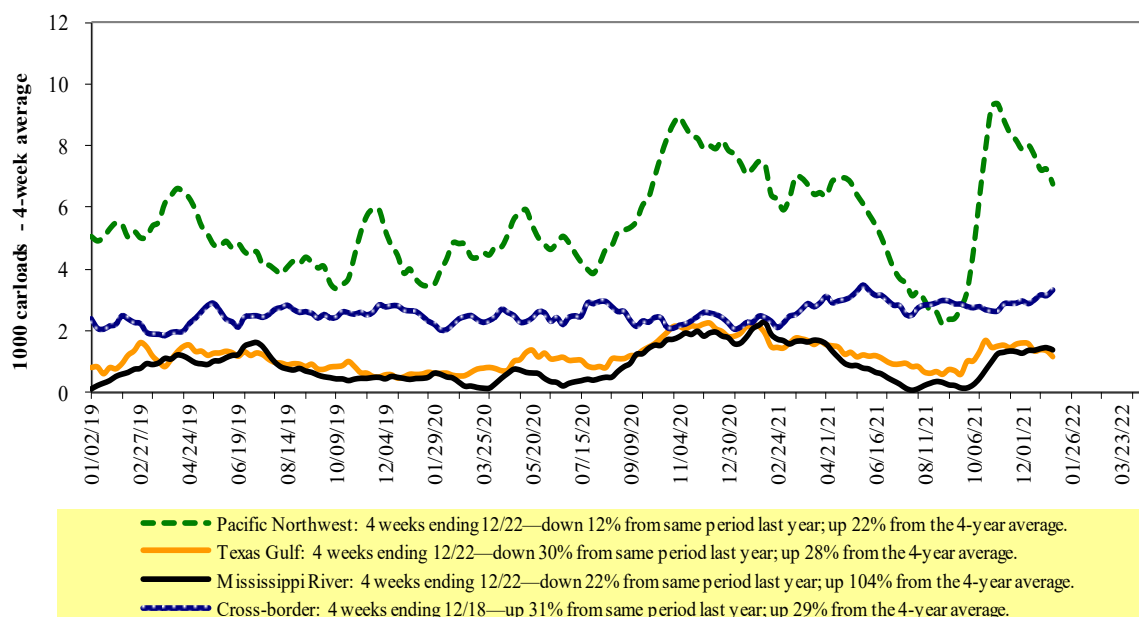
YTD = year-to-date; p = preliminary data; r = revised data; n/a = not available; wks. = weeks; avg. = average.

Source: USDA, Agricultural Marketing Service.

Railroads originate approximately 24 percent of U.S. grain shipments. Trends in these loadings are indicative of market conditions and expectations.

Figure 2

Rail deliveries to port



Source: USDA, Agricultural Marketing Service.

Table 4

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

For the week ending: 12/18/2021	East		West			U.S. total	Canada	
	CSXT	NS	BNSF	KCS	UP		CN	CP
This week	2,073	2,514	12,433	1,523	5,616	24,159	4,163	4,061
This week last year	2,440	2,590	13,169	1,156	6,512	25,867	5,109	7,475
2021 YTD	90,600	117,308	590,261	62,246	308,279	1,168,694	204,270	235,215
2020 YTD	88,505	125,527	589,307	55,943	283,740	1,143,022	228,924	252,576
2021 YTD as % of 2020 YTD	102	93	100	111	109	102	89	93
Last 4 weeks as % of 2020*	96	85	93	135	92	94	67	63
Last 4 weeks as % of 3-yr. avg.**	116	89	105	143	114	108	79	75
Total 2020	91,659	129,809	613,630	57,782	296,701	1,189,581	237,935	261,778

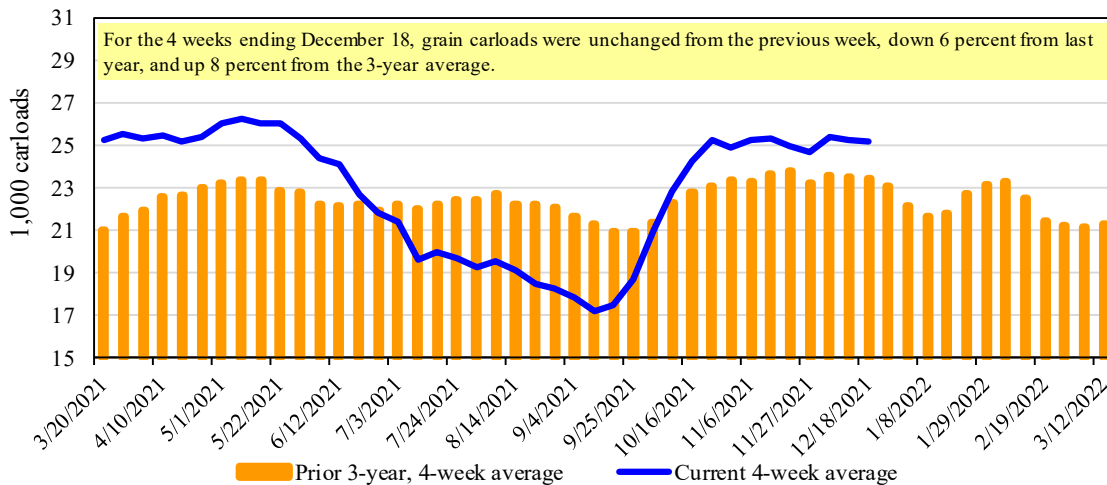
*The past 4 weeks of this year as a percent of the same 4 weeks last year.

**The past 4 weeks as a percent of the same period from the prior 3-year average. YTD = year-to-date; avg. = average; yr. = year.

Note: NS = Norfolk Southern; KCS = Kansas City Southern; UP = Union Pacific; CN = Canadian National; CP = Canadian Pacific.

Source: Association of American Railroads.

Figure 3

Total weekly U.S. Class I railroad grain carloads

Source: Association of American Railroads.

Table 5

Railcar auction offerings¹ (\$/car)²

For the week ending: 12/23/2021		Delivery period							
		Jan-22	Jan-21	Feb-22	Feb-21	Mar-22	Mar-21	Apr-22	Apr-21
BNSF ³	COT grain units	398	0	40	0	0	0	0	no bids
	COT grain single-car	430	427	35	209	0	55	0	0
UP ⁴	GCAS/Region 1	no offer	no offer	no offer	no offer	no offer	no offer	n/a	n/a
	GCAS/Region 2	no offer	no offer	no offer	no offer	no offer	no offer	n/a	n/a

¹Auction offerings are for single-car and unit train shipments only.

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

³BNSF - COT = BNSF Railway Certificate of Transportation; north grain and south grain bids were combined effective the week ending 6/24/06.

⁴UP - GCAS = Union Pacific Railroad Grain Car Allocation System.

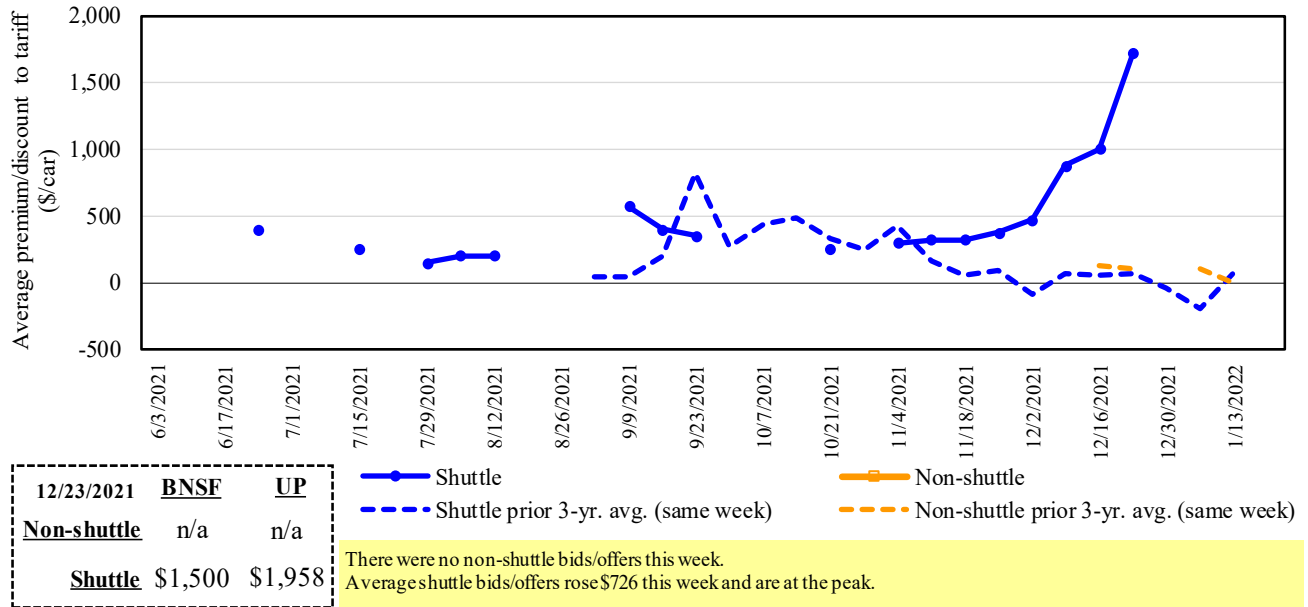
Region 1 includes: AR, IL, LA, MO, NM, OK, TX, WI, and Duluth, MN.

Region 2 includes: CO, IA, KS, MN, NE, WY, and Kansas City and St. Joseph, MO.

Source: USDA, Agricultural Marketing Service.

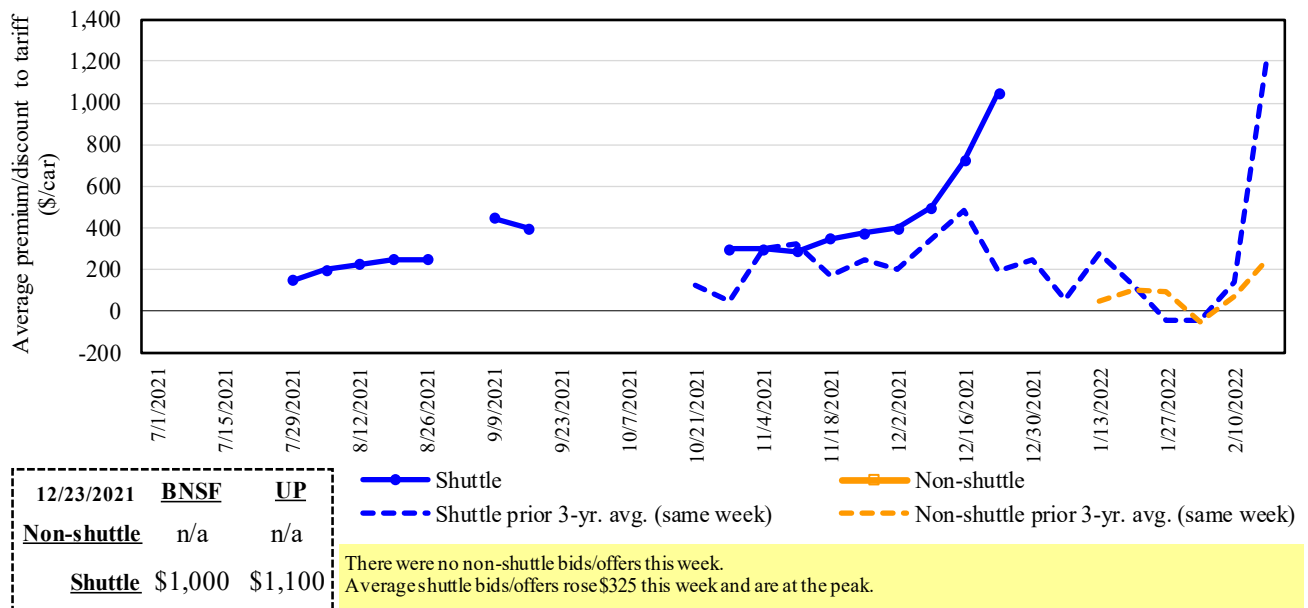
The **secondary rail market** information reflects trade values for service that was originally purchased from the railroad carrier as some form of guaranteed freight. The **auction and secondary rail** values are indicators of rail service quality and demand/supply.

Figure 4
Bids/offers for railcars to be delivered in January 2022, secondary market



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

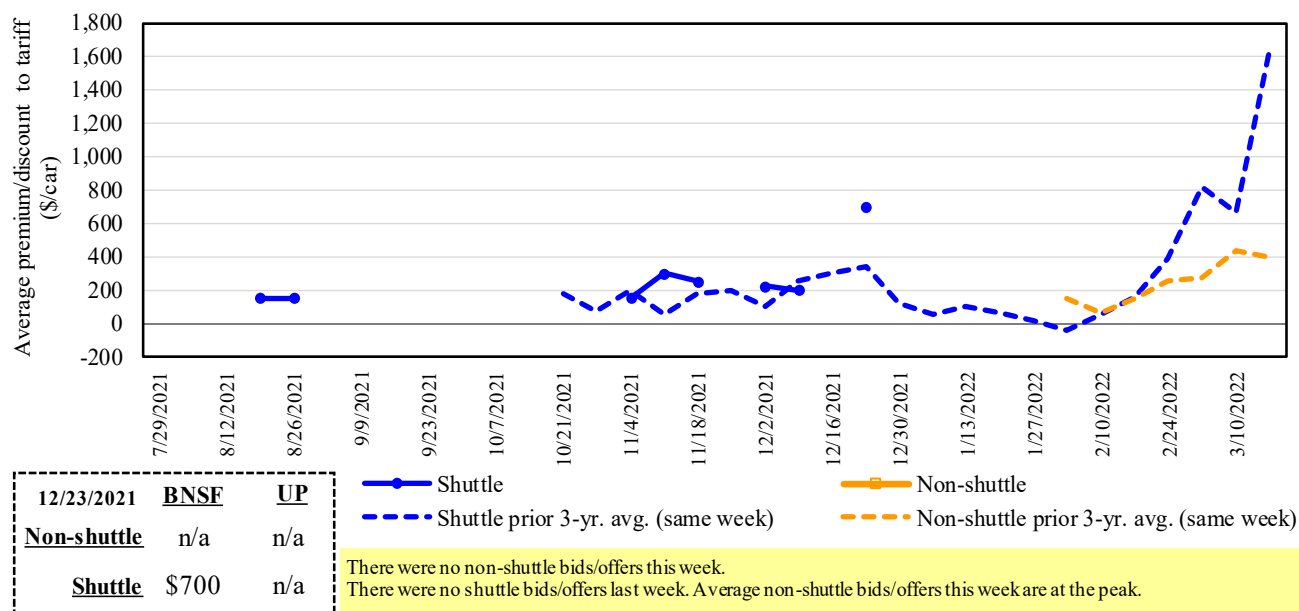
Figure 5
Bids/offers for railcars to be delivered in February 2022, secondary market



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

Figure 6

Bids/offers for railcars to be delivered in March 2022, secondary market



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

Table 6

Weekly secondary railcar market (\$/car)¹

For the week ending: 12/23/2021		Delivery period					
		Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22
Non-shuttle	BNSF-GF	n/a	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 2020	n/a	n/a	n/a	n/a	n/a	n/a
	UP-Pool	n/a	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 2020	n/a	n/a	n/a	n/a	n/a	n/a
Shuttle	BNSF-GF	1,500	1,000	700	133	0	n/a
	Change from last week	344	250	n/a	108	n/a	n/a
	Change from same week 2020	931	312	319	(42)	50	n/a
	UP-Pool	1,958	1,100	n/a	50	n/a	n/a
	Change from last week	1,108	400	n/a	200	n/a	n/a
	Change from same week 2020	1,391	600	n/a	42	n/a	n/a

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

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

BNSF = BNSF Railway; UP = Union Pacific Railroad.

Data from James B. Joiner Co., Tradewest Brokerage Co.

Source: USDA, Agricultural Marketing Service.

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 7

Tariff rail rates for unit and shuttle train shipments¹

December 2021	Origin region ³	Destination region ³	Tariff rate/car	Fuel surcharge per car	Tariff plus surcharge per:		Percent change Y/Y ⁴
					metric ton	bushel ²	
Unit train							
Wheat	Wichita, KS	St. Louis, MO	\$3,695	\$167	\$38.35	\$1.04	4
	Grand Forks, ND	Duluth-Superior, MN	\$3,658	\$0	\$36.33	\$0.99	-13
	Wichita, KS	Los Angeles, CA	\$7,290	\$0	\$72.39	\$1.97	2
	Wichita, KS	New Orleans, LA	\$4,525	\$294	\$47.85	\$1.30	5
	Sioux Falls, SD	Galveston-Houston, TX	\$7,026	\$0	\$69.77	\$1.90	3
	Colby, KS	Galveston-Houston, TX	\$4,801	\$322	\$50.87	\$1.38	5
	Amarillo, TX	Los Angeles, CA	\$5,121	\$448	\$55.30	\$1.51	7
Corn	Champaign-Urbana, IL	New Orleans, LA	\$4,000	\$332	\$43.02	\$1.09	9
	Toledo, OH	Raleigh, NC	\$8,130	\$0	\$80.73	\$2.05	4
	Des Moines, IA	Davenport, IA	\$2,505	\$70	\$25.57	\$0.65	4
	Indianapolis, IN	Atlanta, GA	\$6,227	\$0	\$61.84	\$1.57	4
	Indianapolis, IN	Knoxville, TN	\$5,247	\$0	\$52.11	\$1.32	4
	Des Moines, IA	Little Rock, AR	\$4,000	\$207	\$41.77	\$1.06	7
	Des Moines, IA	Los Angeles, CA	\$5,880	\$602	\$64.37	\$1.63	10
Soybeans	Minneapolis, MN	New Orleans, LA	\$3,631	\$412	\$40.15	\$1.09	11
	Toledo, OH	Huntsville, AL	\$6,714	\$0	\$66.67	\$1.81	2
	Indianapolis, IN	Raleigh, NC	\$7,422	\$0	\$73.70	\$2.01	4
	Indianapolis, IN	Huntsville, AL	\$5,367	\$0	\$53.30	\$1.45	2
Champaign-Urbana, IL	New Orleans, LA	\$4,745	\$332	\$50.42	\$1.37	8	
Shuttle train							
Wheat	Great Falls, MT	Portland, OR	\$4,193	\$0	\$41.64	\$1.13	4
	Wichita, KS	Galveston-Houston, TX	\$4,411	\$0	\$43.80	\$1.19	4
	Chicago, IL	Albany, NY	\$6,670	\$0	\$66.24	\$1.80	5
	Grand Forks, ND	Portland, OR	\$5,851	\$0	\$58.10	\$1.58	3
	Grand Forks, ND	Galveston-Houston, TX	\$5,721	\$0	\$56.81	\$1.55	-5
	Colby, KS	Portland, OR	\$6,012	\$528	\$64.94	\$1.77	7
	Minneapolis, MN	Portland, OR	\$5,380	\$0	\$53.43	\$1.36	4
Corn	Sioux Falls, SD	Tacoma, WA	\$5,340	\$0	\$53.03	\$1.35	4
	Champaign-Urbana, IL	New Orleans, LA	\$3,920	\$332	\$42.22	\$1.07	10
	Lincoln, NE	Galveston-Houston, TX	\$4,080	\$0	\$40.52	\$1.03	5
	Des Moines, IA	Amarillo, TX	\$4,420	\$260	\$46.47	\$1.18	7
	Minneapolis, MN	Tacoma, WA	\$5,380	\$0	\$53.43	\$1.36	4
	Council Bluffs, IA	Stockton, CA	\$5,300	\$0	\$52.63	\$1.34	4
	Sioux Falls, SD	Tacoma, WA	\$6,050	\$0	\$60.08	\$1.64	3
Soybeans	Minneapolis, MN	Portland, OR	\$6,100	\$0	\$60.58	\$1.65	3
	Fargo, ND	Tacoma, WA	\$5,950	\$0	\$59.09	\$1.61	3
	Council Bluffs, IA	New Orleans, LA	\$4,975	\$383	\$53.21	\$1.45	8
	Toledo, OH	Huntsville, AL	\$4,954	\$0	\$49.20	\$1.34	0
	Grand Island, NE	Portland, OR	\$5,360	\$540	\$58.59	\$1.59	10

¹A 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.

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

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

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

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

Table 8

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

Date: December 2021			Tariff rate per car ¹	Fuel surcharge per car ²	Tariff rate plus fuel surcharge per:		Percent change ⁴ Y/Y
Commodity	Origin state	Destination region			metric ton ³	bushel ³	
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	Tlahnepantla, EM	\$7,687	\$450	\$83.14	\$2.11	5
	SD	Torreon, 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	Torreon, 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	Torreon, CU	\$7,225	\$438	\$78.29	\$1.99	6

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

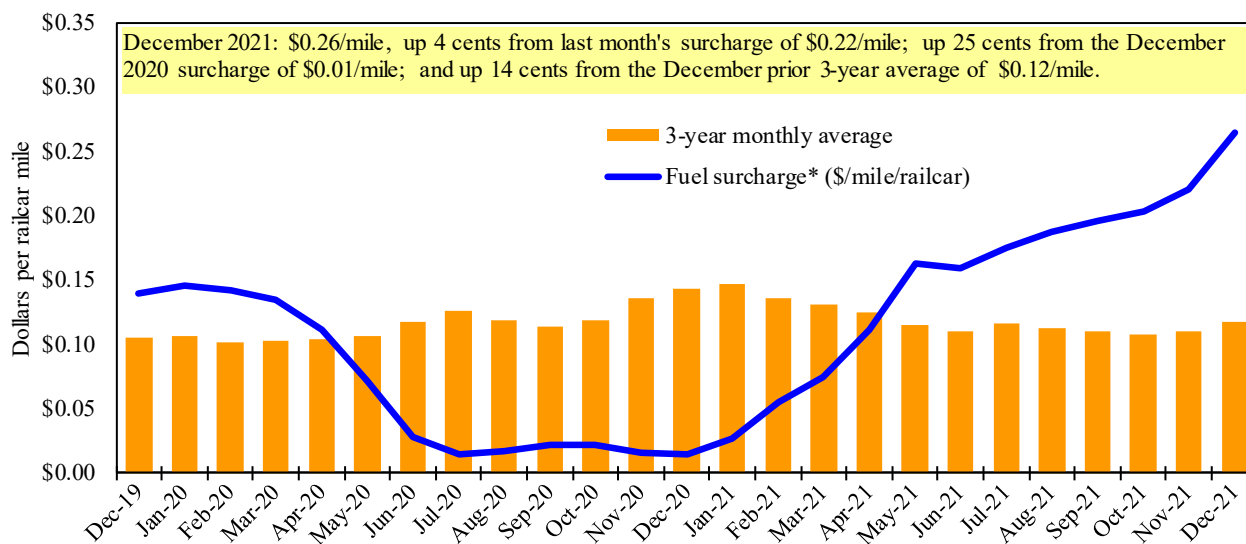
²Fuel surcharge adjusted to reflect the change in Ferrocarril Mexicano, S.A. de C.V railroad fuel surcharge policy as of 10/01/2009.

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

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

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

Figure 7

Railroad fuel surcharges, North American weighted average¹

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

* Beginning January 2009, the Canadian Pacific fuel surcharge is computed by a monthly average of the bi-weekly fuel surcharge.

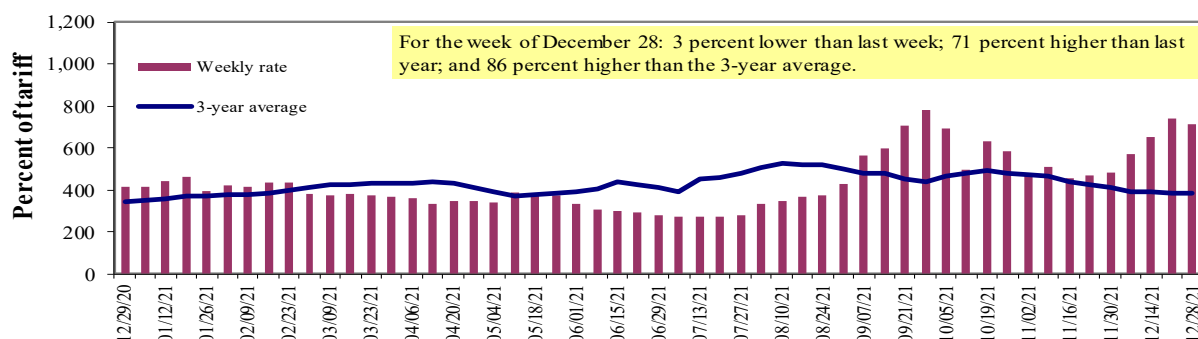
**CSX strike price changed from \$2.00/gal. to \$3.75/gal. starting January 1, 2015.

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

Barge Transportation

Figure 8

Illinois River barge freight rate^{1,2}



¹Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); ²4-week moving average of the 3-year average.

*Source: USDA, Agricultural Marketing Service.

Table 9

Weekly barge freight rates: Southbound only

		Twin Cities	Mid-Mississippi	Lower Illinois River	St. Louis	Cincinnati	Lower Ohio	Cairo-Memphis
Rate¹	12/28/2021	-	-	715	655	640	640	590
	12/21/2021	-	675	738	725	663	663	550
\$/ton	12/28/2021	-	-	33.18	26.13	30.02	25.86	18.53
	12/21/2021	-	35.91	34.24	28.93	31.09	26.79	17.27
Current week % change from the same week:								
	Last year	-	-	71	103	84	84	113
	3-year avg. ²	-	-	86	131	96	96	130
Rate¹	January	-	-	567	512	518	518	435
	March	-	450	426	344	360	360	303

¹Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); ²4-week moving average; ton = 2,000 pounds; "-" not available due to lock closure.

Source: USDA, Agricultural Marketing Service.

Figure 9

Benchmark tariff rates

Calculating barge rate per ton:

(Rate * 1976 tariff benchmark rate per ton)/100

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

Map Credit: USDA, Agricultural Marketing Service

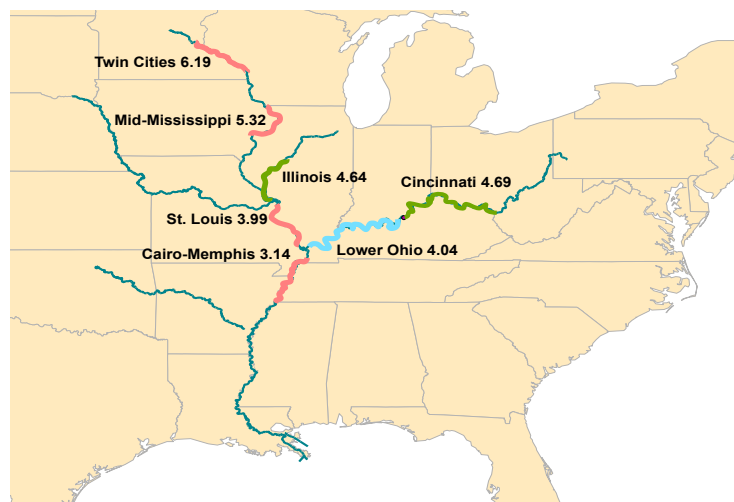
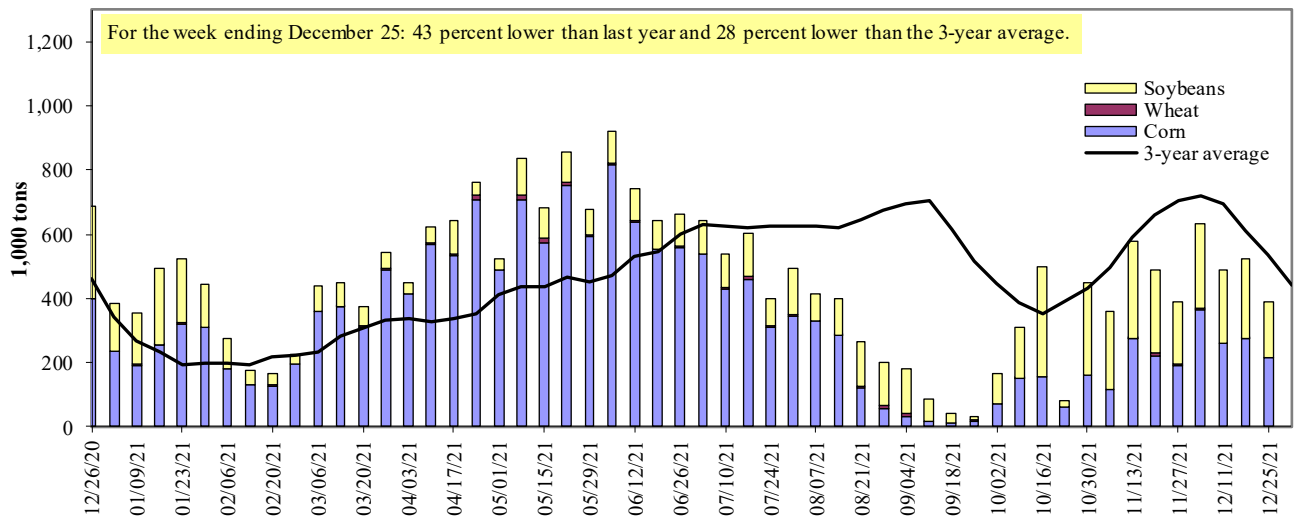


Figure 10

Barge movements on the Mississippi River¹ (Locks 27 - Granite City, IL)



¹ The 3-year average is a 4-week moving average.

Source: U.S. Army Corps of Engineers.

Table 10

Barge grain movements (1,000 tons)

For the week ending 12/25/2021	Corn	Wheat	Soybeans	Other	Total
Mississippi River					
Rock Island, IL (L15)	0	0	0	0	0
Winfield, MO (L25)	48	0	43	0	91
Alton, IL (L26)	211	0	163	0	373
Granite City, IL (L27)	214	0	174	0	388
Illinois River (La Grange)	145	0	141	0	286
Ohio River (Olmsted)	120	0	66	12	198
Arkansas River (L1)	0	8	31	0	39
Weekly total - 2021	333	8	271	12	625
Weekly total - 2020	417	11	568	2	997
2021 YTD ¹	23,284	1,618	10,954	290	36,145
2020 YTD ¹	18,018	1,740	18,325	224	38,308
2021 as % of 2020 YTD	129	93	60	129	94
Last 4 weeks as % of 2020 ²	102	118	64	146	80
Total 2020	18,942	1,765	19,205	237	40,149

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

Total may not add exactly due to rounding.

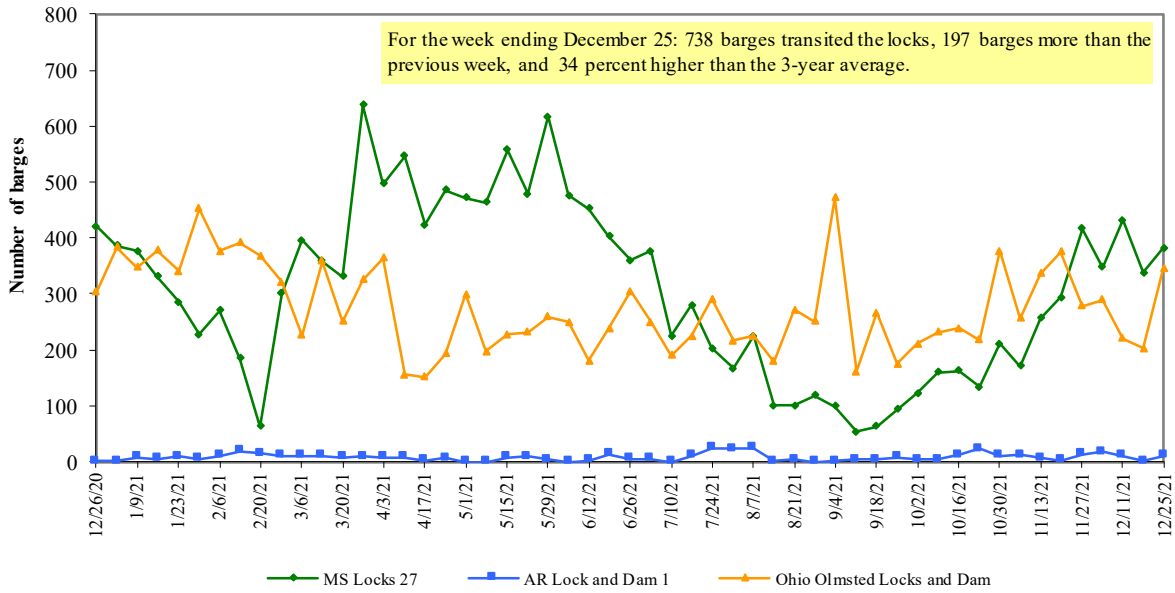
² As a percent of same period in 2020.

Note: L (as in "L15") refers to a lock, locks, or locks and dam facility.

Source: U.S. Army Corps of Engineers.

Figure 11

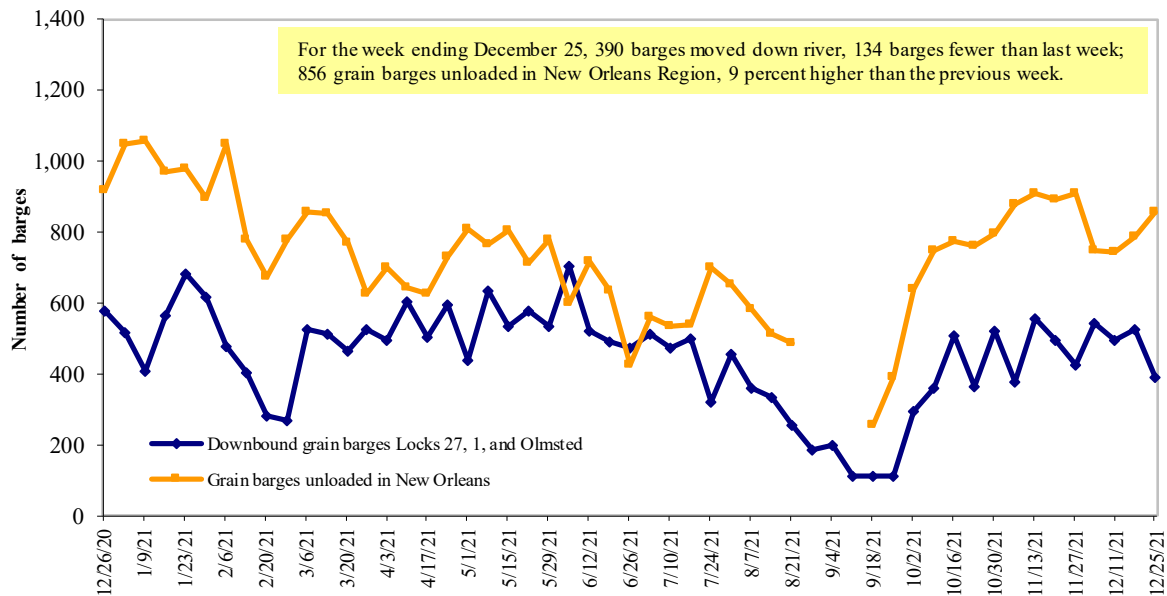
Upbound empty barges transiting Mississippi River Locks 27, Arkansas River Lock and Dam 1, and Ohio River Olmsted Locks and Dam



Source: U.S. Army Corps of Engineers.

Figure 12

Grain barges for export in New Orleans region



Note: Olmsted = Olmsted Locks and Dam.

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

Truck Transportation

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

Table 11

Retail on-highway diesel prices, week ending 12/27/2021 (U.S. \$/gallon)

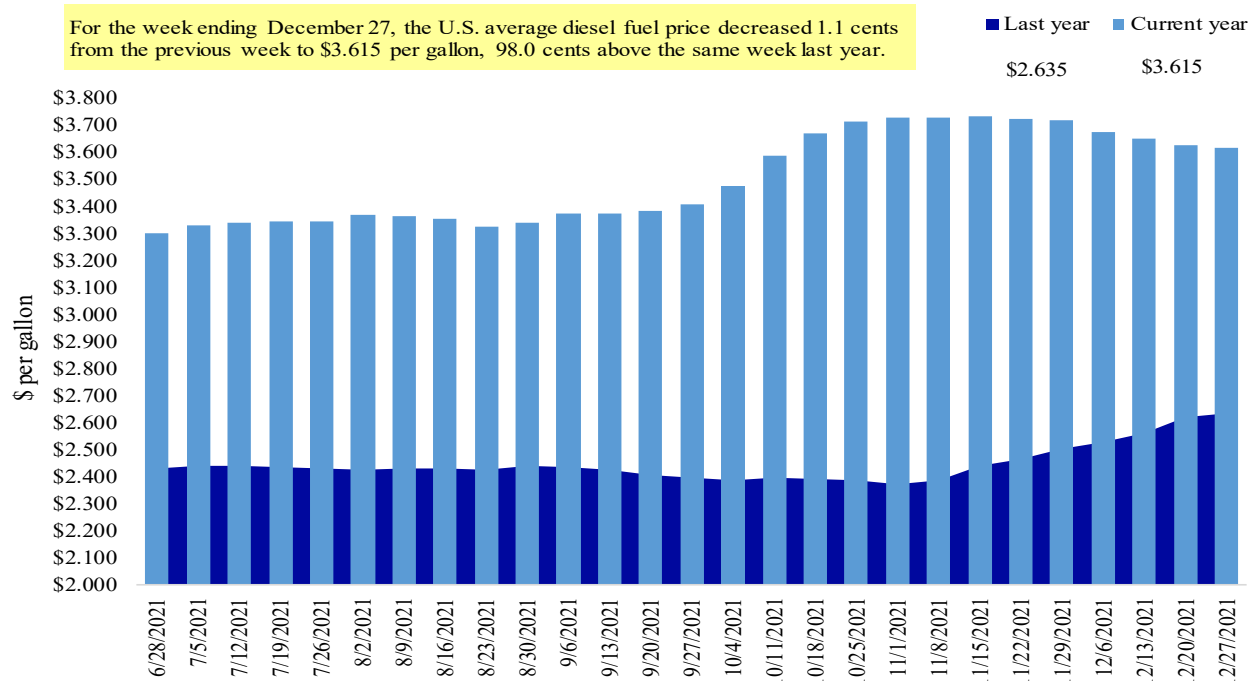
Region	Location	Price	Change from	
			Week ago	Year ago
I	East Coast	3.602	-0.009	0.943
	New England	3.623	-0.010	0.971
	Central Atlantic	3.779	-0.013	0.929
	Lower Atlantic	3.488	-0.008	0.954
II	Midwest	3.479	-0.013	0.894
III	Gulf Coast	3.330	-0.009	0.937
IV	Rocky Mountain	3.704	-0.027	1.116
	West Coast	4.371	-0.010	1.258
V	West Coast less California	3.917	-0.024	1.147
	California	4.771	0.003	1.372
Total	United States	3.615	-0.011	0.980

¹Diesel fuel prices include all taxes. Prices represent an average of all types of diesel fuel.

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

Figure 13

Weekly diesel fuel prices, U.S. average



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

Grain Exports

Table 12

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

For the week ending	Wheat					All wheat	Corn	Soybeans	Total
	HRW	SRW	HRS	SWW	DUR				
Export balances¹									
12/16/2021	2,213	727	1,263	893	36	5,132	26,748	13,648	45,528
This week year ago	1,661	496	1,596	2,633	128	6,514	29,342	19,256	55,112
Cumulative exports-marketing year²									
2021/22 YTD	3,978	1,555	2,914	1,958	97	10,503	12,746	27,277	50,526
2020/21 YTD	5,408	1,038	3,923	2,699	462	13,529	12,889	34,636	61,054
YTD 2021/22 as % of 2020/21	74	150	74	73	21	78	99	79	83
Last 4 wks. as % of same period 2020/21*	126	133	73	30	31	73	90	78	84
Total 2020/21	8,331	1,744	7,337	6,281	654	24,347	66,702	60,287	151,336
Total 2019/20	9,526	2,318	6,960	4,751	922	24,477	42,622	43,994	111,094

¹ Current unshipped (outstanding) export sales to date.

² Shipped export sales to date; 2021/22 marketing year now in effect for wheat, corn and soybeans.

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

Source: USDA, Foreign Agricultural Service.

Table 13

Top 5 importers¹ of U.S. corn

For the week ending 12/16/2021	Total commitments ²		% change current MY from last MY	Exports ³ 3-yr. avg. 2019-21
	2021/22 current MY	2020/21 last MY		
	1,000 mt -			
Mexico	11,761	9,690	21	14,817
Japan	3,494	5,233	(33)	11,082
China	12,215	11,564	6	7,920
Columbia	2,286	1,946	18	4,491
Korea	78	1,060	(93)	3,302
Top 5 importers	29,834	29,492	1	41,613
Total U.S. corn export sales	39,494	42,231	(6)	53,145
% of projected exports	62%	60%		
Change from prior week ²	983	651		
Top 5 importers' share of U.S. corn export sales	76%	70%		78%
USDA forecast December 2021	63,613	70,051	(9)	
Corn use for ethanol USDA forecast, December 2021	133,350	127,711	4	

¹ Based on USDA, Foreign Agricultural Service (FAS) marketing year ranking reports for 2020/21; marketing year (MY) = Sep 1 - Aug 31.

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

³ FAS marketing year ranking reports (carry over plus accumulated export); yr. = year; avg. = average.

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

Source: USDA, Foreign Agricultural Service.

Table 14

Top 5 importers¹ of U.S. soybeans

For the week ending 12/16/2021	Total commitments ²		% change current MY from last MY	Exports ³ 3-yr. avg. 2018-20
	2021/22 current MY	2020/21 last MY		
				- 1,000 mt -
China	22,998	31,723	(28)	21,666
Mexico	2,772	3,387	(18)	4,754
Egypt	1,845	1,755	5	3,093
Indonesia	703	1,040	(32)	2,325
Japan	1,166	1,134	3	2,275
Top 5 importers	29,484	39,040	(24)	34,113
Total U.S. soybean export sales	40,925	53,892	(24)	50,758
% of projected exports	73%	87%		
change from prior week ²	812	222		
Top 5 importers' share of U.S. soybean export sales	72%	72%		67%
USDA forecast, December 2021	55,858	61,717	(9)	

¹Based on USDA, Foreign Agricultural Service (FAS) marketing year ranking reports for 2020/21; marketing year (MY) = Sep 1 - Aug 31.

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

³FAS marketing year ranking reports (carry over plus accumulated export); yr. = year; avg. = average.

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

Source: USDA, Foreign Agricultural Service.

Table 15

Top 10 importers¹ of all U.S. wheat

For the week ending 12/16/2021	Total Commitments ²		% change current MY from last MY	Exports ³ 3-yr. avg. 2018-20
	2021/22 current MY	2020/21 last MY		
				- 1,000 mt -
Mexico	2,787	2,660	5	3,388
Philippines	2,384	2,531	(6)	3,121
Japan	1,871	1,933	(3)	2,567
Korea	975	1,410	(31)	1,501
Nigeria	1,595	1,009	58	1,490
China	848	2,198	(61)	1,268
Taiwan	602	857	(30)	1,187
Indonesia	66	767	(91)	1,131
Thailand	436	696	(37)	768
Italy	174	534	(67)	681
Top 10 importers	11,737	14,595	(20)	17,102
Total U.S. wheat export sales	15,635	20,043	(22)	24,617
% of projected exports	68%	74%		
change from prior week ²	425	394		
Top 10 importers' share of U.S. wheat export sales	75%	73%		69%
USDA forecast, December 2021	22,888	27,030	(15)	

¹Based on USDA, Foreign Agricultural Service(FAS) marketing year ranking reports for 2020/21; Marketing year (MY) = Jun 1 - May 31.

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

³FAS marketing year final reports (carry over plus accumulated export); yr. = year; avg. = average.

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

Source: USDA, Foreign Agricultural Service.

Table 16

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

Port regions	For the week ending 12/23/21	Previous week*	Current week as % of previous	2021 YTD*	2020 YTD*	2021 YTD as % of 2020 YTD	Last 4-weeks as % of:		2020 total*
							Last year	Prior 3-yr. avg.	
Pacific Northwest									
Wheat	127	68	187	13,197	15,670	84	41	40	15,966
Corn	153	234	65	13,201	9,768	135	85	114	9,969
Soybeans	419	493	85	14,042	13,765	102	87	172	14,028
Total	698	794	88	40,440	39,203	103	75	108	39,963
Mississippi Gulf									
Wheat	22	17	124	3,134	3,405	92	128	48	3,422
Corn	354	497	71	38,106	28,204	135	85	93	28,781
Soybeans	973	960	101	26,136	37,126	70	72	108	38,013
Total	1,348	1,475	91	67,376	68,735	98	75	102	70,215
Texas Gulf									
Wheat	119	1	n/a	3,870	4,248	91	170	85	4,248
Corn	20	0	n/a	612	723	85	100	95	723
Soybeans	0	1	n/a	1,610	2,000	81	6	17	2,098
Total	139	2	n/a	6,092	6,971	87	41	61	7,068
Interior									
Wheat	17	94	18	2,936	2,233	131	83	104	2,263
Corn	180	226	79	9,934	8,565	116	124	140	8,683
Soybeans	146	150	97	6,417	7,160	90	95	111	7,274
Total	343	471	73	19,287	17,959	107	105	123	18,220
Great Lakes									
Wheat	1	43	3	511	891	57	90	54	891
Corn	0	23	0	145	111	130	61	182	111
Soybeans	40	0	n/a	592	1,111	53	16	32	1,111
Total	41	66	62	1,248	2,113	59	38	52	2,113
Atlantic									
Wheat	0	0	n/a	128	65	196	n/a	n/a	65
Corn	0	3	17	85	33	256	n/a	109	33
Soybeans	82	104	79	2,158	1,856	116	91	163	1,870
Total	83	107	77	2,370	1,954	121	92	163	1,968
U.S. total from ports*									
Wheat	286	223	128	23,776	26,512	90	63	54	26,854
Corn	706	984	72	62,081	47,404	131	92	107	48,301
Soybeans	1,660	1,708	97	50,955	63,019	81	73	119	64,394
Total	2,652	2,915	91	136,812	136,935	100	76	105	139,548

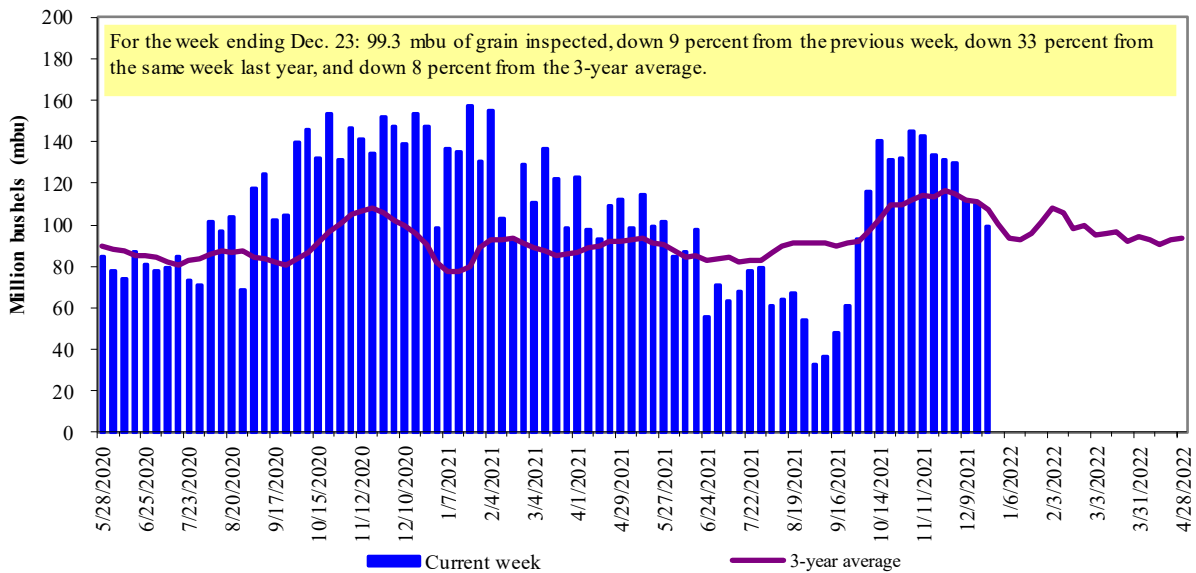
*Data includes revisions from prior weeks; some regional totals may not add exactly due to rounding.

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

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 2020.

Figure 14

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

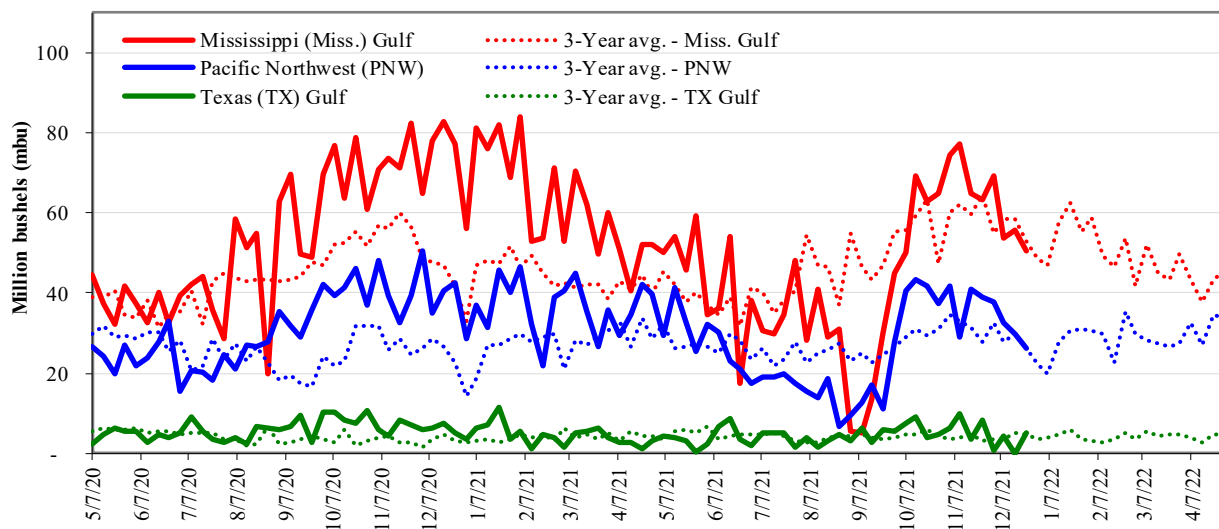


Note: 3-year average consists of 4-week running average.

Source: USDA, Federal Grain Inspection Service.

Figure 15

U.S. Grain inspections: U.S. Gulf and PNW¹ (wheat, corn, and soybeans)



Week ending 12/23/21 inspections (mbu):		Percent change from:			
MS Gulf:	50.5	Last wk:	down 9	TX Gulf	up 8477
PNW:	26.0	Last Year (same wk):	down 35	U.S. Gulf	unchanged
TX Gulf:	5.1	3-yr avg.(4-wk. mov. Avg):	down 10	PNW	down 13
					down 39
					down 10

Source: USDA, Federal Grain Inspection Service.

Ocean Transportation

Table 17

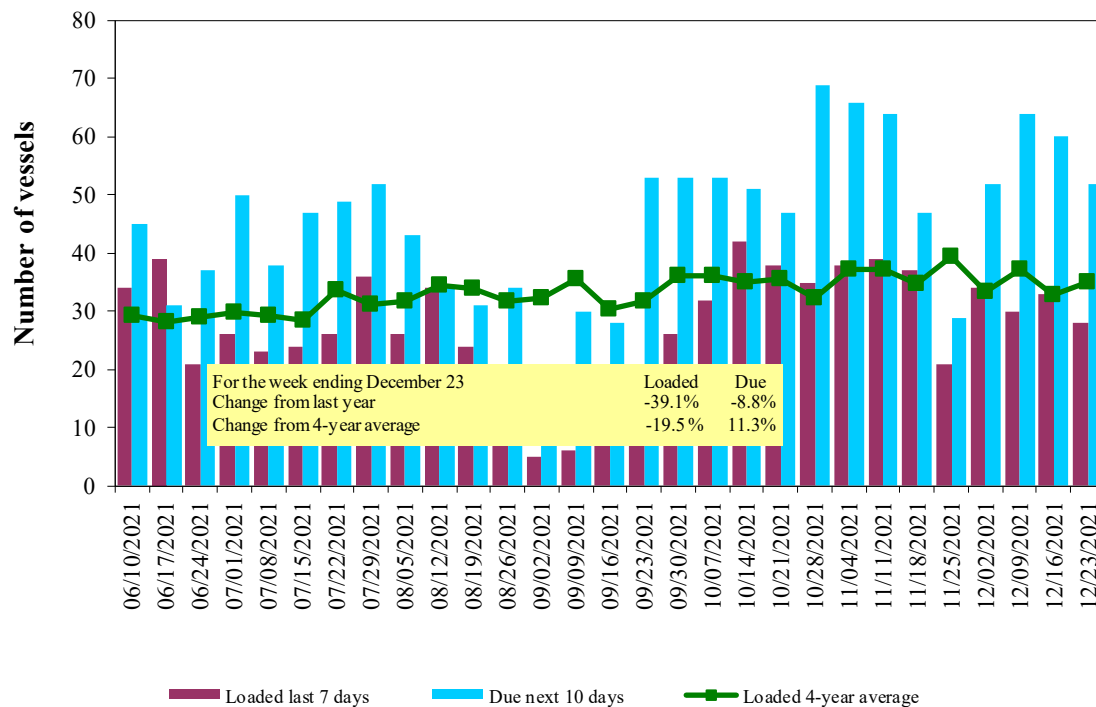
Weekly port region grain ocean vessel activity (number of vessels)

Date	In port	Gulf		Pacific Northwest
		Loaded 7-days	Due next 10-days	In port
12/23/2021	41	28	52	21
12/16/2021	33	33	60	21
2020 range	(22...60)	(23...46)	(34...68)	(7...24)
2020 average	37	33	49	15

Source: USDA, Agricultural Marketing Service.

Figure 16

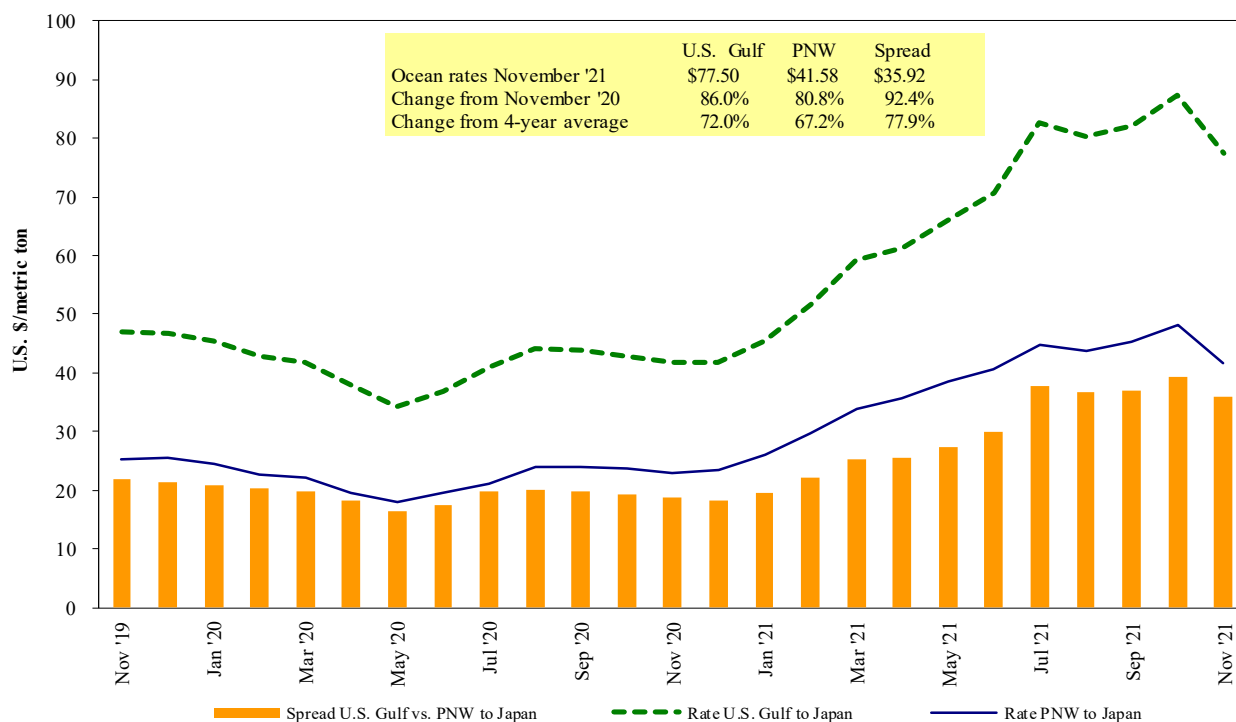
U.S. Gulf¹ vessel loading activity



¹U.S. Gulf includes Mississippi, Texas, and East Gulf.
 Source: USDA, Agricultural Marketing Service.

Figure 17

Grain vessel rates, U.S. to Japan



Note: PNW = Pacific Northwest

Source: O'Neil Commodity Consulting

Table 18

Ocean freight rates for selected shipments, week ending 12/25/2021

Export region	Import region	Grain types	Loading date	Volume loads (metric tons)	Freight rate (US\$/metric ton)
U.S. Gulf	Japan	Heavy grain	Oct 1/10, 2021	48,000	70.10
U.S. Gulf	Japan	Heavy grain	Aug 21/Sep 9, 2021	50,000	60.90
U.S. Gulf	Japan	Heavy grain	Aug 1/10, 2021	50,000	69.75
U.S. Gulf	Sudan	Wheat	Sep 1/10, 2021	49,000	79.12*
U.S. Gulf	China	Heavy grain	Dec 1/10, 2021	65,000	76.00
U.S. Gulf	China	Heavy grain	Nov 1/10, 2021	66,000	89.00
U.S. Gulf	China	Heavy grain	Oct 1/10, 2021	55,000	81.50
U.S. Gulf	Djibouti	Wheat	Jul 6/16, 2021	5,880	85.70*
U.S. Gulf	S. Korea	Heavy grain	Dec 1/10, 2021	51,000	940.00
PNW	Japan	Wheat	Sep 1, 2021	52,170	56.55*
PNW	Japan	Wheat	Jul 25/ Aug 5, 2021	32,590	64.00
PNW	Taiwan	Wheat	Nov 1/10, 2021	49,580	67.30
PNW	Taiwan	Heavy grain	Aug 20/30, 2021	35,000	64.20*
PNW	Taiwan	Wheat	Aug 1/10, 2021	55,000	54.95
Brazil	N. China	Heavy grain	Jan 1/5, 2022	64,000	58.25
Australia	Japan	Barley	Nov 1/10, 2021	55,000	65.50
River Plate	South Korea	Corn	Oct 21, 2021	67,000	79.80

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

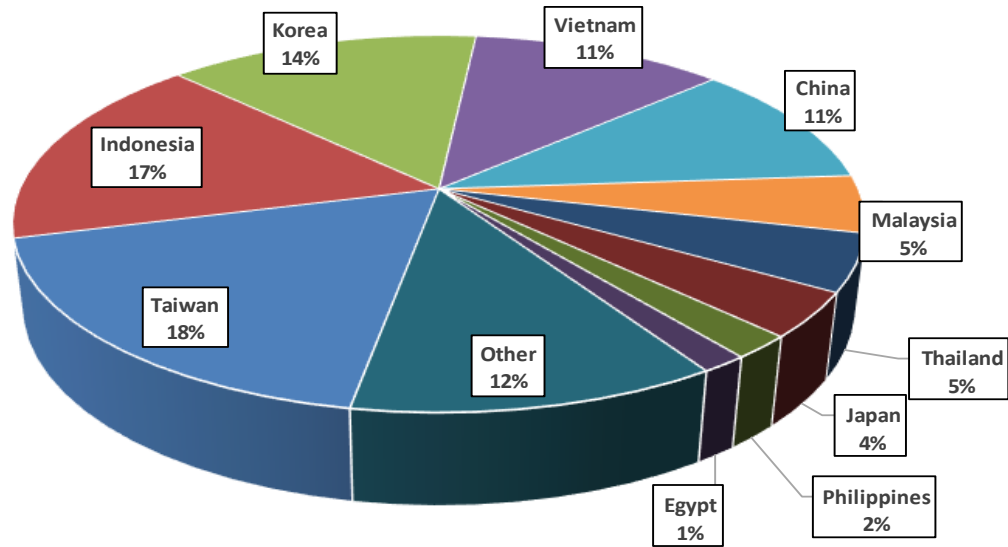
Note: Rates shown are per metric ton (2,204.62 lbs. = 1 metric ton), free on board (F.O.B), except where otherwise indicated;

op = option.

Source: Maritime Research, Inc.

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

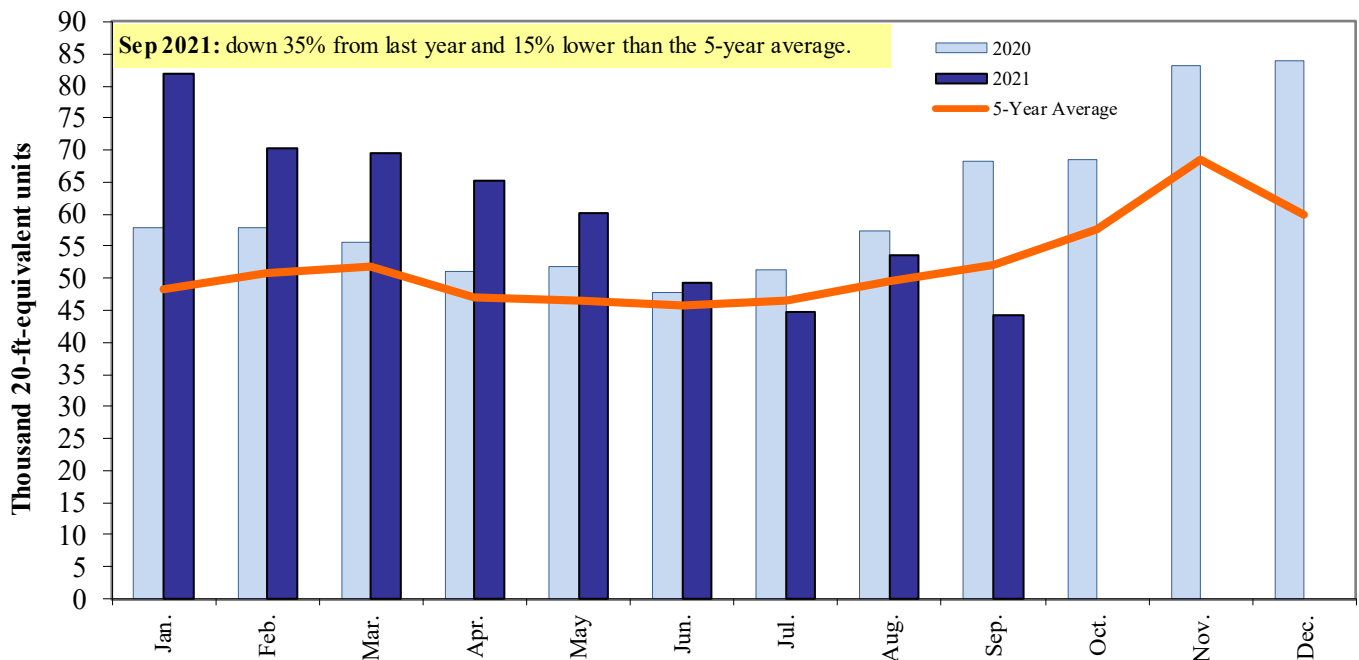
Figure 18
Top 10 destination markets for U.S. containerized grain exports, Jan-Sep 2021



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

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

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



Note: The following Harmonized Tariff Codes are used to calculate containerized grains movements: 100190, 100200, 100300, 100400, 100590, 100700, 110100, 110220, 110290, 1201, 120100, 120190, 120810, 230210, 230310, 230330, and 230990.

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

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