



# Grain Transportation Report

A weekly publication of the Agricultural Marketing Service  
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## WEEKLY HIGHLIGHTS

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### Grain Vessel Loading Activity Remains Strong as Ocean Freight Rates Tick Up

Ocean-going grain vessel loading activity remained strong in the U.S. Gulf (Gulf) and the Pacific Northwest (PNW) despite an increase in the ocean freight rates for shipping bulk commodities, including grains. During the 4-week period beginning November 10 and ending December 1, an average of 50 vessels were loaded in the Gulf, with 77 vessels expected within the next 10 days. During the same period, 21 vessels were at berth in the PNW. Meanwhile, the ocean freight rate for shipping bulk grain from the Gulf to Japan was \$37 per metric ton (mt) during the week ending December 1, a 16 percent increase over the week ending November 10. The cost of shipping from the PNW to Japan was \$20 per mt, a 13 percent increase compared to November 10. According to a December 1 *Transportation and Export* report by O'Neil Commodity Consulting, increased iron ore and coal shipments to China caused the rate increase. Those imports have both increased 9 and 12 percent year to year, respectively. However, it is unlikely that the rate hike is sustainable, as excess vessel supply still exists in the market.

### STB Final Decision on Performance Data Reporting

On November 30, the Surface Transportation Board (STB) adopted a [final rule](#) requiring all Class I railroads to report certain service performance metrics on a weekly, semiannual, and occasional basis. STB first opened the proceeding (EP 724) with a public hearing in April 2014 to understand issues pertaining to the rail service problems emerging in late 2013. In October 2014, STB issued an interim data collection order and then examined new regulations for permanent reporting over the next 2 years. As described in the recent decision, "The primary purpose of this rulemaking has been to develop a set of performance data that will allow the agency to monitor current service conditions in the industry and to identify trends or aberrations, which may indicate problems. ... A corollary benefit is that shippers and other stakeholders will have access to the reported data to assist in their business decisions and supply-chain planning." The rule becomes effective January 29, 2017, with reporting to begin February 8.

### Boost in Pacific Northwest Grain Inspections Help Total

For the week ending December 1, [total inspections of grain](#) (corn, wheat, and soybeans) for export from major U.S. export regions reached 3.56 million metric tons (mmt), up 6 percent from the previous week, up 41 percent from last year, and 16 percent above the 3-year average. Inspections of wheat and corn jumped 85 and 39 percent from the previous week, but soybean inspections dropped 15 percent from the past week. PNW grain inspections increased 57 percent from the previous week as shipments increased to China, Japan, and the Philippines. Mississippi Gulf inspections, however, decreased 8 percent from the previous week. Outstanding export sales (unshipped) were up for wheat but down for corn and soybeans.

### Snapshots by Sector

#### Export Sales

During the week ending November 24, [unshipped balances](#) of wheat, corn, and soybeans totaled 42.3 mmt, up 50 percent from the same time last year. Net weekly [wheat export sales](#) were .482 mmt, down 32 percent from the previous week. Net [corn export sales](#) were .747 mmt, down 55 percent from the previous week, and net [soybean export sales](#) were 1.40 mmt, down 25 percent from the past week.

#### Rail

U.S. Class I railroads originated 22,438 [grain carloads](#) for the week ending November 26, down 13 percent from the previous week, up 20 percent from last year, and up 10 percent from the 3-year average.

Average December shuttle [secondary railcar bids/offers](#) per car were \$33 below tariff for the week ending December 1, up \$18 from last week, and \$192 higher than last year. Average non-shuttle secondary railcar bids/offers per car were \$109 below tariff, down \$26 from last week, and \$28 higher than last year.

#### Barge

For the week ending December 3, [barge grain movements](#) totaled 1,058,591 tons, 15 percent lower than last week, and up 35 percent from the same period last year.

For the week ending December 3, 683 grain barges [moved down river](#), down 15 percent from last week, 1,007 grain barges were [unloaded in New Orleans](#), down 3 percent from the previous week.

#### Ocean

For the week ending December 1, 50 [ocean-going grain vessels](#) were loaded in the Gulf, 19 percent more than the same period last year. Seventy-five vessels are expected to be loaded within the next 10 days, 9 percent more than the same period last year.

For the week ending December 1, the ocean freight rate for shipping bulk grain from the Gulf to Japan was \$37 per metric ton, 4 percent more than the previous week. The cost of shipping from the PNW to Japan was \$20 per metric ton, 4 percent more than the previous week.

#### Fuel

During the week ending December 5, U.S. average [diesel fuel prices](#) were up 6 cents from the previous week at \$2.48 per gallon, 10 cents higher than the same week last year.

# Feature Article/Calendar

## Transportation of Fertilizer: 2016 Update

Fertilizer is an essential input for profitable agricultural production that relies upon a vast transportation system for farmers to get the fertilizer they need, when and where they need it. Fertilizer is transported in solid or liquid form from its point of origin or production location. Before arriving at the farm, fertilizer products will likely have been transported by more than one mode of transportation. It is transported by rail cars, river barges, trucks, or as gas or liquid in pipelines. This article updates the data and analysis of fertilizer movements by rail and barges from a previous article published in April 18, 2013 edition of the *Grain Transportation Report*.

The United States is one of the world's largest importers of fertilizers, which helps supplement its domestic use of nitrogen and potash.<sup>1</sup> Canada has been the largest originating country for U.S. fertilizer imports for more than 20 years. In 2012, the value of major U.S. fertilizer products imported was about \$13 billion. About \$5 billion that total were imported from Canada. The United States also imports from Egypt, Chile, Kuwait, and China.<sup>2</sup>

### Rail

Table 1 shows railroads hauled an annual average of 58 million tons of fertilizer and fertilizer ingredients per year from 2005 to 2014. Over the 10-year period, total fertilizer shipments fluctuated between 49 million and 66 million tons annually, with a slight downward trend. Fertilizer ingredient shipments increased from 54 percent of the total in 2005 to 58 percent in 2014. Liquid fertilizer shipments increased from 19 percent of the total in 2005 to 22 percent in 2014. On the other hand, rail movements of anhydrous ammonia, a toxic-by-inhalation hazardous material,

**Table 1: Fertilizer shipped by rail, 2005-2014 (1,000 tons)**

Year	Dry fertilizer	Fertilizer ingredients	Anhydrous ammonia	Liquid fertilizer	Total
2005	13,773	34,770	3,662	11,926	64,131
2006	11,489	32,177	3,836	12,019	59,521
2007	12,242	37,333	3,523	13,203	66,301
2008	10,074	31,242	2,902	12,776	56,995
2009	9,760	25,985	1,831	11,460	49,036
2010	11,128	31,778	1,992	12,373	57,271
2011	11,533	31,170	1,791	13,142	57,637
2012	10,530	30,761	1,564	13,536	56,391
2013	10,446	33,952	1,557	13,003	58,959
2014	9,910	33,674	1,416	12,925	57,925
10-Yr Avg.	11,089	32,284	2,408	12,636	58,417

Source: USDA analysis of Surface Transportation Board Confidential Waybill Samples

decreased from 3.7 million tons to 1.4 million tons (6 percent to 2 percent of the total) during the same time period. Dry fertilizer shipments also dropped from 13.8 million tons (22 percent of the total) in 2005 to 9.9 million tons (17 percent) in 2014.

### Barge

Table 2 (see next page) shows 2005-2014 fertilizer barge traffic by month and year, based on delivery date of the shipment. On average, railroads handled almost five times as much in fertilizer movements as barges. However, while fertilizer shipments by barge have increased since 2010, shipments by rail have been stable (around 57.5 million tons) during the same time (tables 1 and 2). Overall, March through May is the busiest period for delivering fertilizer by barges. This corresponds to the typical planting window for corn in many States.<sup>3</sup> April usually has the highest volume of shipments, with a 10-year average shipment of 1.5 million tons. Annual total shipments have continuously increased since 2010 and reached 16.8 million tons in 2014 (about a 30 percent increase).

The leading origin of barged fertilizers is the Baton Rouge-New Orleans area, which accounts for 79 percent of barged fertilizer for all U.S. inland waterways from 2005 to 2014.

<sup>1</sup> USDA/ERS, Fertilizer Imports/Exports, <https://www.ers.usda.gov/data-products/fertilizer-importsexports/summary-of-the-data-findings.aspx>.

<sup>2</sup> See fertilizer product selection here: <https://www.ers.usda.gov/data-products/fertilizer-importsexports.aspx>.

<sup>3</sup> USDA/NASS, *Field Crops: Usual Planting and Harvesting Dates*, October 2010.

Baton Rouge-New Orleans often receives fertilizers via Florida, which are either domestically produced or imported to Florida from foreign origins. Also, Baton Rouge-New Orleans receives imports directly from foreign origins.

The leading fertilizer shipped up-bound from New Orleans by barge is urea (about 41 percent). About 20 percent of barged fertilizers are delivered to the Upper Mississippi River (above St. Louis, MO), which is the leading destination for barged fertilizer. Fertilizers can use the same barge as down-bound grain and are often a backhaul commodity instead of sending an empty barge up-bound. The second leading river area for fertilizer deliveries is the Ohio River, with about 19 percent of all deliveries. Other important delivery points are the McClellan-Kerr Arkansas River System, and the Lower Mississippi (e.g., Cairo, IL, and other points south).

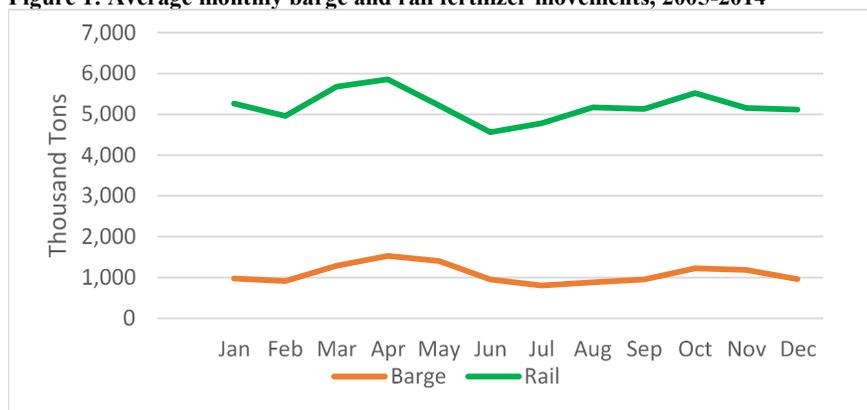
**Table 2: Average monthly barge fertilizer movements, by month, 2005-2014, 10-year average (1,000 tons)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	10-Yr. Avg.
<b>Jan</b>	888	1,028	919	963	754	822	1,073	1,072	1,174	1,049	974
<b>Feb</b>	791	809	785	867	944	895	700	1,087	1,171	1,061	911
<b>Mar</b>	1,350	1,158	1,451	1,005	956	1,040	1,386	1,547	1,462	1,538	1,289
<b>Apr</b>	1,510	1,362	1,465	1,154	1,178	1,624	1,553	1,709	1,696	2,023	1,527
<b>May</b>	1,395	1,191	1,472	1,333	900	1,124	1,337	1,383	1,745	2,175	1,405
<b>Jun</b>	969	806	911	1,039	841	907	1,189	759	1,082	1,003	951
<b>Jul</b>	766	672	816	997	734	714	897	758	924	768	805
<b>Aug</b>	771	590	858	989	750	893	998	842	955	1,183	883
<b>Sep</b>	702	796	918	782	779	888	931	1,106	1,021	1,563	949
<b>Oct</b>	761	846	1,231	948	739	1,381	1,389	1,641	1,489	1,780	1,220
<b>Nov</b>	1,099	913	1,061	719	987	1,349	1,280	1,420	1,583	1,429	1,184
<b>Dec</b>	816	717	952	523	867	1,258	937	1,155	1,039	1,280	954
<b>Annual</b>	11,816	10,887	12,838	11,319	10,429	12,896	13,671	14,480	15,341	16,850	13,053

Source: Detailed Origin-Destination Waterborne Commerce Statistics, U.S. Army Corps of Engineers

Figure 1 shows 10-year monthly average tonnages for fertilizer by rail and all barges. On average, rail moved about 5 million tons of fertilizer every month and barges moved about 1 million tons.

**Figure 1: Average monthly barge and rail fertilizer movements, 2005-2014**



demonstrated peaks in spring and fall months. The primary peak was in April, as many farmers are getting ready to plant corn and soybeans, with an average tonnage of 5.8 million tons for rail and 1.5 million tons for barges. The second peak was in October with an average of 5.5 million tons for rail and 1.2 million for barge movements.

Source: U.S. Army Corps of Engineers, STB Waybill Samples

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# Grain Transportation Indicators

Table 1

**Grain Transport Cost Indicators<sup>1</sup>**

For the week ending	Truck	Rail		Barge	Ocean	
		Unit Train	Shuttle		Gulf	Pacific
12/07/16	166	255	207	129	165	142
11/30/16	162	256	205	133	159	137

<sup>1</sup>Indicator: Base year 2000 = 100; Weekly updates include truck = diesel (\$/gallon); rail = near-month secondary rail market bid and monthly tariff rate with fuel surcharge (\$/car); barge = Illinois River barge rate (index = percent of tariff rate); and ocean = routes to Japan (\$/metric ton)

Source: Transportation & Marketing Programs/AMS/USDA

Table 2

**Market Update: U.S. Origins to Export Position Price Spreads (\$/bushel)**

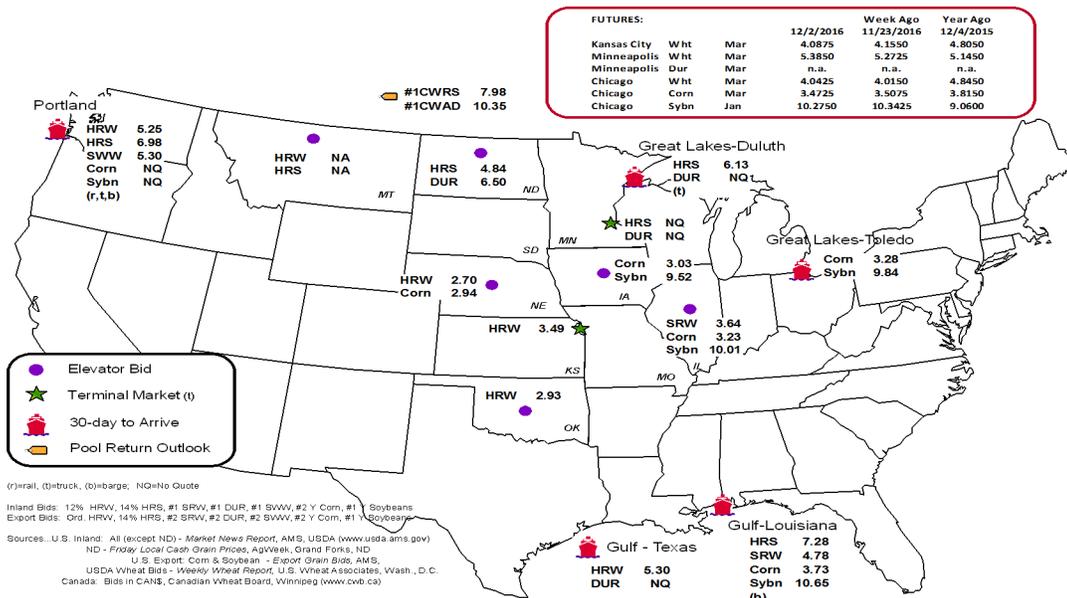
Commodity	Origin--Destination	12/2/2016	11/23/2016
Corn	IL--Gulf	-0.50	-0.49
Corn	NE--Gulf	-0.79	-0.82
Soybean	IA--Gulf	-1.13	-0.99
HRW	KS--Gulf	-1.81	n/a
HRS	ND--Portland	-2.14	n/a

Note: nq = no quote

Source: Transportation & Marketing Programs/AMS/USDA

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

Figure 1  
**Grain bid Summary**



# Rail Transportation

Table 3

## Rail Deliveries to Port (carloads)<sup>1</sup>

For the Week Ending	Mississippi		Pacific	Atlantic &	Total	Week ending	Cross-Border Mexico <sup>3</sup>
	Gulf	Texas Gulf	Northwest	East Gulf			
11/30/2016 <sup>p</sup>	977	2,559	7,813	1,083	12,432	11/26/2016	1,934
11/23/2016 <sup>r</sup>	1,336	1,870	7,926	1,102	12,234	11/19/2016	2,916
2016 YTD <sup>r</sup>	33,908	78,771	274,677	24,885	412,241	2016 YTD	100,070
2015 YTD <sup>r</sup>	28,007	54,935	218,760	24,363	326,065	2015 YTD	90,697
2016 YTD as % of 2015 YTD	121	143	126	102	126	% change YTD	110
Last 4 weeks as % of 2015 <sup>2</sup>	265	163	122	127	137	Last 4wks % 2015	136
Last 4 weeks as % of 4-year avg. <sup>2</sup>	114	188	129	115	133	Last 4wks % 4 yr	136
Total 2015	29,054	60,819	239,029	26,730	355,632	Total 2015	97,736
Total 2014	44,617	83,674	256,670	32,107	417,068	Total 2014	98,422

<sup>1</sup> Data is incomplete as it is voluntarily provided

<sup>2</sup> Compared with same 4-weeks in 2015 and prior 4-year average.

<sup>3</sup> Cross-border weekly data is approximately 15 percent below the Association of American Railroads' reported weekly carloads received by Mexican railroads to reflect switching between KCSM and FerroMex.

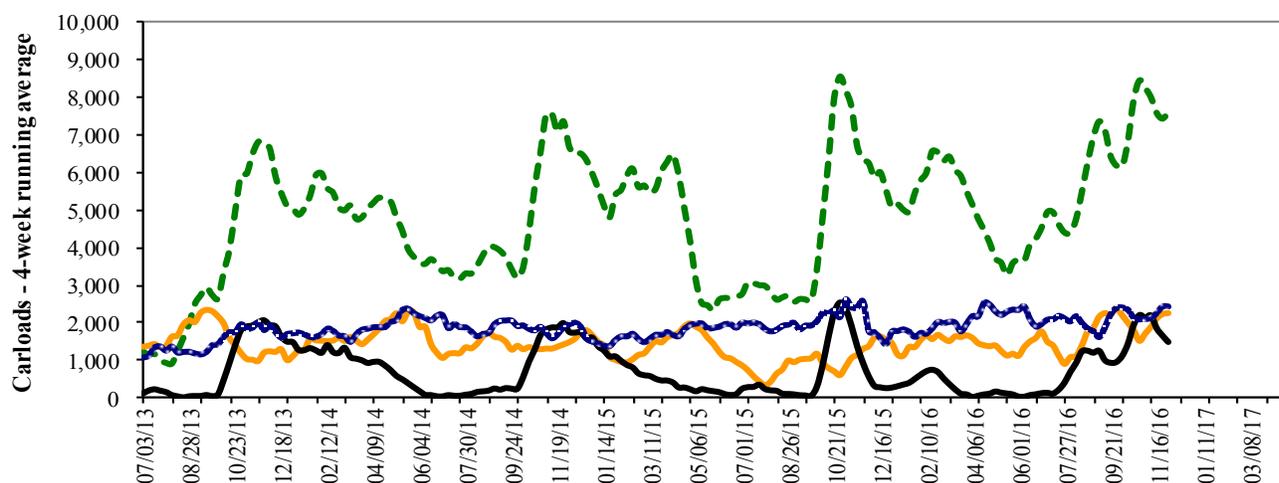
**YTD = year-to-date; p = preliminary data; r = revised data; n/a = not available**

Source: Transportation & Marketing Programs/AMS/USDA

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



- - - Pacific Northwest: 4 wks. ending 11/30--up 22% from same period last year; up 29% from 4-year average  
— Texas Gulf: 4 wks. ending 11/30--up 63% from same period last year; up 88% from 4-year average  
— Miss. River: 4 wks. ending 11/30--up 165% from same period last year; up 14% from 4-year average  
. . . Cross-border: 4 wks. ending 11/26--up 36% from same period last year; up 36% from 4-year average

Source: Transportation & Marketing Programs/AMS/USDA

Table 4

**Class I Rail Carrier Grain Car Bulletin (grain carloads originated)**

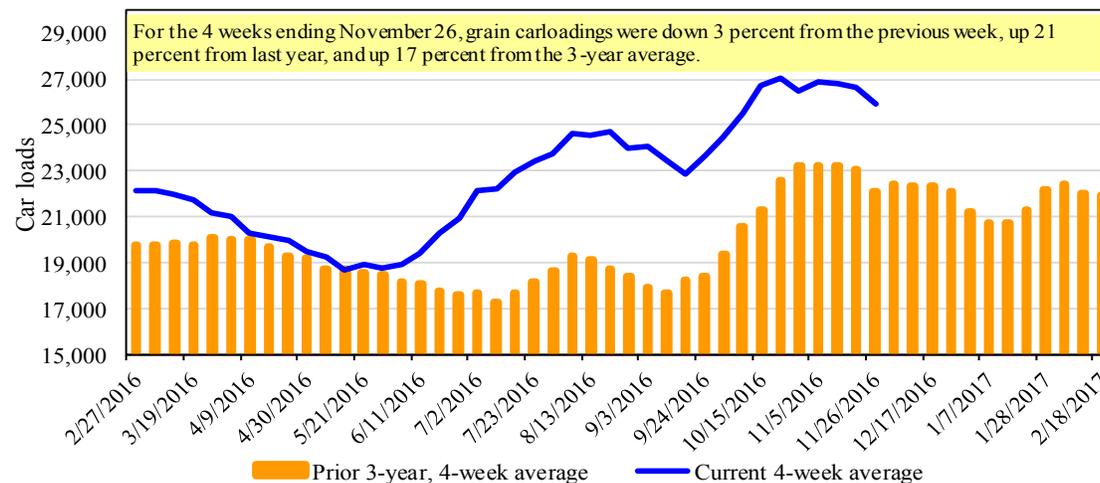
For the week ending: 11/26/2016	East		West			U.S. total	Canada	
	CSXT	NS	BNSF	KCS	UP		CN	CP
This week	1,377	2,577	11,849	473	6,162	22,438	4,242	5,049
This week last year	1,308	2,385	10,299	291	4,377	18,660	3,942	4,632
2016 YTD	85,596	136,135	532,302	40,803	272,034	1,066,870	174,208	211,511
2015 YTD	94,194	136,161	481,957	41,524	243,180	997,016	192,054	213,441
2016 YTD as % of 2015 YTD	91	100	110	98	112	107	91	99
Last 4 weeks as % of 2015*	120	130	115	115	131	121	105	102
Last 4 weeks as % of 3-yr avg**	92	106	128	90	120	117	94	94
Total 2015	104,039	149,191	536,173	45,445	267,720	1,102,568	210,957	236,263

\*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.

Source: Association of American Railroads (www.aar.org)

Figure 3

**Total Weekly U.S. Class I Railroad Grain Car Loadings**

Source: Association of American Railroads

Table 5

**Railcar Auction Offerings<sup>1</sup> (\$/car)<sup>2</sup>**

For the week ending: 12/1/2016		Delivery period							
		Dec-16	Dec-15	Jan-17	Jan-16	Feb-17	Feb-16	Mar-17	Mar-16
BNSF <sup>3</sup>	COT grain units	no bids	no bids	no bids	no bids	no bids	no bids	no bids	no bids
	COT grain single-car <sup>5</sup>	0	no bids	5	0	1	no bids	no bids	no bids
UP <sup>4</sup>	GCAS/Region 1	no bids	no bids	no bids	no bids	no bids	no bids	n/a	n/a
	GCAS/Region 2	no bids	no bids	no bids	no bids	no bids	no bids	n/a	n/a

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

<sup>2</sup>Average premium/discount to tariff, last auction

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

<sup>4</sup>UP - GCAS = Grain Car Allocation System

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

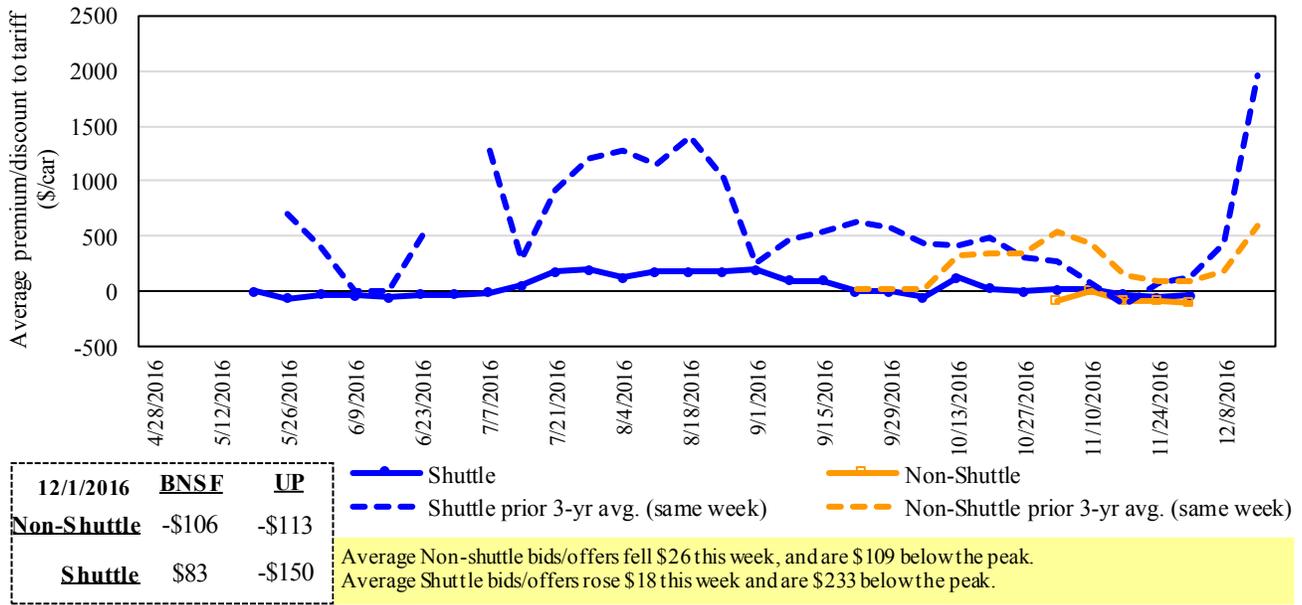
Region 2 includes: CO, IA, KS, MN, NE, WY, and Kansas City and St. Joseph, MO.

<sup>5</sup>Range is shown because average is not available. Not available = n/a.

Source: Transportation & Marketing Programs/AMS/USDA.

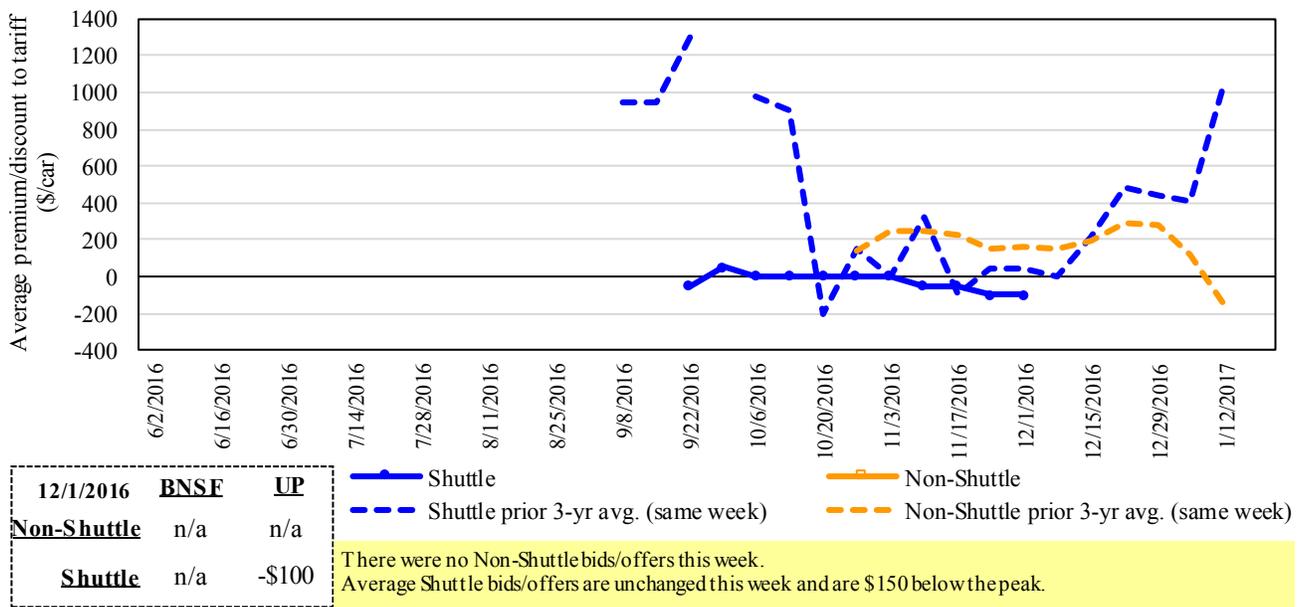
The **secondary rail market** information reflects trade values for service that was originally purchased from the railroad carrier as some form of guaranteed freight. The **auction and secondary rail** values are indicators of rail service quality and demand/supply.

**Figure 4**  
**Bids/Offers for Railcars to be Delivered in December 2016, Secondary Market**



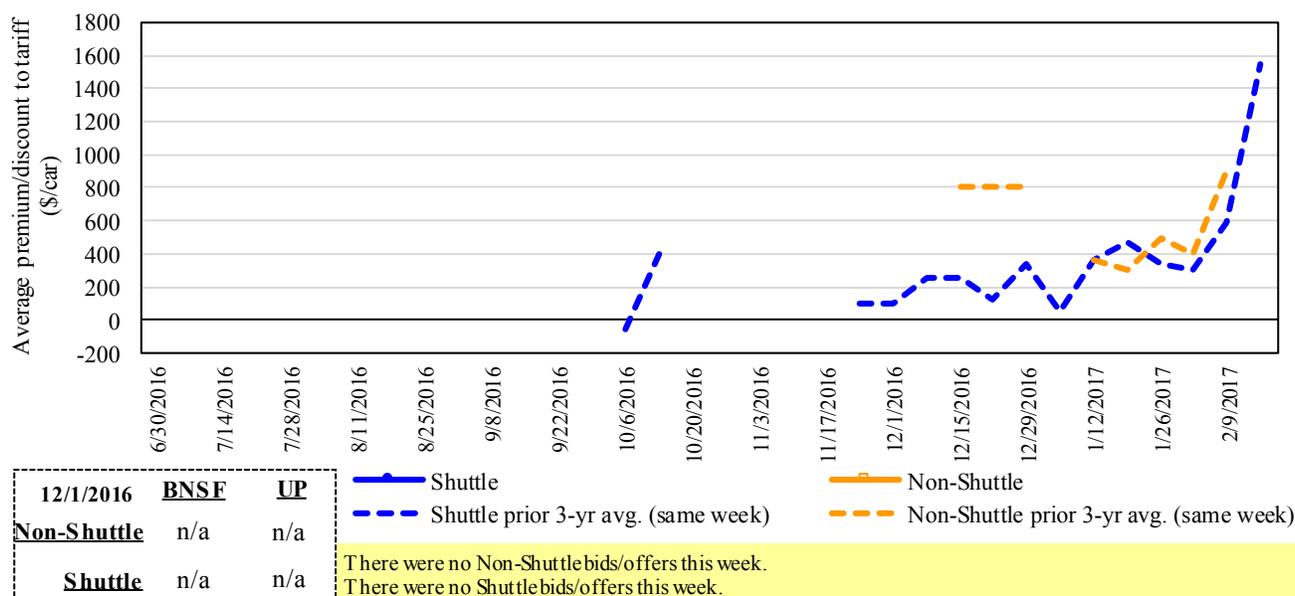
Non-shuttle bids include unit-train and single-car bids. n/a = not available.  
 Source: Transportation & Marketing Programs/AMS/USDA

**Figure 5**  
**Bids/Offers for Railcars to be Delivered in January 2017, Secondary Market**



Non-shuttle bids include unit-train and single-car bids. n/a = not available.  
 Source: Transportation & Marketing Programs/AMS/USDA

**Figure 6**  
**Bids/Offers for Railcars to be Delivered in February 2017, Secondary Market**



	12/1/2016	BNSF	UP
<b>Non-Shuttle</b>	n/a	n/a	n/a
<b>Shuttle</b>	n/a	n/a	n/a

—●— Shuttle  
- - - Shuttle prior 3-yr avg. (same week)  
—■— Non-Shuttle  
- - - Non-Shuttle prior 3-yr avg. (same week)

There were no Non-Shuttle bids/offers this week.  
There were no Shuttle bids/offers this week.

Non-shuttle bids include unit-train and single-car bids. n/a = not available.  
 Source: Transportation & Marketing Programs/AMS/USDA

Table 6  
**Weekly Secondary Railcar Market (\$/car)<sup>1</sup>**

For the week ending:		Delivery period					
		12/1/2016	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17
Non-shuttle	<b>BNSF-GF</b>	<b>(106)</b>	n/a	n/a	n/a	n/a	n/a
	Change from last week	(63)	n/a	n/a	n/a	n/a	n/a
	Change from same week 2015	19	n/a	n/a	n/a	n/a	n/a
	<b>UP-Pool</b>	<b>(113)</b>	n/a	n/a	n/a	n/a	n/a
	Change from last week	12	n/a	n/a	n/a	n/a	n/a
	Change from same week 2015	38	n/a	n/a	n/a	n/a	n/a
Shuttle	<b>BNSF-GF</b>	<b>83</b>	n/a	n/a	n/a	n/a	n/a
	Change from last week	27	n/a	n/a	n/a	n/a	n/a
	Change from same week 2015	283	n/a	n/a	n/a	n/a	n/a
	<b>UP-Pool</b>	<b>(150)</b>	<b>(100)</b>	n/a	n/a	n/a	n/a
	Change from last week	8	0	n/a	n/a	n/a	n/a
	Change from same week 2015	100	n/a	n/a	n/a	n/a	n/a

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

Note: Bids listed are market INDICATORS only & are NOT guaranteed prices,

n/a = not available; GF = guaranteed freight; Pool = guaranteed pool

Sources: Transportation and Marketing Programs/AMS/USDA

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

The **tariff rail rate** is the base price of freight rail service, and together with **fuel surcharges** and any **auction and secondary rail** values constitute 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. High auction and secondary rail values, during times of high rail demand or short supply, can exceed the cost of the tariff rate plus fuel surcharge.

Table 7

**Tariff Rail Rates for Unit and Shuttle Train Shipments<sup>1</sup>**

December, 2016	Origin region*	Destination region*	Tariff rate/car	Fuel surcharge per car	Tariff plus surcharge per:		Percent change Y/Y <sup>3</sup>
					metric ton	bushel <sup>2</sup>	
<b>Unit train</b>							
Wheat	Wichita, KS	St. Louis, MO	\$3,770	\$40	\$37.84	\$1.03	4
	Grand Forks, ND	Duluth-Superior, MN	\$4,143	-\$3	\$41.11	\$1.12	16
	Wichita, KS	Los Angeles, CA	\$6,950	-\$15	\$68.86	\$1.87	0
	Wichita, KS	New Orleans, LA	\$4,408	\$71	\$44.48	\$1.21	4
	Sioux Falls, SD	Galveston-Houston, TX	\$6,486	-\$13	\$64.28	\$1.75	0
	Northwest KS	Galveston-Houston, TX	\$4,676	\$78	\$47.21	\$1.28	3
	Amarillo, TX	Los Angeles, CA	\$4,875	\$109	\$49.49	\$1.35	3
Corn	Champaign-Urbana, IL	New Orleans, LA	\$3,681	\$80	\$37.35	\$0.95	0
	Toledo, OH	Raleigh, NC	\$6,061	\$0	\$60.19	\$1.53	0
	Des Moines, IA	Davenport, IA	\$2,258	\$17	\$22.59	\$0.57	4
	Indianapolis, IN	Atlanta, GA	\$5,191	\$0	\$51.55	\$1.31	4
	Indianapolis, IN	Knoxville, TN	\$4,311	\$0	\$42.81	\$1.09	0
	Des Moines, IA	Little Rock, AR	\$3,534	\$50	\$35.59	\$0.90	2
	Des Moines, IA	Los Angeles, CA	\$5,202	\$146	\$53.11	\$1.35	3
Soybeans	Minneapolis, MN	New Orleans, LA	\$3,639	\$45	\$36.58	\$1.00	-2
	Toledo, OH	Huntsville, AL	\$5,051	\$0	\$50.16	\$1.37	0
	Indianapolis, IN	Raleigh, NC	\$6,178	\$0	\$61.35	\$1.67	0
	Indianapolis, IN	Huntsville, AL	\$4,529	\$0	\$44.98	\$1.22	0
	Champaign-Urbana, IL	New Orleans, LA	\$4,495	\$80	\$45.44	\$1.24	2
<b>Shuttle Train</b>							
Wheat	Great Falls, MT	Portland, OR	\$3,953	-\$9	\$39.17	\$1.07	0
	Wichita, KS	Galveston-Houston, TX	\$3,871	-\$7	\$38.37	\$1.04	-2
	Chicago, IL	Albany, NY	\$5,492	\$0	\$54.54	\$1.48	0
	Grand Forks, ND	Portland, OR	\$5,611	-\$15	\$55.57	\$1.51	-1
	Grand Forks, ND	Galveston-Houston, TX	\$5,931	-\$16	\$58.74	\$1.60	-1
	Northwest KS	Portland, OR	\$5,643	\$128	\$57.31	\$1.56	3
Corn	Minneapolis, MN	Portland, OR	\$5,000	-\$19	\$49.47	\$1.26	-1
	Sioux Falls, SD	Tacoma, WA	\$4,960	-\$17	\$49.09	\$1.25	-1
	Champaign-Urbana, IL	New Orleans, LA	\$3,481	\$80	\$35.37	\$0.90	0
	Lincoln, NE	Galveston-Houston, TX	\$3,700	-\$10	\$36.64	\$0.93	2
	Des Moines, IA	Amarillo, TX	\$3,895	\$63	\$39.30	\$1.00	2
	Minneapolis, MN	Tacoma, WA	\$5,000	-\$18	\$49.47	\$1.26	-1
	Council Bluffs, IA	Stockton, CA	\$4,740	-\$19	\$46.88	\$1.19	1
Soybeans	Sioux Falls, SD	Tacoma, WA	\$5,600	-\$17	\$55.44	\$1.51	1
	Minneapolis, MN	Portland, OR	\$5,650	-\$19	\$55.92	\$1.52	2
	Fargo, ND	Tacoma, WA	\$5,500	-\$15	\$54.47	\$1.48	2
	Council Bluffs, IA	New Orleans, LA	\$4,525	\$93	\$45.86	\$1.25	2
	Toledo, OH	Huntsville, AL	\$4,226	\$0	\$41.97	\$1.14	0
	Grand Island, NE	Portland, OR	\$5,460	\$131	\$55.52	\$1.51	2

<sup>1</sup>A unit train refers to shipments of at least 25 cars. Shuttle train rates are available for qualified shipments of 75-120 cars that meet railroad efficiency requirements.

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

<sup>3</sup>Percentage change year over year calculated using tariff rate plus fuel surcharge

Sources: www.bnsf.com, www.cpr.ca, www.csx.com, www.uprr.com

\*Regional economic areas defined by the Bureau of Economic Analysis (BEA)

Table 8

**Tariff Rail Rates for U.S. Bulk Grain Shipments to Mexico**

Commodity	Origin state	Destination region	Tariff rate/car <sup>1</sup>	Fuel surcharge per car <sup>2</sup>	Tariff plus surcharge per:		Percent change <sup>4</sup> Y/Y
					metric ton <sup>3</sup>	bushel <sup>3</sup>	
Date: December, 2016							
Wheat	MT	Chihuahua, CI	\$7,459	\$0	\$76.21	\$2.07	0
	OK	Cuautitlan, EM	\$6,596	\$56	\$67.97	\$1.85	1
	KS	Guadalajara, JA	\$7,077	\$143	\$73.77	\$2.01	1
	TX	Salinas Victoria, NL	\$4,197	\$32	\$43.21	\$1.17	1
Corn	IA	Guadalajara, JA	\$8,187	\$127	\$84.95	\$2.16	-2
	SD	Celaya, GJ	\$7,580	\$0	\$77.45	\$1.97	-4
	NE	Queretaro, QA	\$7,909	\$105	\$81.89	\$2.08	0
	SD	Salinas Victoria, NL	\$6,635	\$0	\$67.79	\$1.72	1
	MO	Tlalnepantla, EM	\$7,268	\$102	\$75.31	\$1.91	0
	SD	Torreon, CU	\$7,180	\$0	\$73.36	\$1.86	-1
Soybeans	MO	Bojay (Tula), HG	\$8,647	\$131	\$89.69	\$2.44	0
	NE	Guadalajara, JA	\$8,942	\$136	\$92.75	\$2.52	-2
	IA	El Castillo, JA	\$8,960	\$0	\$91.55	\$2.49	-6
	KS	Torreon, CU	\$7,489	\$96	\$77.49	\$2.11	1
Sorghum	NE	Celaya, GJ	\$7,164	\$117	\$74.39	\$1.89	-3
	KS	Queretaro, QA	\$7,608	\$70	\$78.44	\$1.99	0
	NE	Salinas Victoria, NL	\$6,213	\$56	\$64.05	\$1.63	0
	NE	Torreon, CU	\$6,607	\$90	\$68.43	\$1.74	-3

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

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

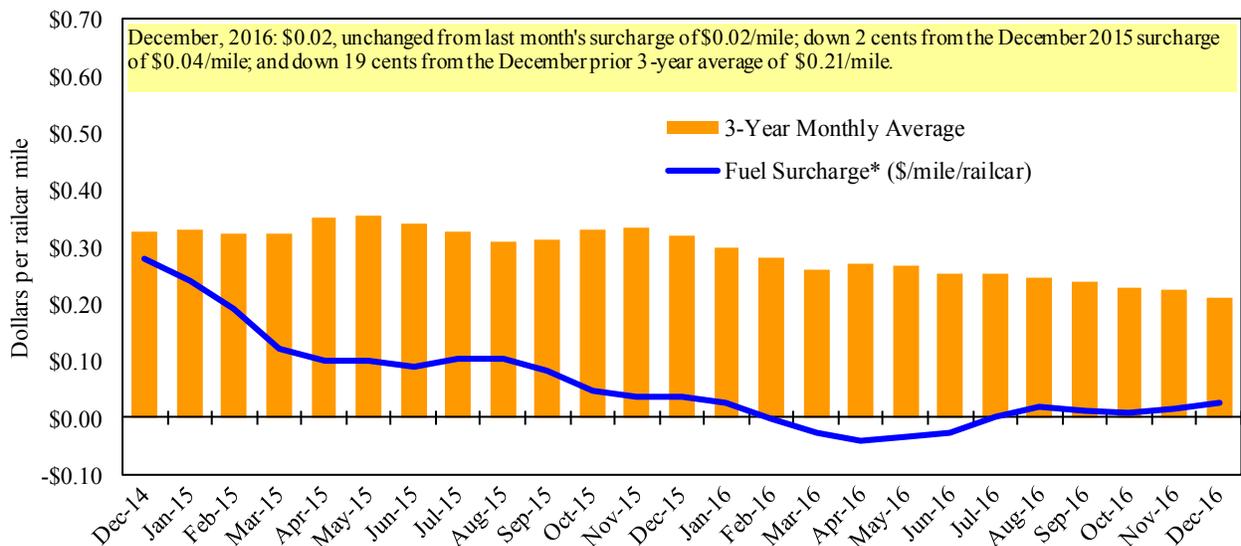
<sup>3</sup>Approximate load per car = 97.87 metric tons: Corn & Sorghum 56 lbs/bu, Wheat & Soybeans 60 lbs/bu

<sup>4</sup>Percentage change calculated using tariff rate plus fuel surcharge

Sources: www.bnsf.com, www.uprr.com, www.kcsouthern.com

Figure 7

**Railroad Fuel Surcharges, North American Weighted Average<sup>1</sup>**



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

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

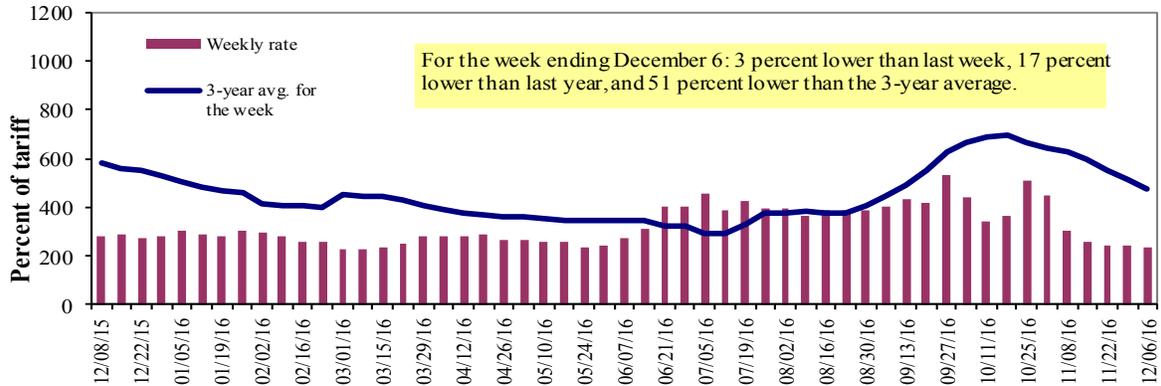
\*\*CSX strike price changed from \$2.00/gal. to \$3.75/gal. starting January 1, 2015.

Sources: www.bnsf.com, www.cn.ca, www.cpr.ca, www.csx.com, www.kcsi.com, www.nscorp.com, www.uprr.com

# Barge Transportation

Figure 8

## Illinois River Barge Freight Rate<sup>1,2</sup>



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

Table 9

### Weekly Barge Freight Rates: Southbound Only

		Twin Cities	Mid-Mississippi	Lower Illinois River	St. Louis	Cincinnati	Lower Ohio	Cairo-Memphis
<b>Rate<sup>1</sup></b>	12/6/2016	-	-	233	180	190	190	153
	11/29/2016	-	-	240	183	200	200	163
<b>\$/ton</b>	12/6/2016	-	-	10.81	7.18	8.91	7.68	4.80
	11/29/2016	-	-	11.14	7.30	9.38	8.08	5.12
<b>Current week % change from the same week:</b>								
	Last year	-	-	-17	0	4	4	-9
	3-year avg. <sup>2</sup>	-	-	-51	-52	-56	-56	-52
<b>Rate<sup>1</sup></b>	January	-	-	258	190	190	190	153
	March	-	273	250	185	190	190	153

<sup>1</sup>Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); <sup>2</sup>4-week moving average; ton = 2,000 pounds; - closed for winter  
Source: Transportation & Marketing Programs/AMS/USDA

Figure 9

### Benchmark tariff rates

#### Calculating barge rate per ton:

$$(\text{Rate} * 1976 \text{ tariff benchmark rate per ton}) / 100$$

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

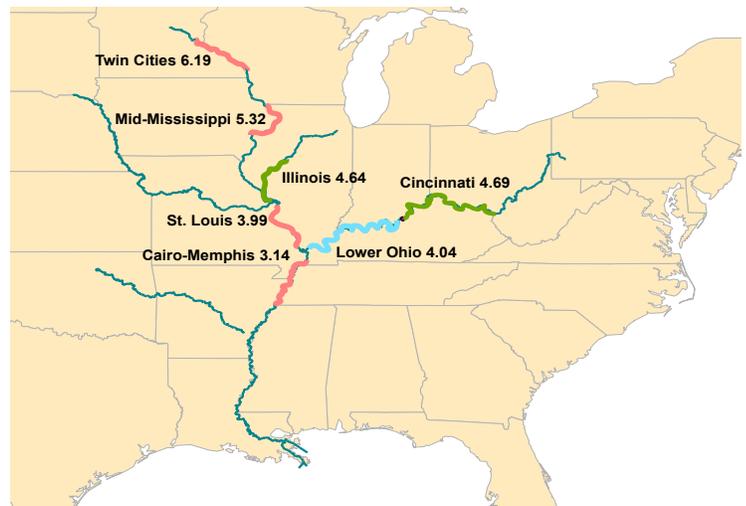
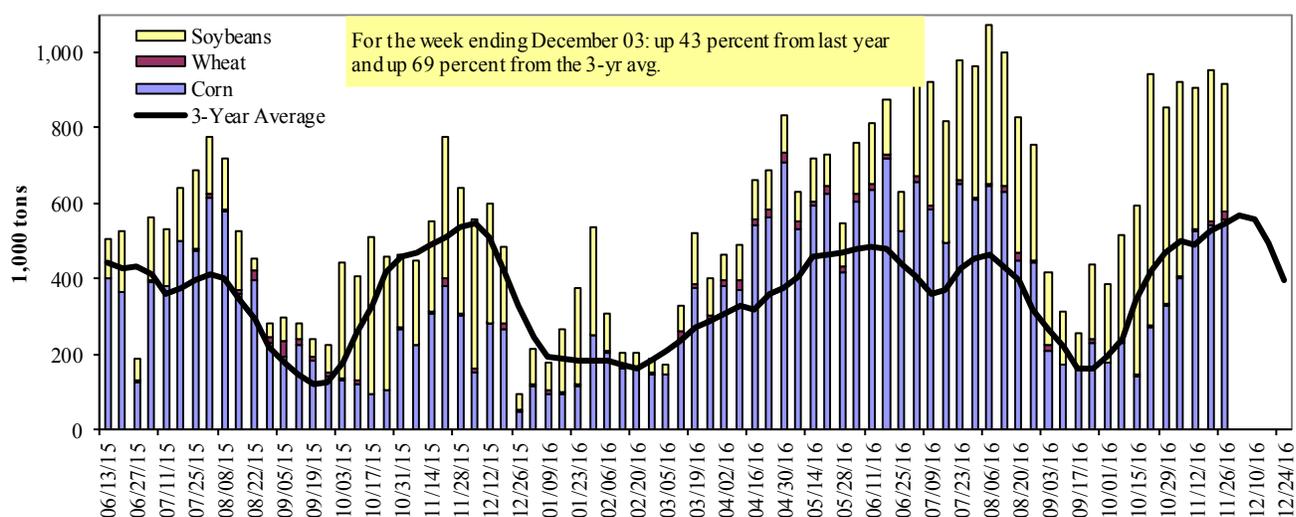


Figure 10

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



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

Source: U.S. Army Corps of Engineers

Table 10

#### Barge Grain Movements (1,000 tons)

For the week ending 12/03/2016	Corn	Wheat	Soybeans	Other	Total
<b>Mississippi River</b>					
Rock Island, IL (L15)	151	11	99	0	260
Winfield, MO (L25)	359	15	266	2	642
Alton, IL (L26)	539	17	320	2	878
Granite City, IL (L27)	558	18	343	2	922
<b>Illinois River (L8)</b>	105	0	16	0	121
<b>Ohio River (L52)</b>	18	4	76	0	97
<b>Arkansas River (L1)</b>	0	0	40	0	40
Weekly total - 2016	576	22	459	2	1,059
Weekly total - 2015	347	3	425	12	786
2016 YTD <sup>1</sup>	22,624	1,917	15,084	317	39,942
2015 YTD	18,183	1,609	12,380	339	32,511
2016 as % of 2015 YTD	124	119	122	93	123
Last 4 weeks as % of 2015 <sup>2</sup>	152	127	128	20	136
Total 2015	19,215	1,686	14,191	359	35,451

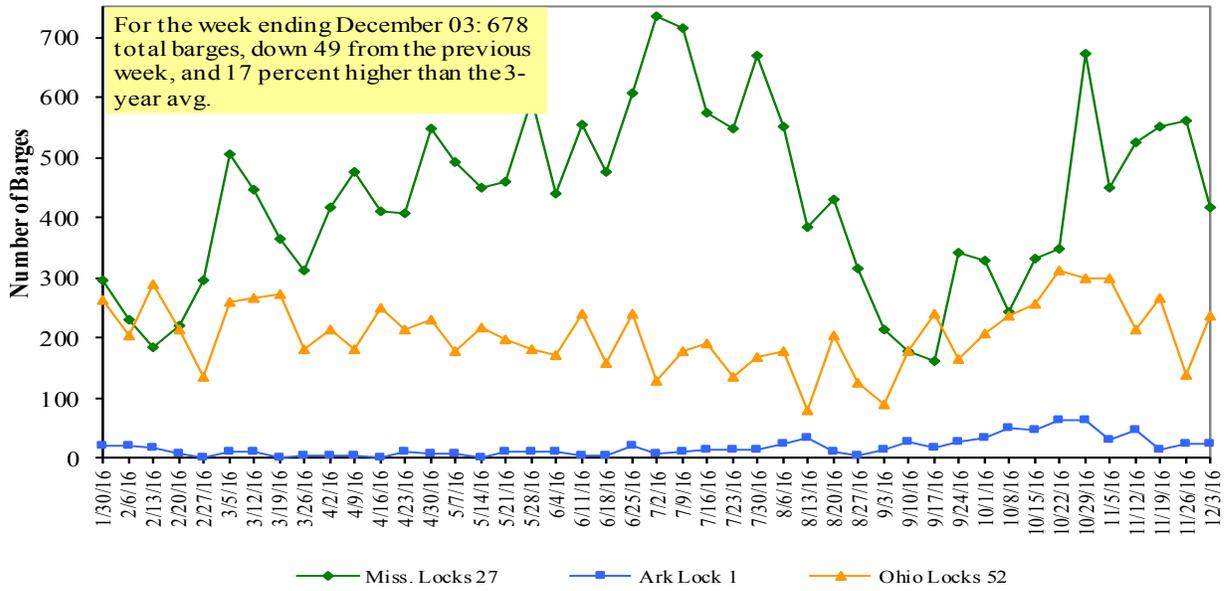
<sup>1</sup> Weekly total, YTD (year-to-date) and calendar year total includes Miss/27, Ohio/52, and Ark/1; "Other" refers to oats, barley, sorghum, and rye.

<sup>2</sup> As a percent of same period in 2015.

Note: Total may not add exactly, due to rounding

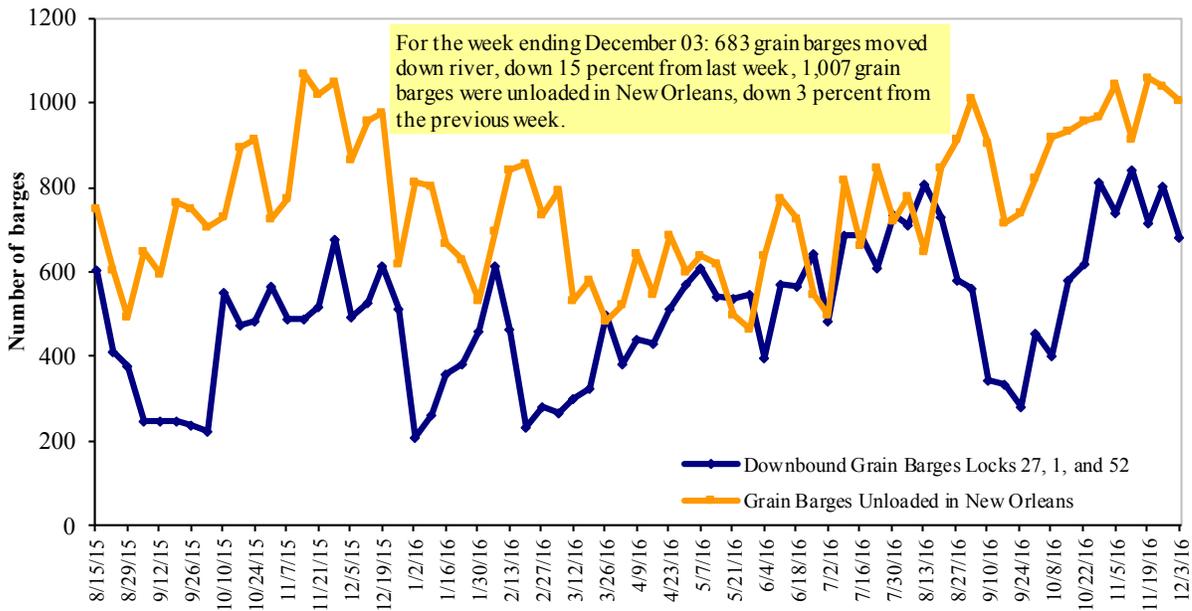
Source: U.S. Army Corps of Engineers

**Figure 11**  
**Upbound Empty Barges Transiting Mississippi River Locks 27, Arkansas River Lock and Dam 1, and Ohio River Locks and Dam 52**



Source: U.S. Army Corps of Engineers

**Figure 12**  
**Grain Barges for Export in New Orleans Region**



Source: U.S. Army Corps of Engineers and GIPSA

# 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<sup>1</sup>, Week Ending 12/5/2016 (US \$/gallon)

Region	Location	Price	Change from	
			Week ago	Year ago
I	East Coast	2.499	0.053	0.086
	New England	2.526	0.054	0.011
	Central Atlantic	2.602	0.053	0.060
	Lower Atlantic	2.415	0.054	0.120
II	Midwest <sup>2</sup>	2.431	0.075	0.083
III	Gulf Coast <sup>3</sup>	2.361	0.071	0.129
IV	Rocky Mountain	2.457	0.007	0.047
	West Coast	2.770	0.043	0.167
V	West Coast less California	2.679	0.044	0.202
	California	2.843	0.043	0.139
Total	U.S.	2.480	0.060	0.101

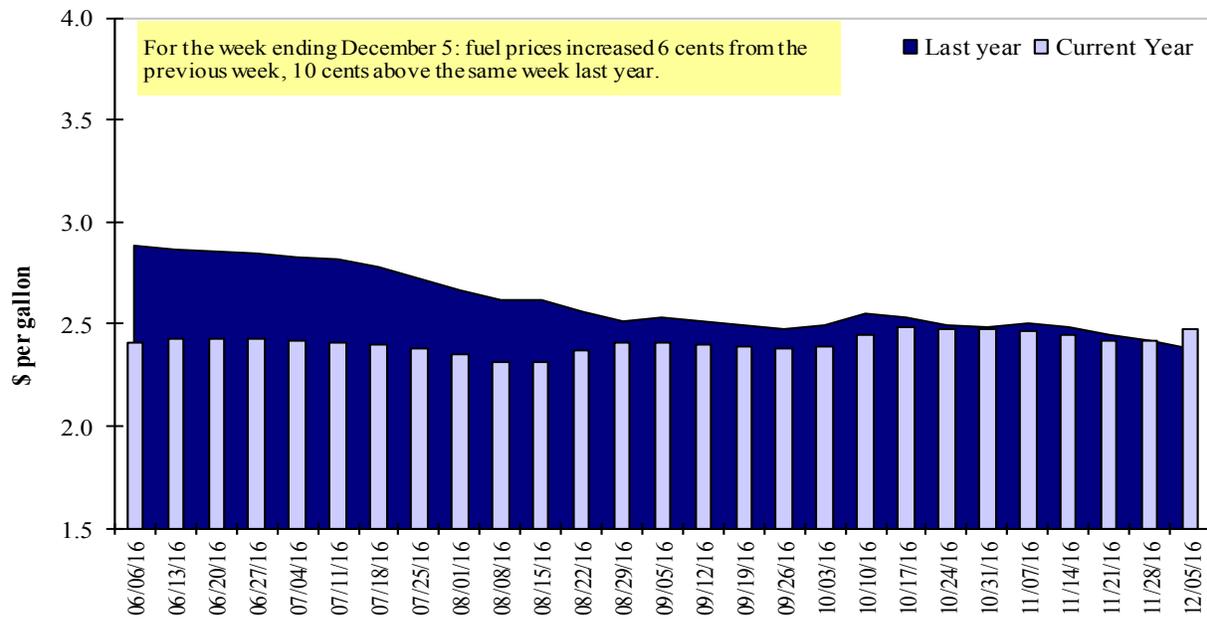
<sup>1</sup>Diesel fuel prices include all taxes. Prices represent an average of all types of diesel fuel.

<sup>2</sup>Same as North Central <sup>3</sup>Same as South Central

Source: Energy Information Administration/U.S. Department of Energy (www.eia.doe.gov)

Figure 13

## Weekly Diesel Fuel Prices, U.S. Average



Source: Retail On-Highway Diesel Prices, Energy Information Administration, Dept. of Energy

# Grain Exports

Table 12

## U.S. Export Balances and Cumulative Exports (1,000 metric tons)

For the week ending	Wheat						Corn	Soybeans	Total
	HRW	SRW	HRS	SWW	DUR	All wheat			
<b>Export Balances<sup>1</sup></b>									
11/24/2016	2,092	582	2,248	1,290	161	6,373	18,355	17,568	42,295
This week year ago	1,278	671	1,470	1,054	49	4,522	10,398	13,370	28,290
<b>Cumulative exports-marketing year<sup>2</sup></b>									
2016/17 YTD	5,575	1,024	3,729	1,992	174	12,493	11,728	24,201	48,422
2015/16 YTD	2,746	1,826	3,149	1,700	481	9,901	6,681	19,419	36,001
YTD 2016/17 as % of 2015/16	203	56	118	117	36	126	176	125	135
Last 4 wks as % of same period 2015/16	161	83	137	110	382	132	169	143	151
2015/16 Total	5,538	3,057	6,285	3,551	670	19,101	45,564	49,821	114,487
2014/15 Total	7,009	3,654	7,250	3,758	665	22,336	45,205	49,614	117,155

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

<sup>2</sup> Shipped export sales to date; new marketing year now in effect for wheat; new marketing year now in effect for corn and soybeans

Note: YTD = year-to-date. Marketing Year: wheat = 6/01-5/31, corn & soybeans = 9/01-8/31

Source: Foreign Agricultural Service/USDA ([www.fas.usda.gov](http://www.fas.usda.gov))

Table 13

## Top 5 Importers<sup>1</sup> of U.S. Corn

For the week ending 11/24/2016	Total Commitments <sup>2</sup>		% change current MY from last MY	Exports <sup>3</sup> 3-year avg 2013-2015
	2016/17 Current MY	2015/16 Last MY		
	- 1,000 mt -			- 1,000 mt -
Japan	3,855	2,740	41	11,284
Mexico	8,531	6,990	22	11,204
Korea	2,160	262	724	3,931
Colombia	1,819	1,381	32	4,134
Taiwan	1,376	342	302	1,912
<b>Top 5 Importers</b>	<b>17,741</b>	<b>11,715</b>	<b>51</b>	<b>32,465</b>
<b>Total US corn export sales</b>	<b>30,082</b>	<b>17,079</b>	<b>76</b>	<b>46,633</b>
% of Projected	53%	35%		
Change from prior week	747	499		
<b>Top 5 importers' share of U.S. corn export sales</b>	59%	69%		70%
<b>USDA forecast, November 2016</b>	<b>56,616</b>	<b>48,295</b>	<b>17</b>	
<b>Corn Use for Ethanol USDA forecast, November 2016</b>	<b>134,620</b>	<b>132,233</b>	<b>2</b>	

(n) indicates negative number.

<sup>1</sup>Based on FAS Marketing Year Ranking Reports - [www.fas.usda.gov](http://www.fas.usda.gov); Marketing year (MY) = Sep 1 - Aug 31.

<sup>2</sup>Cumulative Exports (shipped) + Outstanding Sales (unshipped), FAS Weekly Export Sales Report, or Export Sales Query--<http://www.fas.usda.gov/esrquery/>. Total commitments change from prior week could include revisions from previous week's outstanding sales or accumulated sales.

<sup>3</sup>FAS Marketing Year Ranking Reports - <http://apps.fas.usda.gov/export-sales/myrkaug.htm>; 3-yr average

Table 14

**Top 5 Importers<sup>1</sup> of U.S. Soybeans**

For the week ending 11/24/2016	Total Commitments <sup>2</sup>		% change current MY from last MY	Exports <sup>3</sup> 3-yr avg. 2013-2015
	2016/17 Current MY	2015/16 Last MY		
	- 1,000 mt -			- 1,000 mt -
China	25,752	18,898	36	29,033
Mexico	1,792	1,637	9	3,295
Indonesia	708	516	37	2,065
Japan	1,092	1,072	2	1,994
Taiwan	802	668	20	1,226
<b>Top 5 importers</b>	<b>30,146</b>	<b>22,791</b>	<b>32</b>	<b>37,614</b>
<b>Total US soybean export sales</b>	<b>41,769</b>	<b>32,788</b>	<b>27</b>	<b>48,389</b>
% of Projected	75%	62%		
Change from prior week	<b>1,399</b>	<b>814</b>		
<b>Top 5 importers' share of U.S. soybean export sales</b>	72%	70%		<b>78%</b>
<b>USDA forecast, November 2016</b>	<b>55,858</b>	<b>52,752</b>	<b>6</b>	

(n) indicates negative number.

<sup>1</sup> Based on FAS Marketing Year Ranking Reports - [www.fas.usda.gov](http://www.fas.usda.gov); Marketing year (MY) = Sep 1 - Aug 31.<sup>2</sup> Cumulative Exports (shipped) + Outstanding Sales (unshipped), FAS Weekly Export Sales Report, or Export Sales Query--  
<http://www.fas.usda.gov/esrquery/>. Total commitments change from prior week could include revisions from previous week's outstanding sales and/or accumulated sales<sup>3</sup> FAS Marketing Year Final Reports - [www.fas.usda.gov/export-sales/myfi\\_rpt.htm](http://www.fas.usda.gov/export-sales/myfi_rpt.htm). (Carryover plus Accumulated Exports)

Table 15

**Top 10 Importers<sup>1</sup> of All U.S. Wheat**

For the week ending 11/24/2016	Total Commitments <sup>2</sup>		% change current MY from last MY	Exports <sup>3</sup> 3-yr avg 2013-2015
	2016/17 Current MY	2015/16 Last MY		
	- 1,000 mt -			- 1,000 mt -
Japan	1,706	1,401	22	2,743
Mexico	1,809	1,469	23	2,660
Nigeria	816	1,121	(27)	1,978
Philippines	1,938	1,530	27	2,156
Brazil	1,053	338	212	2,076
Korea	981	881	11	1,170
Taiwan	608	606	0	1,005
Indonesia	654	193	238	776
Colombia	561	459	22	679
Thailand	552	379	46	618
<b>Top 10 importers</b>	<b>10,127</b>	<b>7,997</b>	<b>27</b>	<b>15,861</b>
<b>Total US wheat export sales</b>	<b>18,866</b>	<b>14,424</b>	<b>31</b>	<b>24,485</b>
% of Projected	71%	68%		
Change from prior week	<b>482</b>	<b>392</b>		
<b>Top 10 importers' share of U.S. wheat export sales</b>	54%	55%		65%
<b>USDA forecast, November 2016</b>	<b>26,567</b>	<b>21,117</b>	<b>26</b>	

(n) indicates negative number.

<sup>1</sup> Based on FAS Marketing Year Ranking Reports - [www.fas.usda.gov](http://www.fas.usda.gov); Marketing year = Jun 1 - May 31.<sup>2</sup> Cumulative Exports (shipped) + Outstanding Sales (unshipped), FAS Weekly Export Sales Report, or Export Sales Query--  
<http://www.fas.usda.gov/esrquery/>. Total commitments change from prior week could include revisions from the previous week's outstanding and/or accumulated sales<sup>3</sup> FAS Marketing Year Final Reports - [www.fas.usda.gov/export-sales/myfi\\_rpt.htm](http://www.fas.usda.gov/export-sales/myfi_rpt.htm).

Table 16

## Grain Inspections for Export by U.S. Port Region (1,000 metric tons)

Port Regions	For the Week Ending 12/01/16	Previous Week <sup>1</sup>	Current Week as % of Previous	2016 YTD*	2015 YTD*	2016 YTD as % of 2015 YTD	Last 4-weeks as % of:		2015 Total <sup>2</sup>
							Last Year	Prior 3-yr. avg.	
<b>Pacific Northwest</b>									
Wheat	230	177	130	11,352	10,028	113	106	113	10,985
Corn	357	61	588	11,346	7,148	159	1248	257	7,232
Soybeans	557	489	114	12,473	10,205	122	130	117	11,809
<b>Total</b>	<b>1,144</b>	<b>727</b>	<b>157</b>	<b>35,171</b>	<b>27,382</b>	<b>128</b>	<b>150</b>	<b>129</b>	<b>30,027</b>
<b>Mississippi Gulf</b>									
Wheat	129	5	2,411	3,287	4,270	77	64	69	4,504
Corn	591	529	112	29,418	25,100	117	156	129	26,701
Soybeans	1,137	1,482	77	31,131	25,783	121	117	111	29,593
<b>Total</b>	<b>1,857</b>	<b>2,017</b>	<b>92</b>	<b>63,837</b>	<b>55,152</b>	<b>116</b>	<b>121</b>	<b>113</b>	<b>60,797</b>
<b>Texas Gulf</b>									
Wheat	91	57	158	5,454	3,373	162	290	131	3,724
Corn	28	62	45	1,590	596	267	498	684	596
Soybeans	0	73	0	963	770	125	158	148	864
<b>Total</b>	<b>118</b>	<b>192</b>	<b>62</b>	<b>8,007</b>	<b>4,739</b>	<b>169</b>	<b>236</b>	<b>161</b>	<b>5,184</b>
<b>Interior</b>									
Wheat	2	18	12	1,422	1,298	110	126	159	1,388
Corn	113	160	71	6,713	5,743	117	149	127	6,201
Soybeans	74	103	71	4,198	3,318	127	161	112	3,518
<b>Total</b>	<b>189</b>	<b>282</b>	<b>67</b>	<b>12,334</b>	<b>10,359</b>	<b>119</b>	<b>151</b>	<b>123</b>	<b>11,106</b>
<b>Great Lakes</b>									
Wheat	25	1	n/a	1,003	945	106	114	115	997
Corn	39	0	n/a	558	485	115	n/a	3326	485
Soybeans	63	0	n/a	804	691	116	136	106	733
<b>Total</b>	<b>127</b>	<b>1</b>	<b>n/a</b>	<b>2,366</b>	<b>2,122</b>	<b>111</b>	<b>160</b>	<b>133</b>	<b>2,216</b>
<b>Atlantic</b>									
Wheat	0	0	n/a	289	493	59	247	521	520
Corn	0	0	n/a	293	276	106	345	7	277
Soybeans	125	144	87	1,930	1,730	112	108	112	2,053
<b>Total</b>	<b>125</b>	<b>144</b>	<b>87</b>	<b>2,512</b>	<b>2,498</b>	<b>101</b>	<b>112</b>	<b>115</b>	<b>2,850</b>
<b>U.S. total from ports<sup>2</sup></b>									
Wheat	477	258	185	22,808	20,407	112	119	112	22,118
Corn	1,127	812	139	49,919	39,348	127	206	155	41,492
Soybeans	1,955	2,291	85	51,499	42,497	121	122	114	48,570
<b>Total</b>	<b>3,560</b>	<b>3,361</b>	<b>106</b>	<b>124,226</b>	<b>102,252</b>	<b>121</b>	<b>135</b>	<b>121</b>	<b>112,180</b>

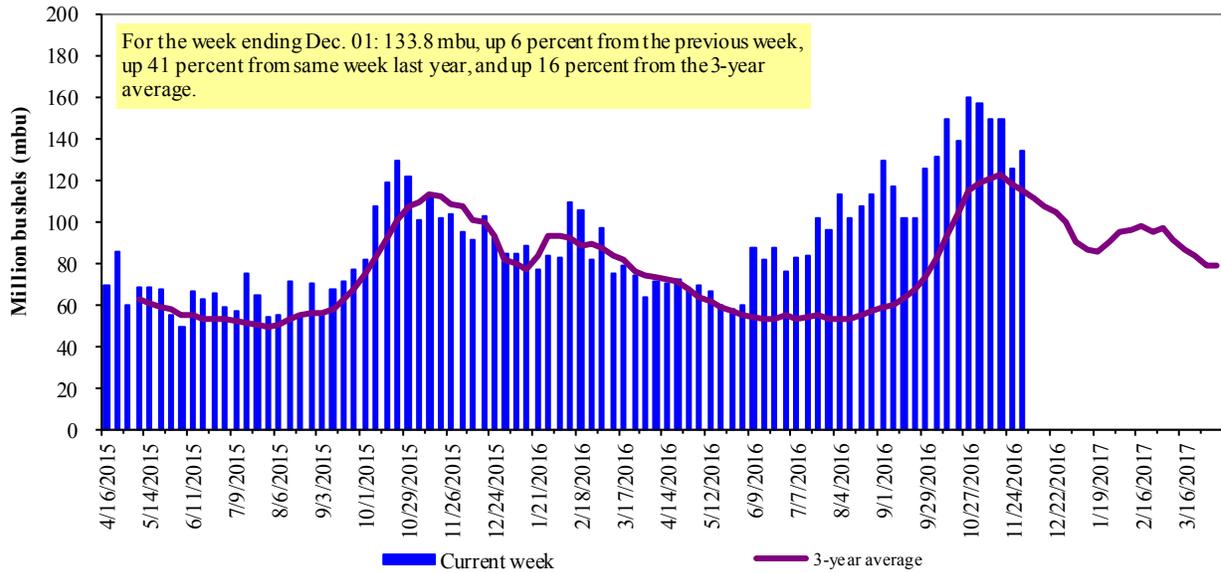
<sup>1</sup> Data includes revisions from prior weeks; some regional totals may not add exactly due to rounding.

Source: Grain Inspection, Packers and Stockyards Administration/USDA ([www.gipsa.usda.gov](http://www.gipsa.usda.gov)); YTD= year-to-date; n/a = not applicable

The United States exports approximately one-quarter of the grain it produces. On average, this includes nearly 45 percent of U.S.-grown wheat, 35 percent of U.S.-grown soybeans, and 20 percent of the U.S.-grown corn. Approximately 59 percent of the U.S. export grain shipments departed through the U.S. Gulf region in 2015.

Figure 14

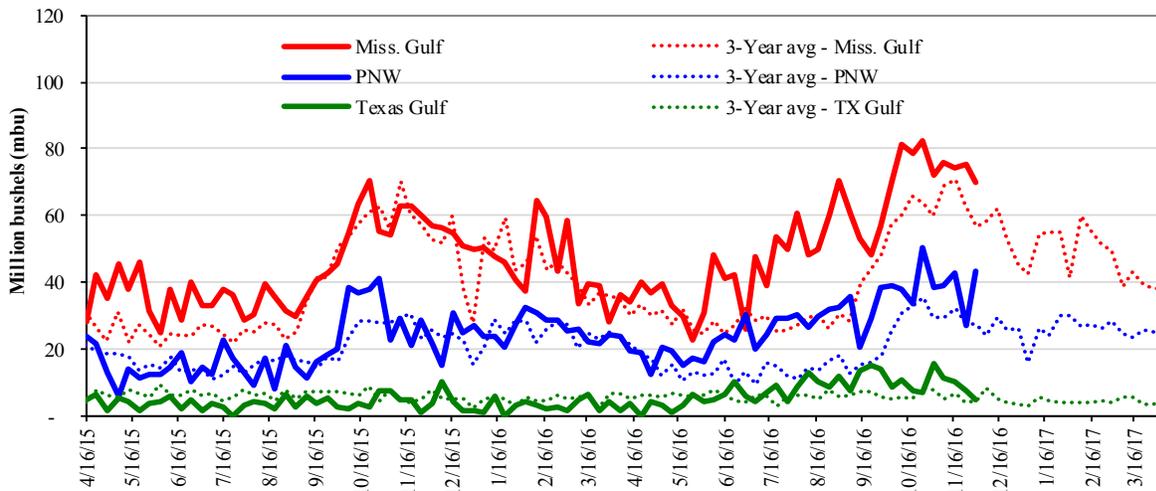
**U.S. grain inspected for export (wheat, corn, and soybeans)**



Source: Grain Inspection, Packers and Stockyards Administration/USDA (www.gipsa.usda.gov)  
 Note: 3-year average consists of 4-week running average

Figure 15

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



Week ending 12/01/16 inspections (mbu):		Percent change from:				
Mississippi Gulf:	69.8	Last Week:	MS Gulf	TX Gulf	U.S. Gulf	PNW
PNW:	43.0	Last Year (same week):	down 8	down 39	down 10	up 60
Texas Gulf:	4.4	3-yr avg. (4-wk. mov. Avg):	up 23	up 30	up 23	up 100
			up 7	down 12	up 6	up 48

Source: Grain Inspection, Packers and Stockyards Administration/USDA (www.gipsa.usda.gov)

# Ocean Transportation

Table 17

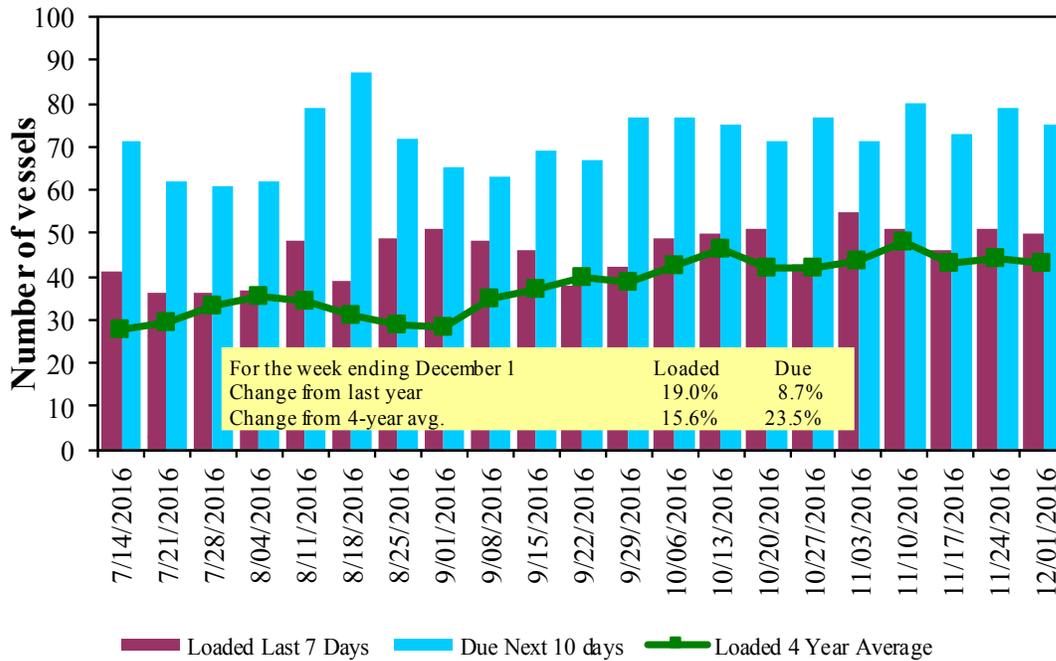
**Weekly Port Region Grain Ocean Vessel Activity (number of vessels)**

Date	Gulf			Pacific Northwest	Vancouver B.C.
	In port	Loaded 7-days	Due next 10-days	In port	In port
12/1/2016	47	50	75	27	n/a
11/24/2016	39	51	79	n/a	n/a
2015 range	(25..54)	(28..54)	(36..80)	(3..26)	n/a
2015 avg.	42	38	56	11	n/a

Source: Transportation & Marketing Programs/AMS/USDA

Figure 16

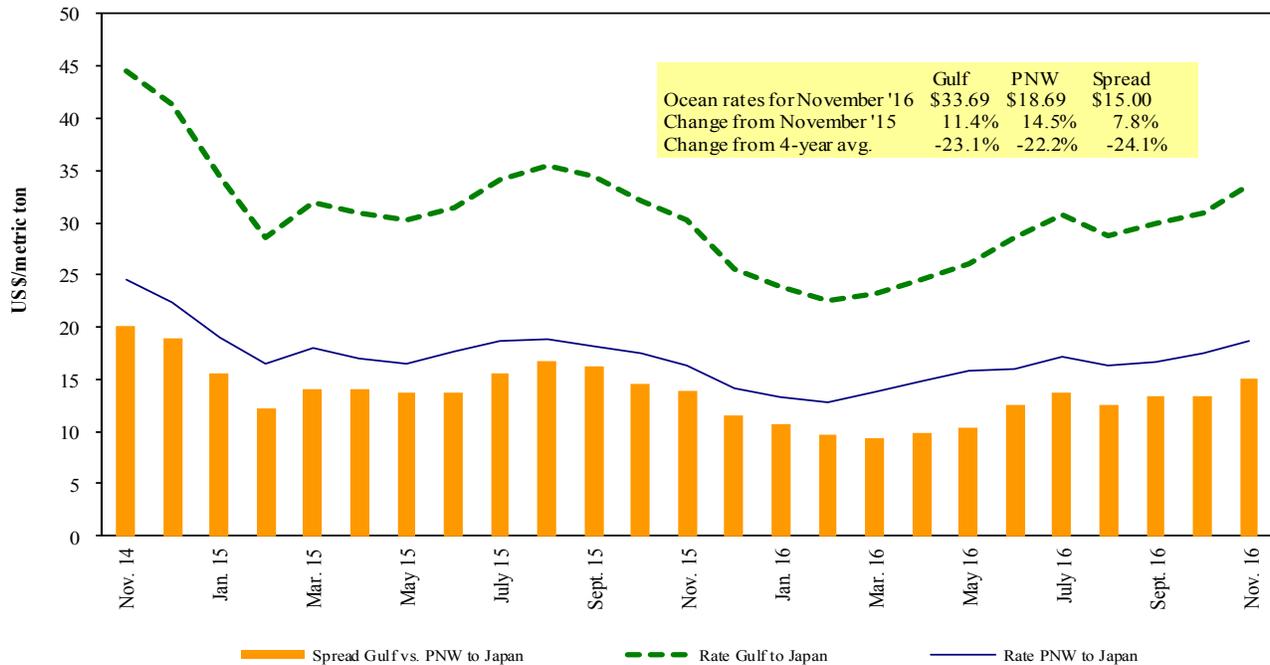
**U.S. Gulf Vessel Loading Activity**



Source: Transportation & Marketing Programs/AMS/USDA

Figure 17

**Grain Vessel Rates, U.S. to Japan**



Data Source: O'Neil Commodity Consulting

Table 18

**Ocean Freight Rates For Selected Shipments, Week Ending 12/03/2016**

Export region	Import region	Grain types	Loading date	Volume loads (metric tons)	Freight rate (US\$/metric ton)
U.S. Gulf	China	Heavy Grain	Dec 14/20	53,000	34.00
U.S. Gulf	China	Heavy Grain	Dec 12/20	63,000	36.00
U.S. Gulf	China	Heavy Grain	Dec 10/20	63,000	35.75
U.S. Gulf	China	Heavy Grain	Dec 5/15	60,000	35.75
U.S. Gulf	China	Heavy Grain	Dec 1/10	60,000	35.35
U.S. Gulf	China	Heavy Grain	Nov 20/30	50,000	31.00
U.S. Gulf	China	Heavy Grain	Nov 15/25	50,000	29.00
U.S. Gulf	China	Heavy Grain	Oct 20/30	65,000	27.50
U.S. Gulf	China	Heavy Grain	Oct 10/20	60,000	28.25
U.S. Gulf	China	Heavy Grain	Oct 5/15	66,000	28.00
U.S. Gulf	China	Heavy Grain	Sep 20/25	60,000	27.75
PNW	Bangladesh	Wheat	Dec 1/10	12,500	160.33*
Vancouver	China	Heavy Grain	Nov 1/10	50,000	31.50
PNW	Bangladesh	Wheat	Nov 1/10	12,500	163.55*
PNW	Taiwan	Wheat	Sep 8/22	54,000	21.10
Black Sea	Spanish Mediterranean	Heavy Grain	Oct 14/18	60,000	9.35
River Plate	South Africa	Soybeans	Nov 1/14	25,000	24.00
River Plate	Algeria	Corn	Sep 24/28	40,000	19.50
Ukraine	Iran	Wheat	Oct 10/17	60,000	22.25

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

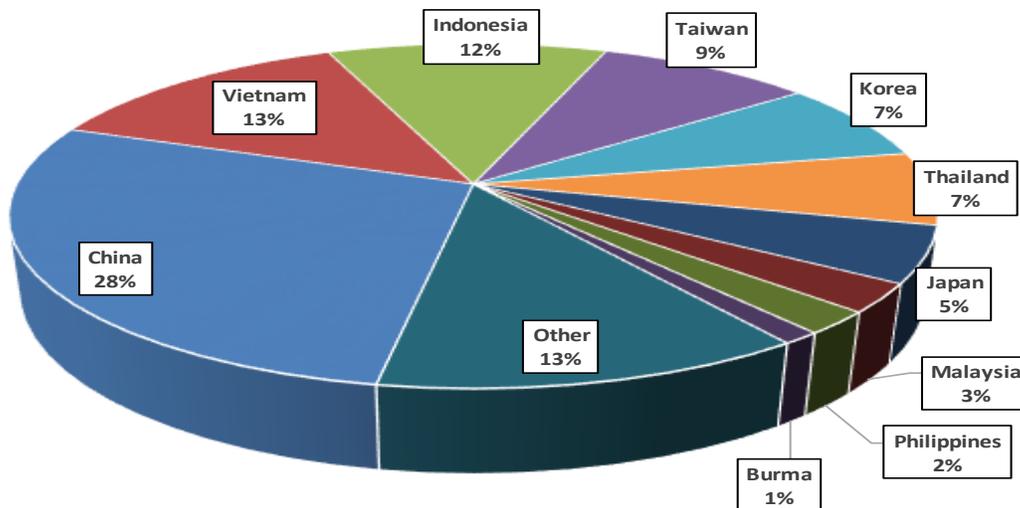
\*50 percent of food aid from the United States is required to be shipped on U.S.-flag vessels.

Source: Maritime Research Inc. (www.maritime-research.com)

In 2015, containers were used to transport 8 percent of total U.S. waterborne grain exports. Approximately 64 percent of U.S. waterborne grain exports in 2015 went to Asia, of which 12 percent were moved in containers. Approximately 94 percent of U.S. waterborne containerized grain exports were destined for Asia.

Figure 18

**Top 10 Destination Markets for U.S. Containerized Grain Exports, January-August 2016**

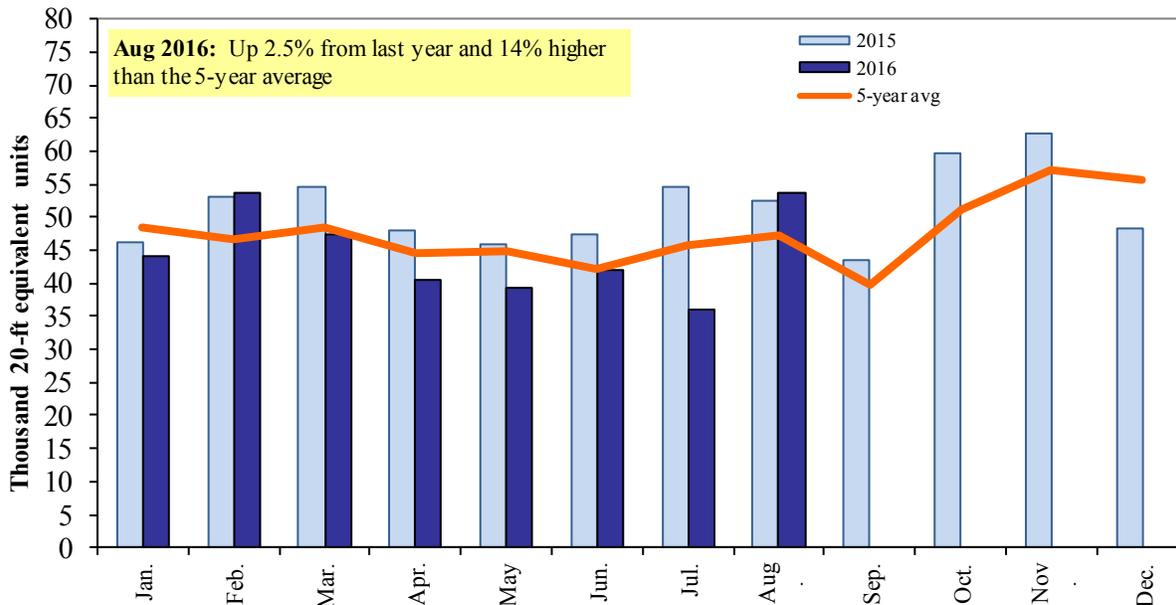


Source: USDA/Agricultural Marketing Service/Transportation Services Division analysis of Port Import Export Reporting Service (PIERS) data

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

Figure 19

**Monthly Shipments of Containerized Grain to Asia**



Source: USDA/Agricultural Marketing Service/Transportation Services Division analysis of Port Import Export Reporting Service (PIERS) data.

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

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