



Vessel Transport via Louisiana's Deepwater Mississippi River Ports: 2007-16

A study funded by and conducted for
Associated Branch Pilots

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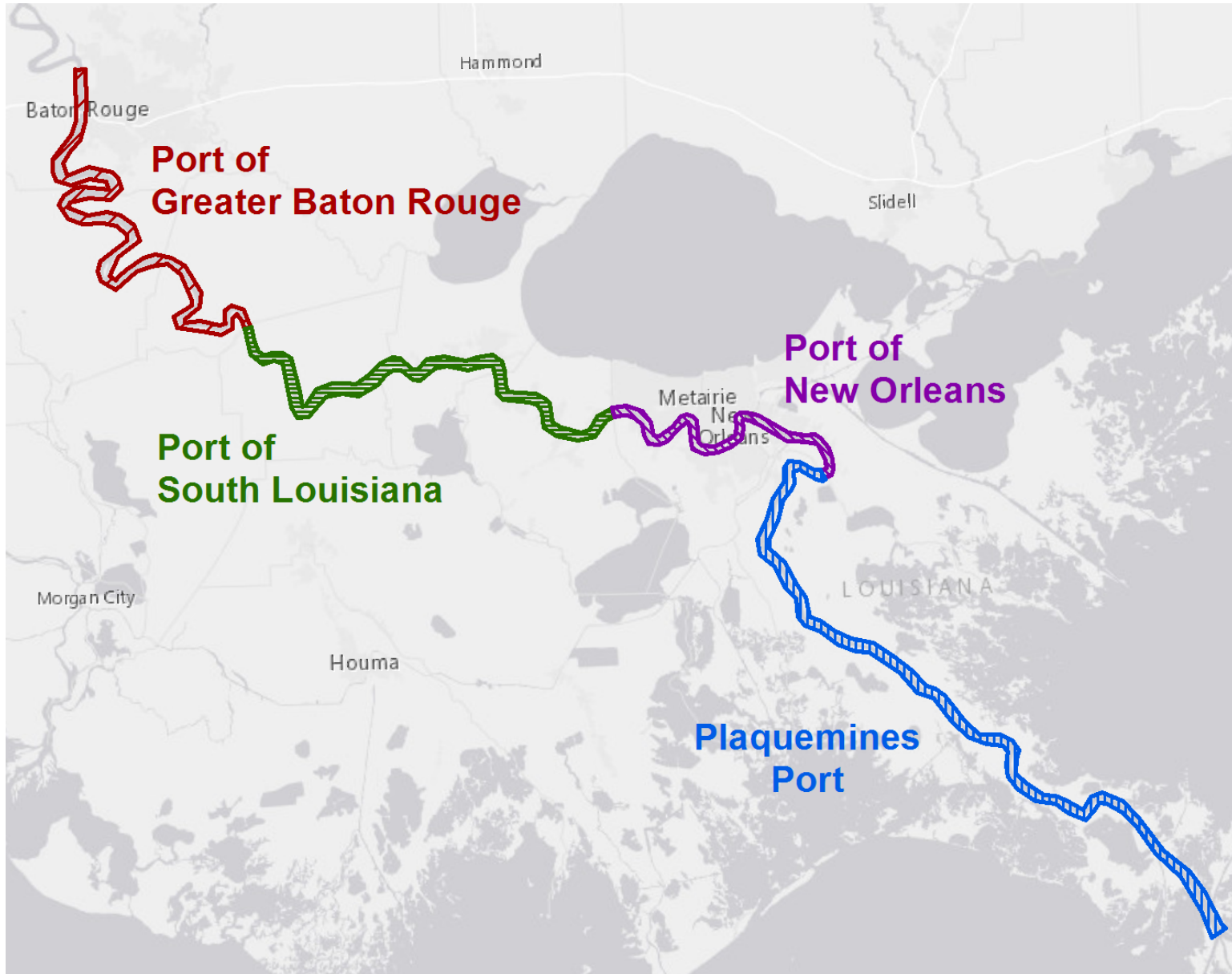
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- Mississippi River from Baton Rouge to the mouth of the River handled 30.3 percent of all domestic waterborne commerce in 2016¹
- The five deepwater ports located along this stretch of the River – the Port of Greater Baton Rouge, Port of South Louisiana, Port of New Orleans, St. Bernard Port, and Plaquemines Port – handled 15.4 percent of all foreign inbound and outbound waterborne cargo in 2016¹
- These ports consistently rank among the top U.S. ports for volume of cargo handled²
 - Port of South Louisiana - #1 (2016)
 - Port of New Orleans (which includes St. Bernard Port) - #4
 - Port of Greater Baton Rouge - #8
 - Plaquemines Port - #11

¹United States Army Corps of Engineers, Navigation Data Center, 2018 and United States Army Corps of Engineers, Institute of Water Resources, 2017

²United States Army Corps of Engineers, *Principal Ports of the United States: 2016*

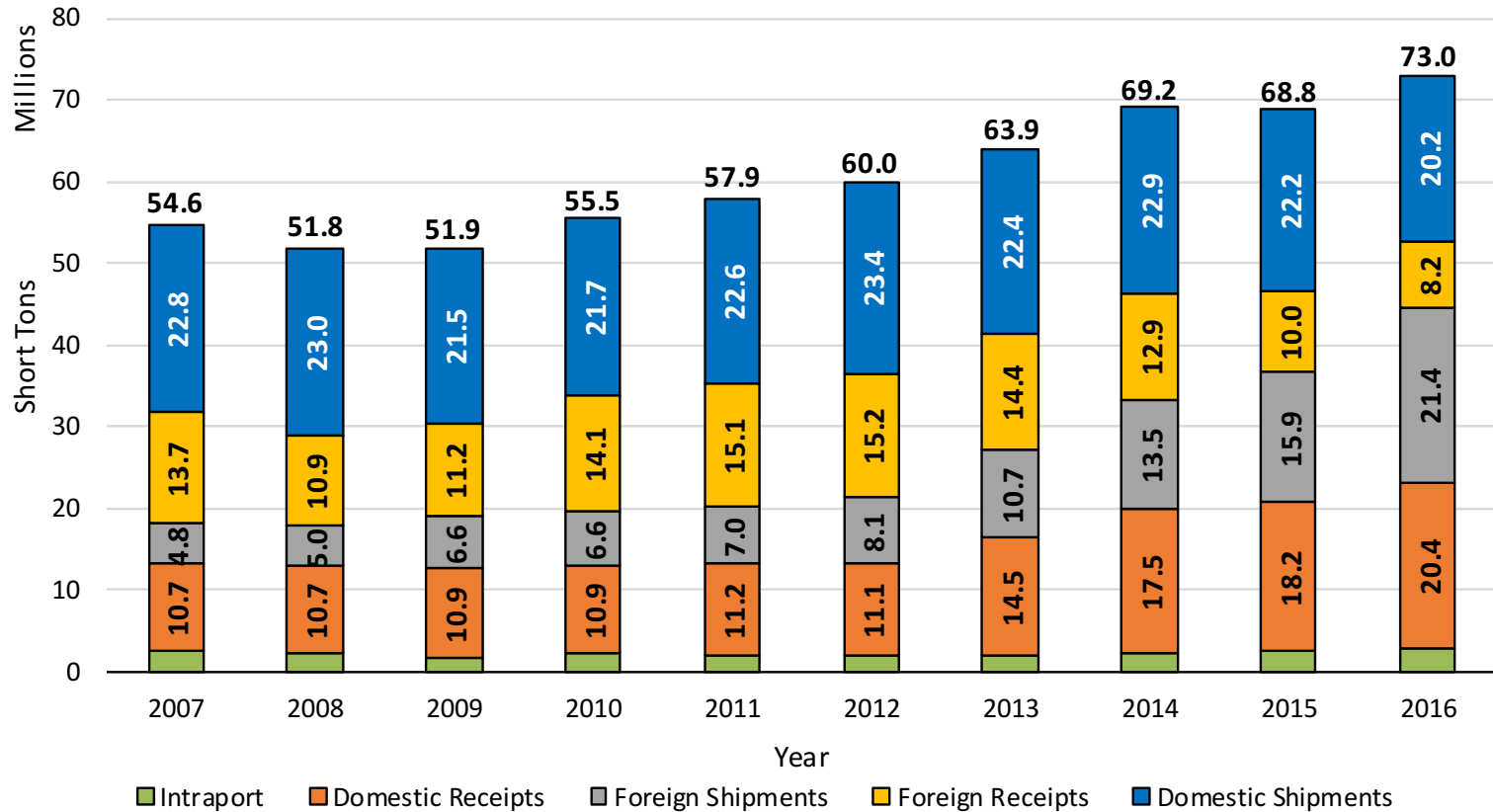




- All cargo volume data from U.S. Army Corps of Engineers – Waterborne Commerce Statistics Center (WCSC)
- Cargo valuation data based on import/export values from USA Trade Online web site (U.S. Census Bureau)
- **BUT –**
 - Port designations utilized on the USA Trade Online site do not follow the same criteria as the WCSC designations, and
 - USA Trade Online uses a different commodity classification system than WCSC, so
 - the authors developed a code “crosswalk” (WCSC ↔ SITC3 ↔ HS17) to convert the USA Trade Online average commodity values to the commodity quantities reported by WCSC, and
 - weighted averages of USA Trade Online values by commodity for all ports in the study area were used to generate cargo valuation estimates for the four WCSC designated ports. In cases where no USA Trade Online valuation data existed for certain commodities in the lower Mississippi River region, U.S. average values were used.
 - Export value data were used to calculate estimated values of domestic receipts and foreign shipments. Import value data were used to estimate values of domestic shipments and foreign receipts.



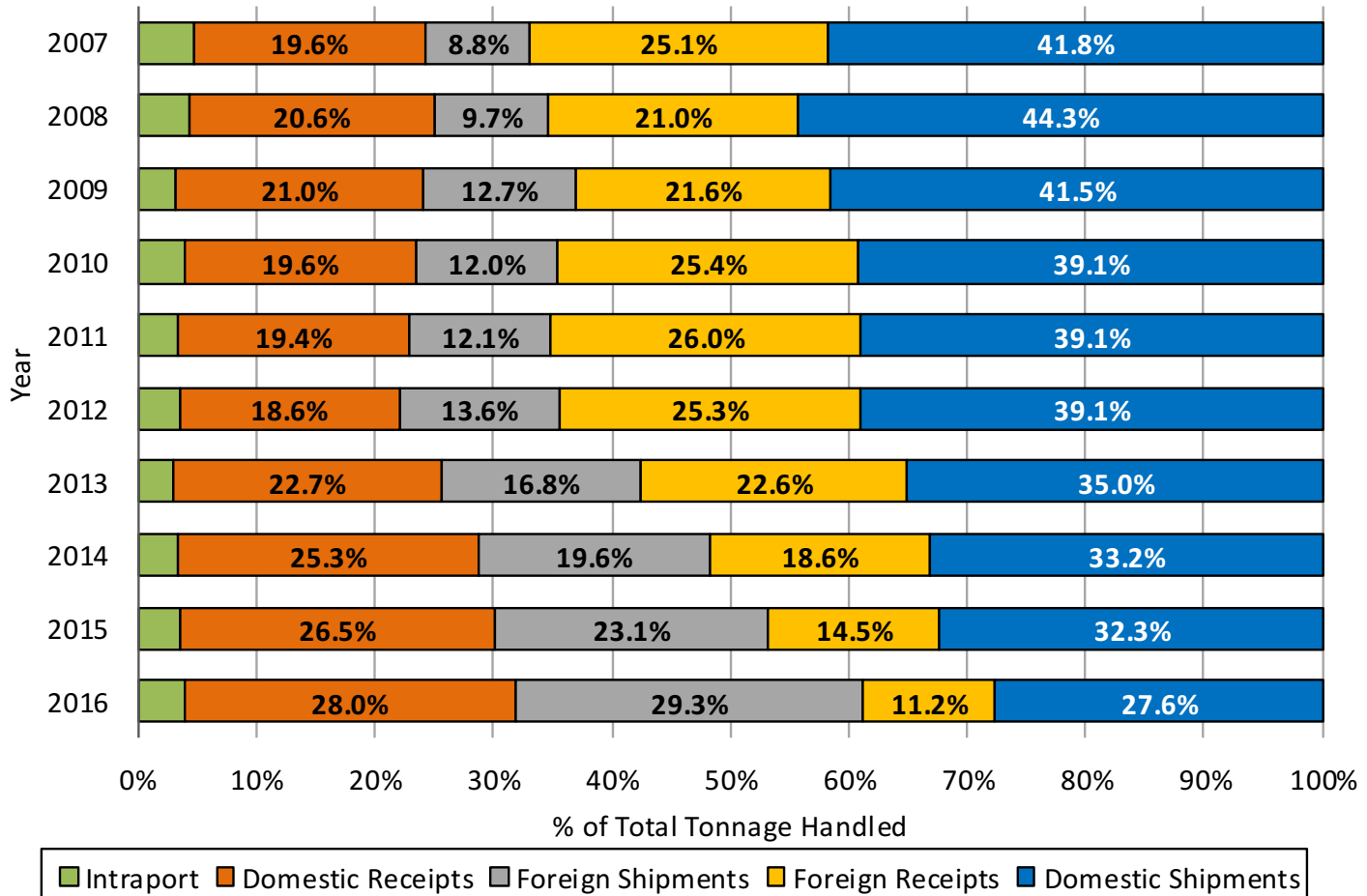
Port of Greater Baton Rouge Cargo Volume by Source and Direction: 2007-2016



Source of data: United States Army Corps of Engineers, Navigation Data Center, 2018.



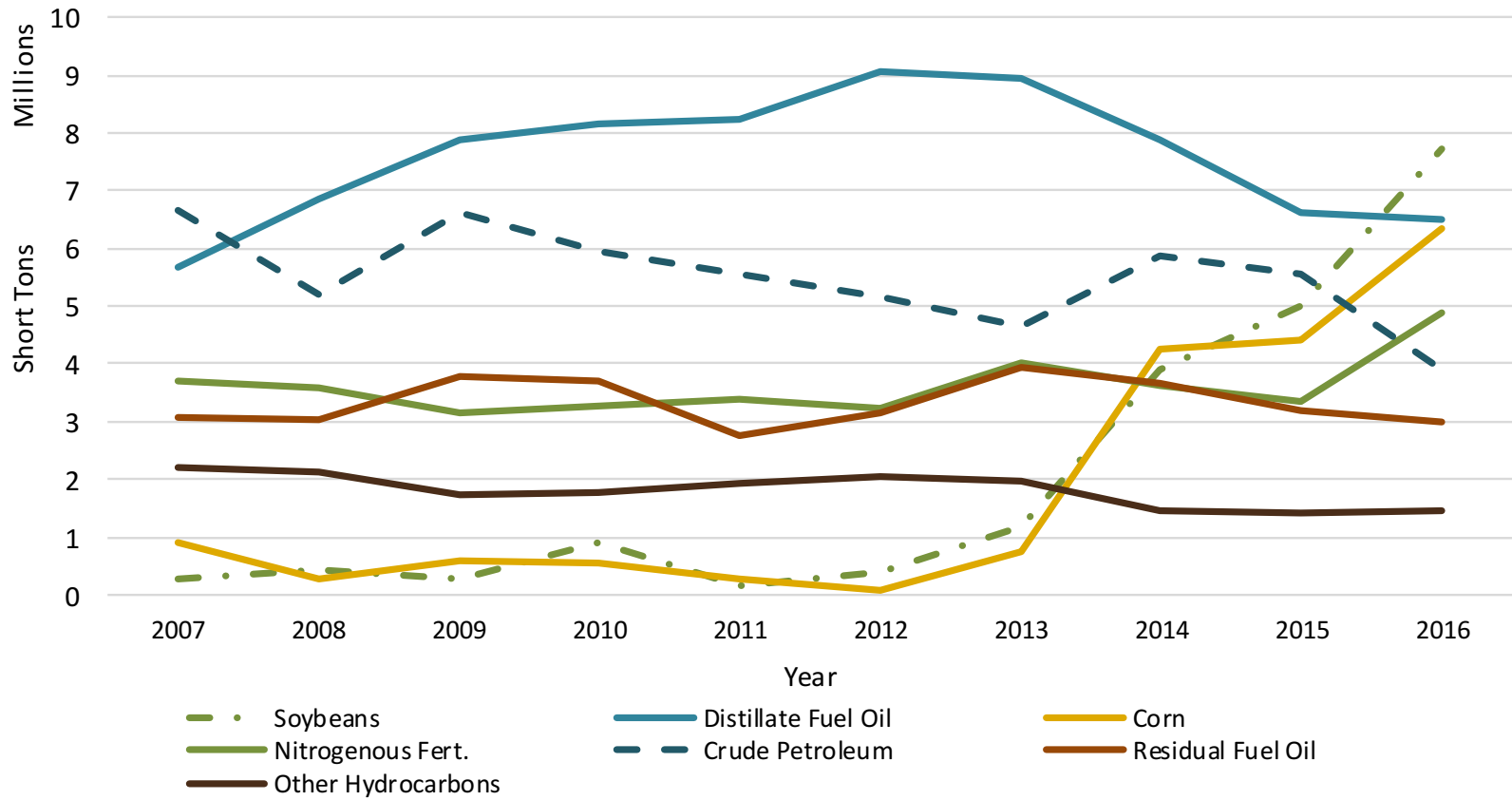
Port of Greater Baton Rouge - Percentage of Total Cargo Volume by Source and Direction: 2007-2016



Source of data: United States Army Corps of Engineers, Navigation Data Center, 2018.



Volume of Top Five (2007/2016) Commodities Handled at the Port of Greater Baton Rouge (excluding intraport movements): 2007-2016



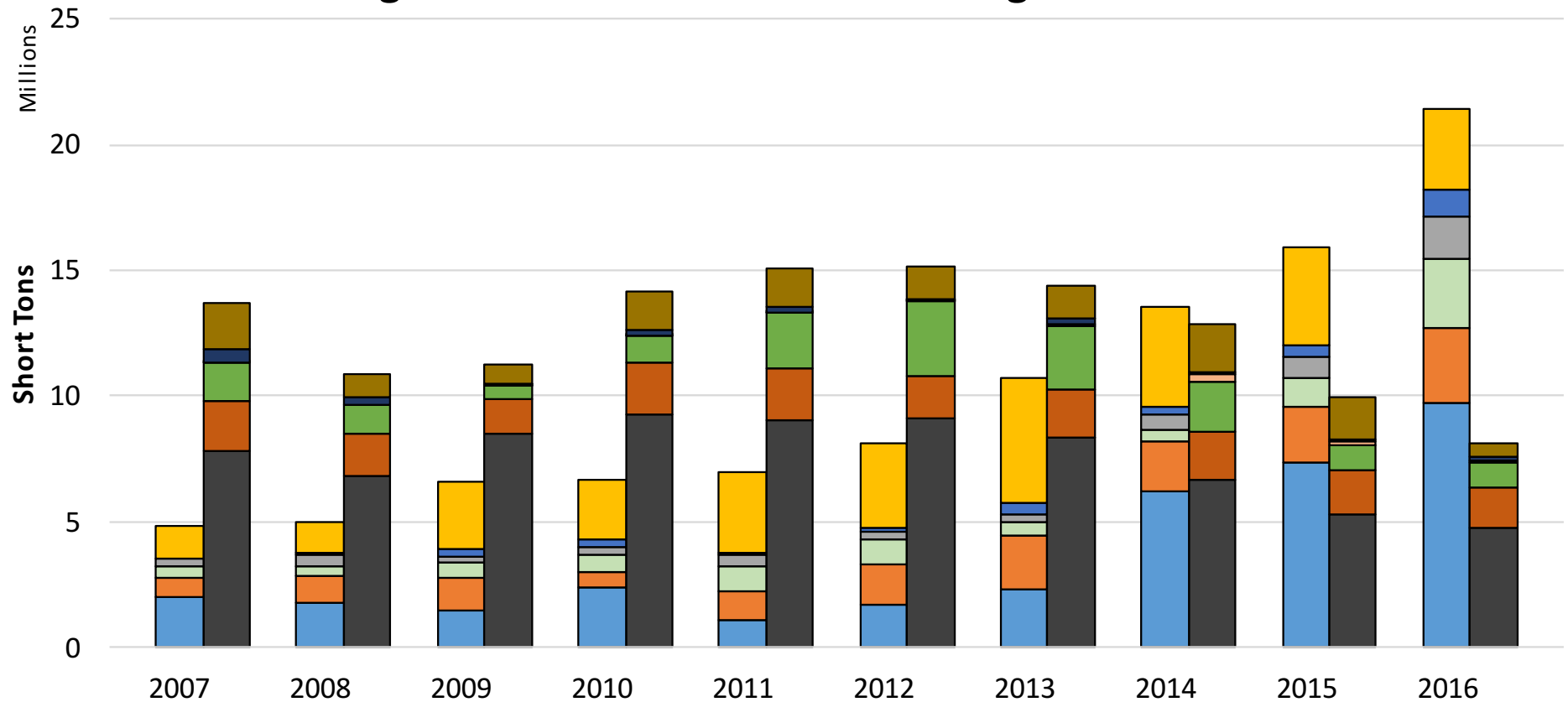
Source of data: United States Army Corps of Engineers, Navigation Data Center, 2018.



Top five waterborne commodities by volume for the Port of Greater Baton Rouge in four categories: 2016

Domestic Receipts		Foreign Shipments	
Commodity	2016 Volume (tons)	Commodity	2016 Volume (tons)
Soybeans	3,372,126	Soybeans	4,360,907
Corn	2,855,648	Corn	3,474,790
Limestone	1,535,226	Alcohols	1,845,966
Petroleum Coke	1,366,891	Distillate Fuel Oil	1,669,084
Crude Petroleum	<u>1,036,316</u>	Petroleum Coke	<u>1,667,938</u>
Combined Volume of Top Five	10,166,207	Combined Volume of Top Five	13,018,685
Total Vol. of Domestic Receipts	20,403,266	Total Vol. of Foreign Shipments	21,408,507
Top Five Volume/Total Volume	49.8%	Top Five Volume/Total Volume	60.8%
Foreign Receipts		Domestic Shipments	
Commodity	2016 Volume (tons)	Commodity	2016 Volume (tons)
Crude Petroleum	2,724,229	Nitrogenous Fertilizer	3,641,298
Distillate Fuel Oil	1,768,176	Sodium Hydroxide	2,347,561
Aluminum Ore	871,619	Distillate Fuel Oil	2,302,188
Benzene & Toluene	515,380	Residual Fuel Oil	1,776,216
Limestone	<u>367,481</u>	Coal Coke	<u>1,438,092</u>
Combined Volume of Top Five	6,246,885	Combined Volume of Top Five	11,505,355
Total Vol. of Foreign Receipts	8,150,521	Total Vol. of Domestic Shipments	20,183,501
Top Five Volume/Total Volume	76.6%	Top Five Volume/Total Volume	57.0%

Volumes of Leading Export and Import Commodity Groupings through the Port of Greater Baton Rouge: 2007-2016



- | | |
|---|---|
| ■ Grains, Oilseeds, Animal Feeds, etc. (Exports) | ■ Crude Oil & Liquid Petroleum Products (Exports) |
| ■ Chemicals & Minerals (Exports) | ■ Coal, Lignite, and Petroleum Coke (Exports) |
| ■ Fertilizers (Exports) | ■ All Commodities outside Top 10 (Exports) |
| ■ Crude Oil & Liquid Petroleum Products (Imports) | ■ Chemicals & Minerals (Imports) |
| ■ Metals & Ores (Imports) | ■ Unknown & NEC (Imports) |
| ■ Fertilizers (Imports) | ■ All Commodities outside Top 10 (Imports) |

Figure 11. Capacity of bulk carrier *Thisseas* compared to tractor-trailers

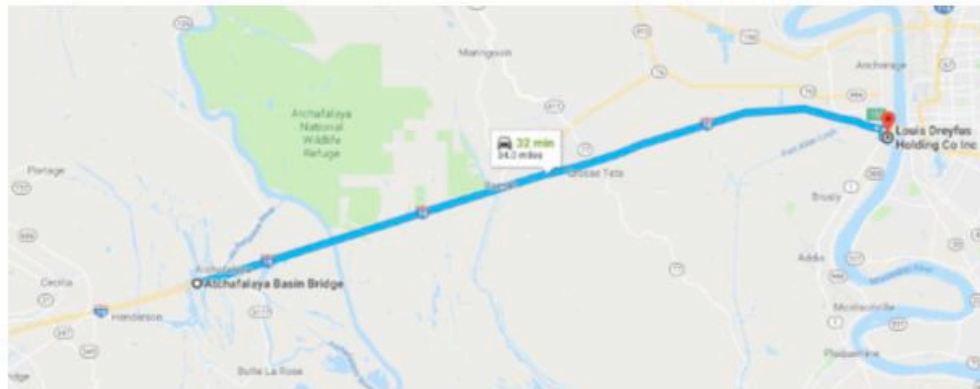


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2,763 semi loads of soybeans

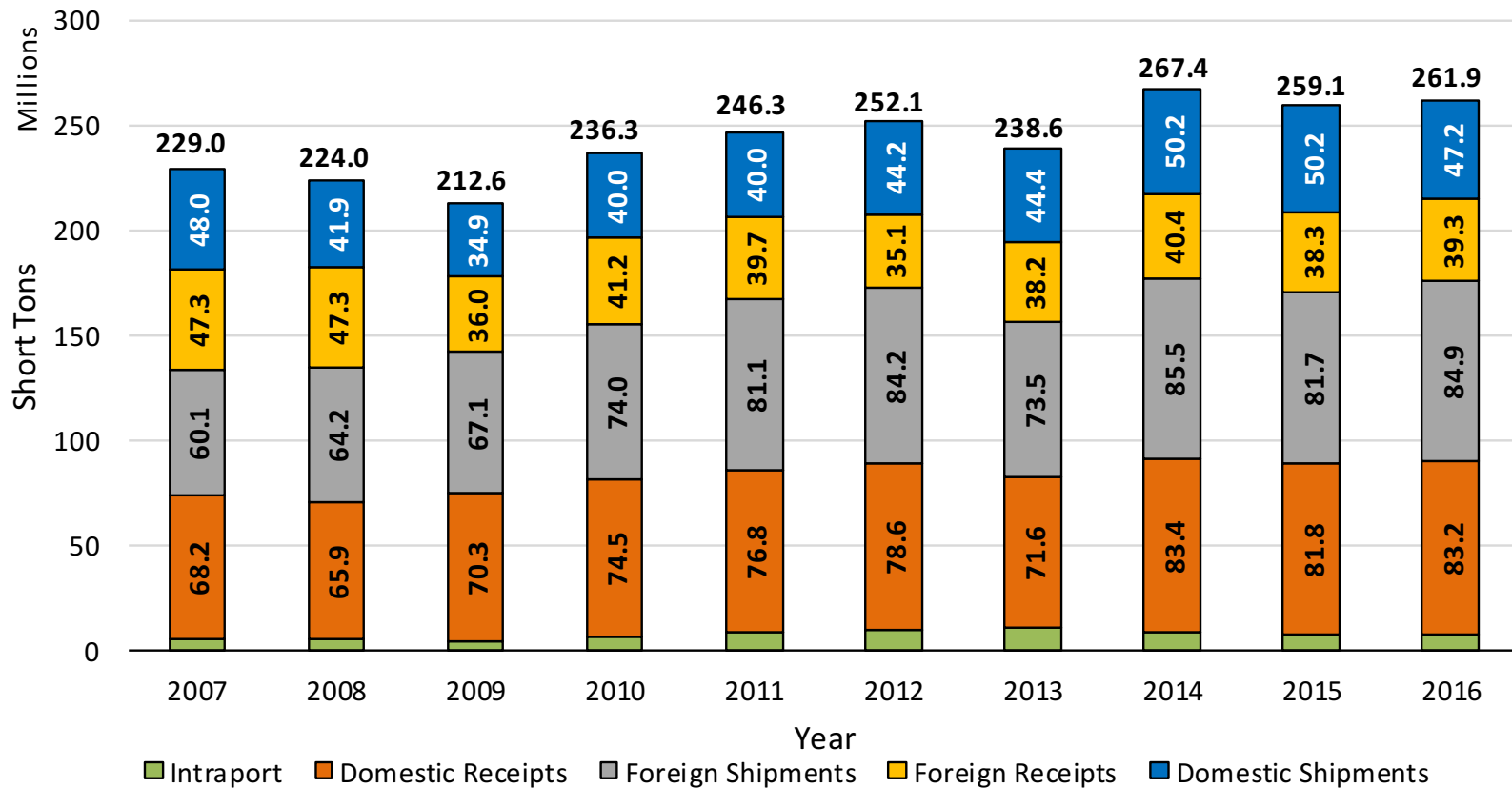
A line of trucks nose-to-tail from the Dreyfus grain elevator in Port Allen across the Atchafalaya River (34 miles)



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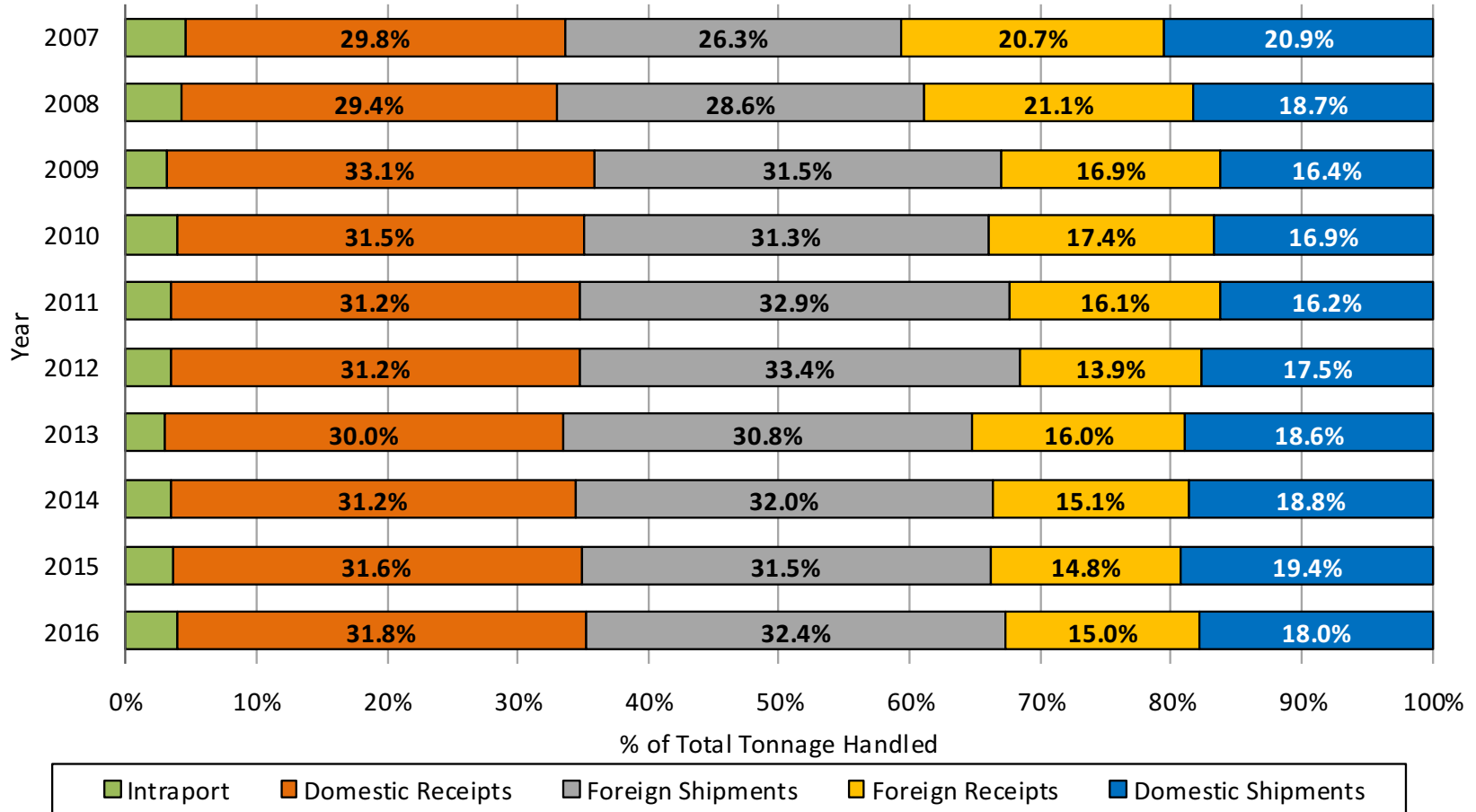
Port of South Louisiana Cargo Volume by Source and Direction: 2007-2016



Source of data: United States Army Corps of Engineers, Navigation Data Center, 2018.



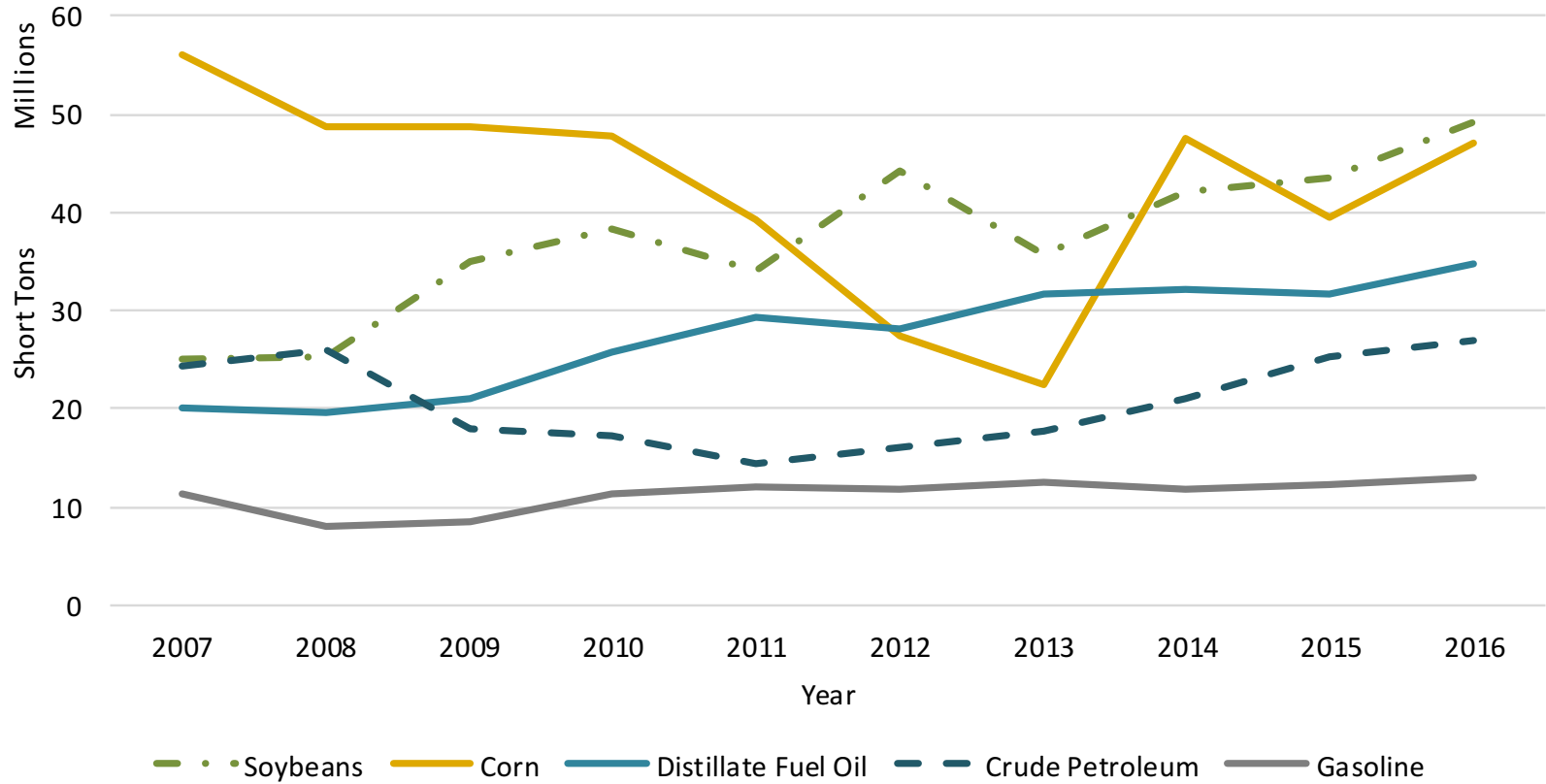
Port of South Louisiana - Percentage of Total Cargo Volume by Source and Direction: 2007-2016



Source of data: United States Army Corps of Engineers, Navigation Data Center, 2018.



Volume of Top Five (2007/2016) Commodities Handled at the Port of South Louisiana (excluding intraport movements): 2007-2016



Source of data: United States Army Corps of Engineers, Navigation Data Center, 2018.

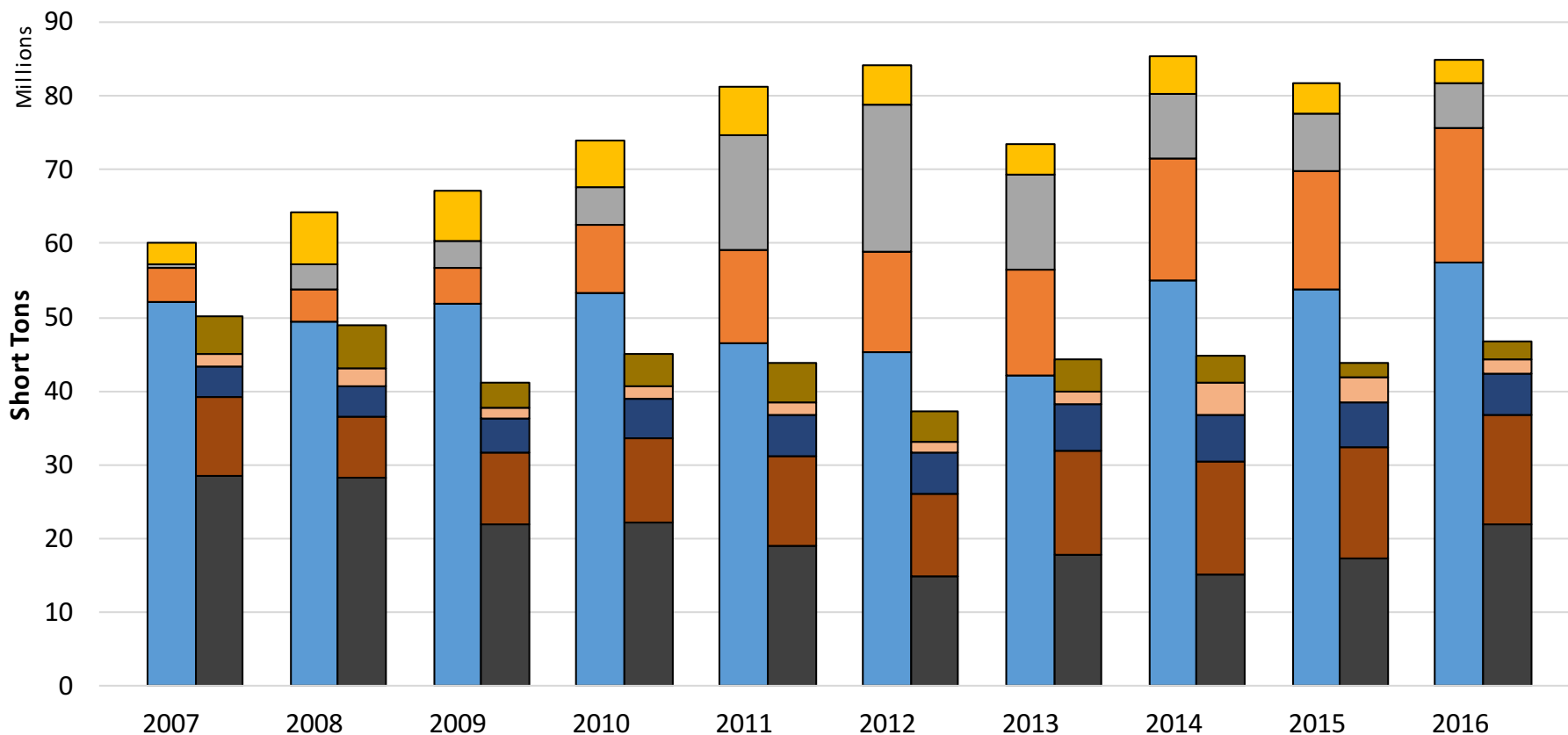


Top five waterborne commodities by volume for the Port of South Louisiana in four categories: 2016.

Domestic Receipts		Foreign Shipments	
Commodity	2016 Volume (tons)	Commodity	2016 Volume (tons)
Soybeans	24,011,624	Soybeans	25,035,725
Corn	23,042,144	Corn	23,907,246
Crude Petroleum	8,771,330	Distillate Fuel Oil	14,038,271
Distillate Fuel Oil	4,886,371	Coal & Lignite	4,919,023
Animal Feed, Prepared	<u>3,153,314</u>	Animal Feed, Prepared	<u>3,146,248</u>
Combined Volume of Top Five	63,864,783	Combined Vol. of Top Five	71,046,513
Total Vol. of Domestic Receipts	83,203,555	Total Vol. of Foreign Shipments	84,927,630
Top Five Volume/Total Volume	76.8%	Top Five Volume/Total Volume	83.7%
Foreign Receipts		Domestic Shipments	
Commodity	2016 Volume (tons)	Commodity	2016 Volume (tons)
Crude Petroleum	11,558,506	Gasoline	10,442,234
Distillate Fuel Oil	9,812,116	Distillate Fuel Oil	5,939,944
Aluminum Ore	3,628,227	Petroleum Coke	3,935,744
Nitrogenous Fertilizer	3,131,981	Crude Petroleum	3,684,585
Iron Ore	<u>1,923,569</u>	Residual Fuel Oil	<u>3,369,559</u>
Combined Volume of Top Five	30,054,399	Combined Volume of Top Five	27,372,066
Total Vol. of Foreign Receipts	39,341,620	Total Vol. of Domestic Shipments	47,236,480
Top Five Volume/Total Volume	76.4%	Top Five Volume/Total Volume	57.9%

Source of data: United States Army Corps of Engineers, Navigation Data Center, 2018.

Volumes of Leading Export and Import Commodity Groupings through the Port of South Louisiana: 2007-2016



- Grains, Oilseeds, Animal Feeds, Veg. Oils, etc. (Exports)
- Coal, Lignite, and Petroleum Coke (Exports)
- Crude Oil & Liquid Petroleum Products (Imports)
- Fertilizers (Imports)
- All Commodities outside Top 10 (Imports)

- Crude Oil & Liquid Petroleum Products (Exports)
- All Commodities outside Top 10 (Exports)
- Metals & Ores (Imports)
- Chemicals & Minerals (Imports)

Figure 22. Capacity of crude oil tanker *Evridiki* compared to tanker trailers



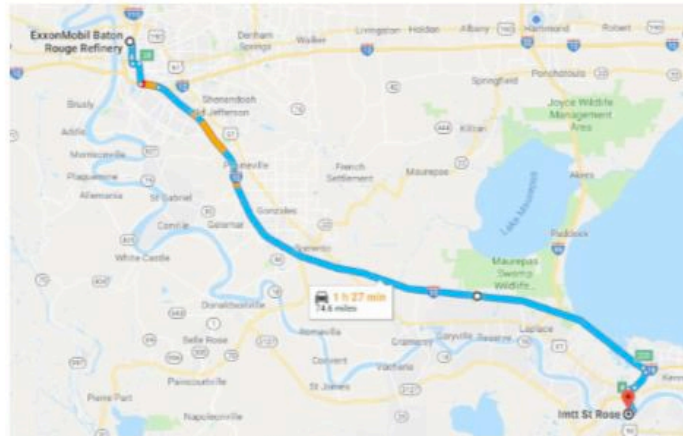
Evridiki

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5,723 semi loads of crude oil

A line of trucks nose-to-tail from the IMTT St. Rose terminal to the ExxonMobil Refinery in Baton Rouge (74.4 miles)

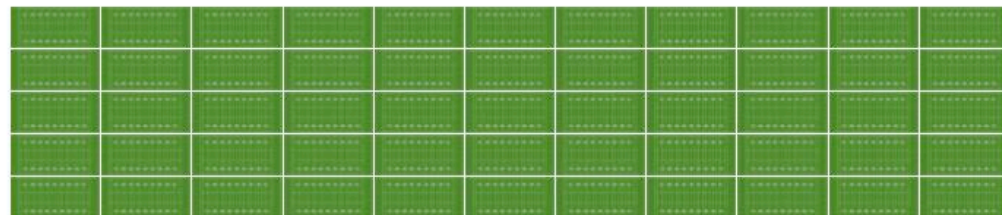


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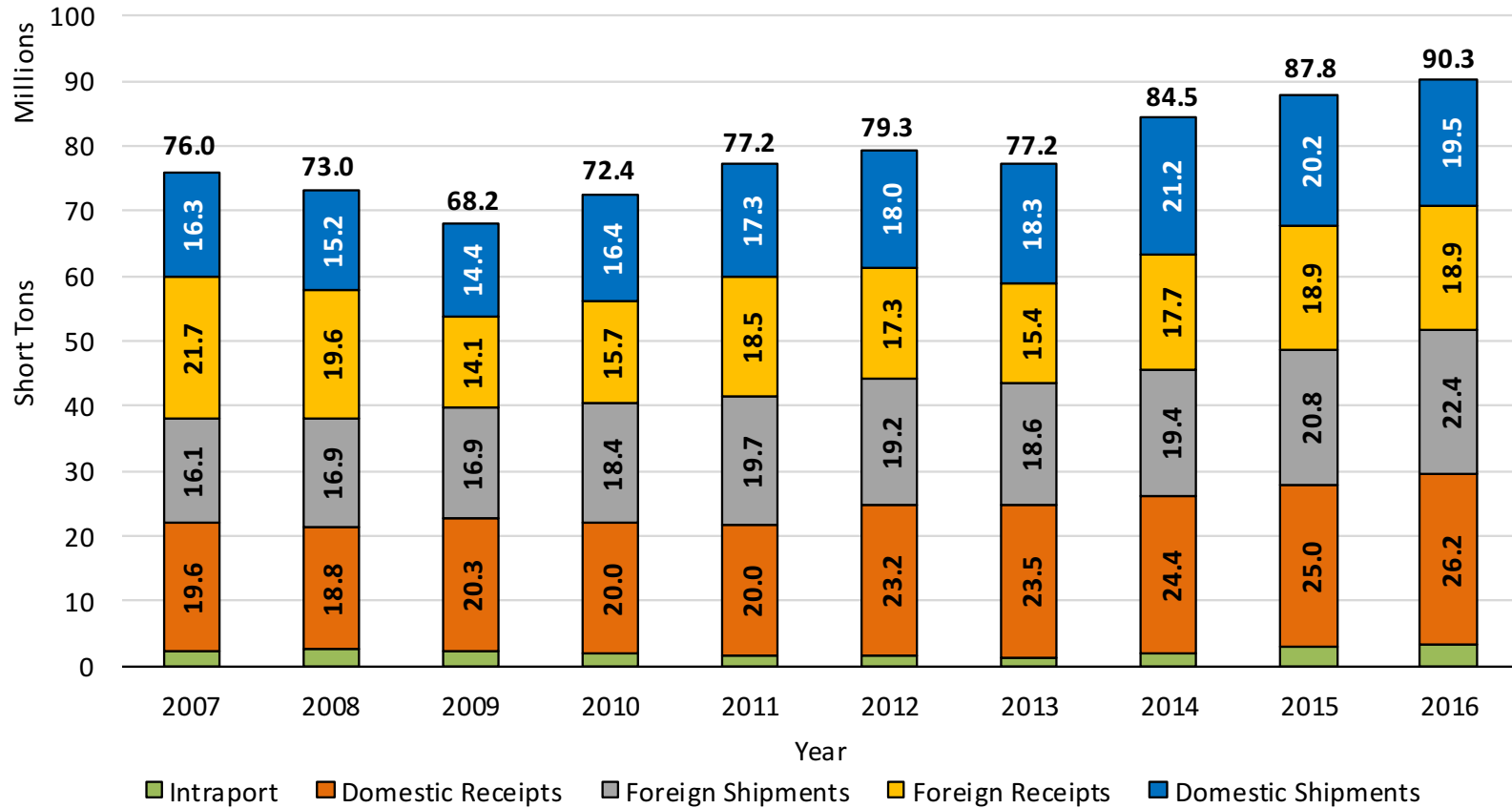


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72.6 acres of parked trucks touching on all sides (55 football fields)



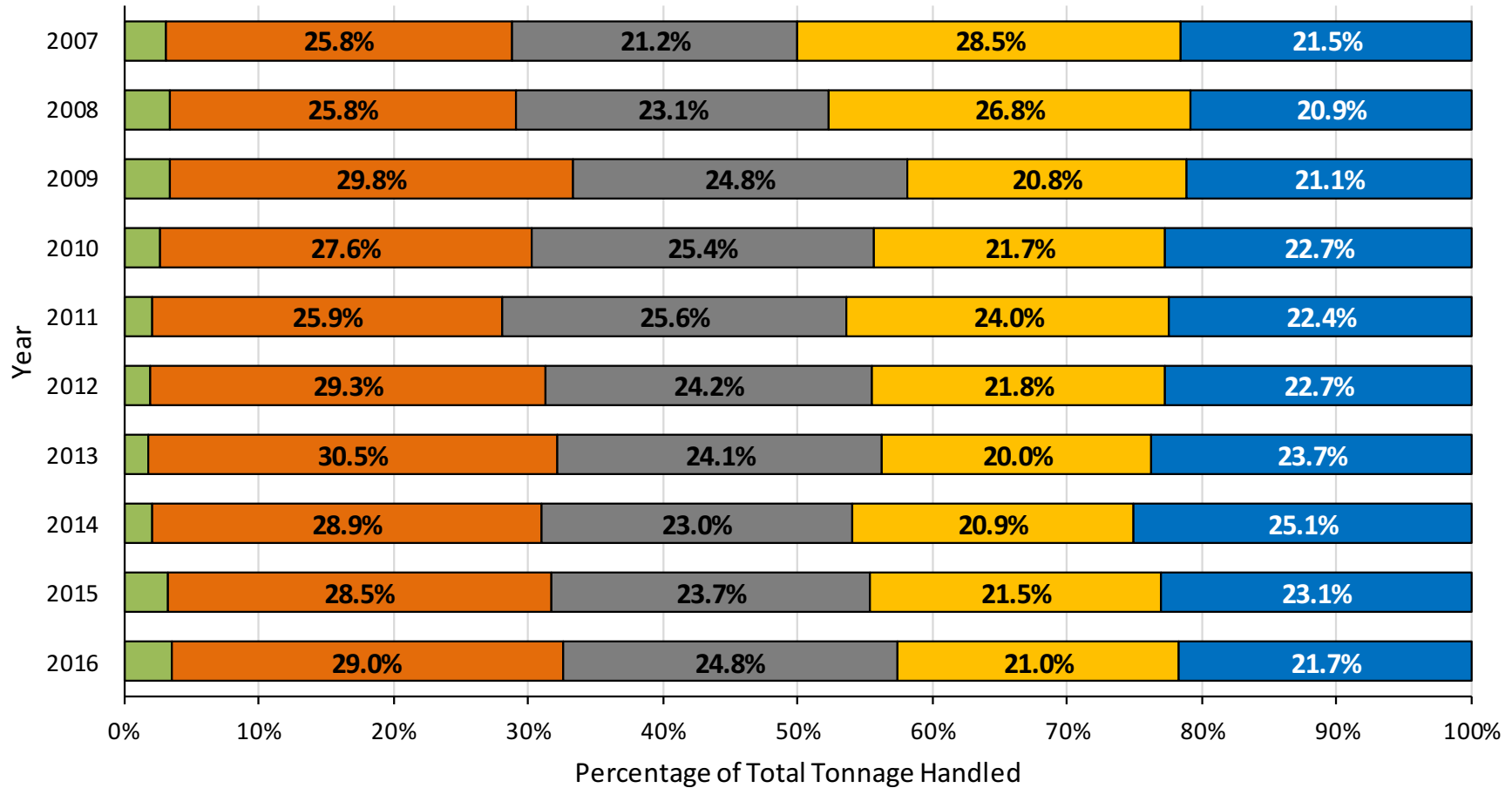
Port of New Orleans Cargo Volume by Source and Direction: 2007-2016



Source of data: United States Army Corps of Engineers, Navigation Data Center, 2018.



Port of New Orleans - Percentage of Total Cargo Volume by Source and Direction: 2007-2016

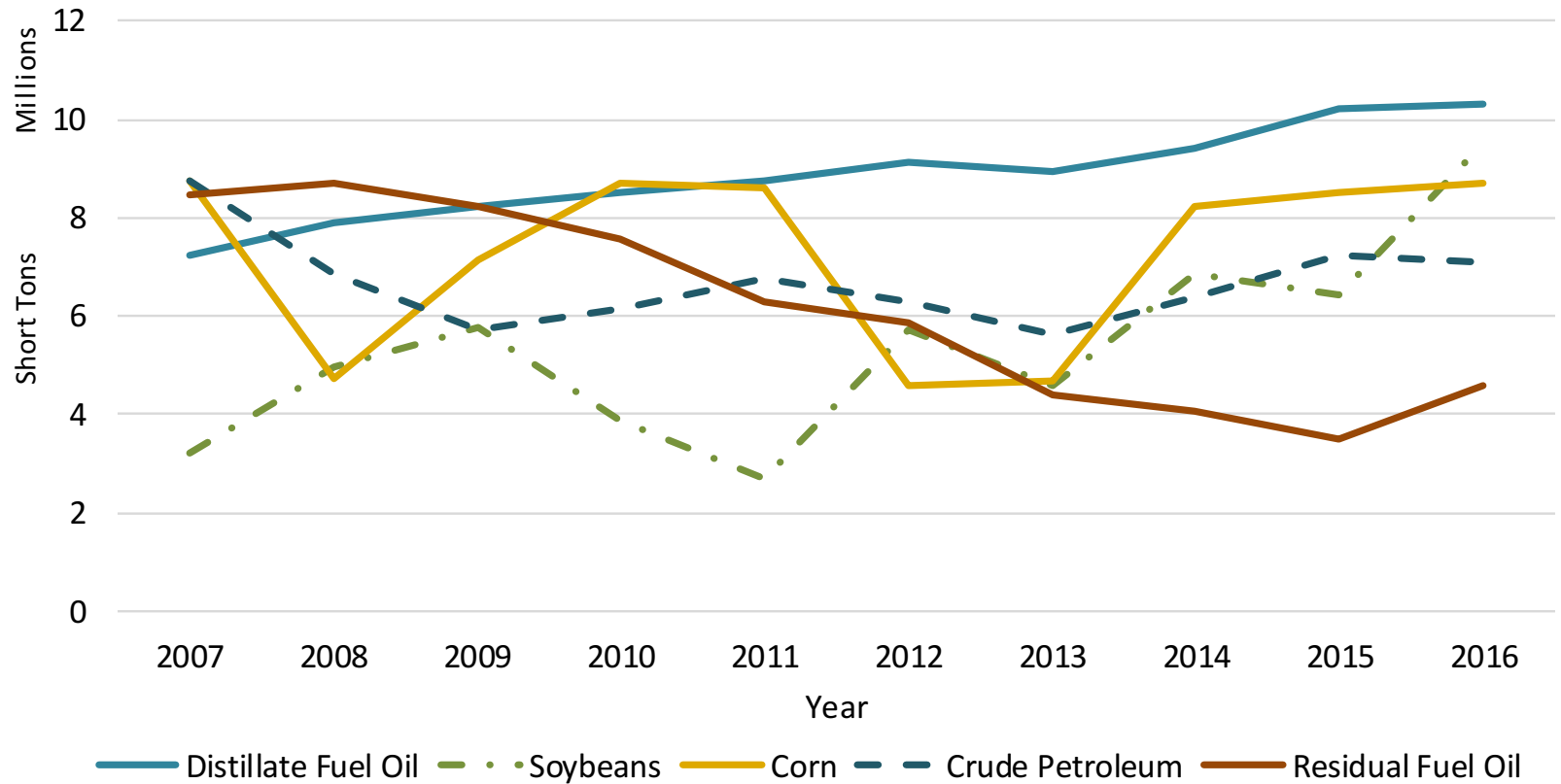


■ Intraport
 ■ Domestic Receipts
 ■ Foreign Shipments
 ■ Foreign Receipts
 ■ Domestic Shipments

Source of data: United States Army Corps of Engineers, Navigation Data Center, 2018.



Volume of Top Five (2007/2016) Commodities Handled at the Port of New Orleans (excluding intraport movements): 2007-2016



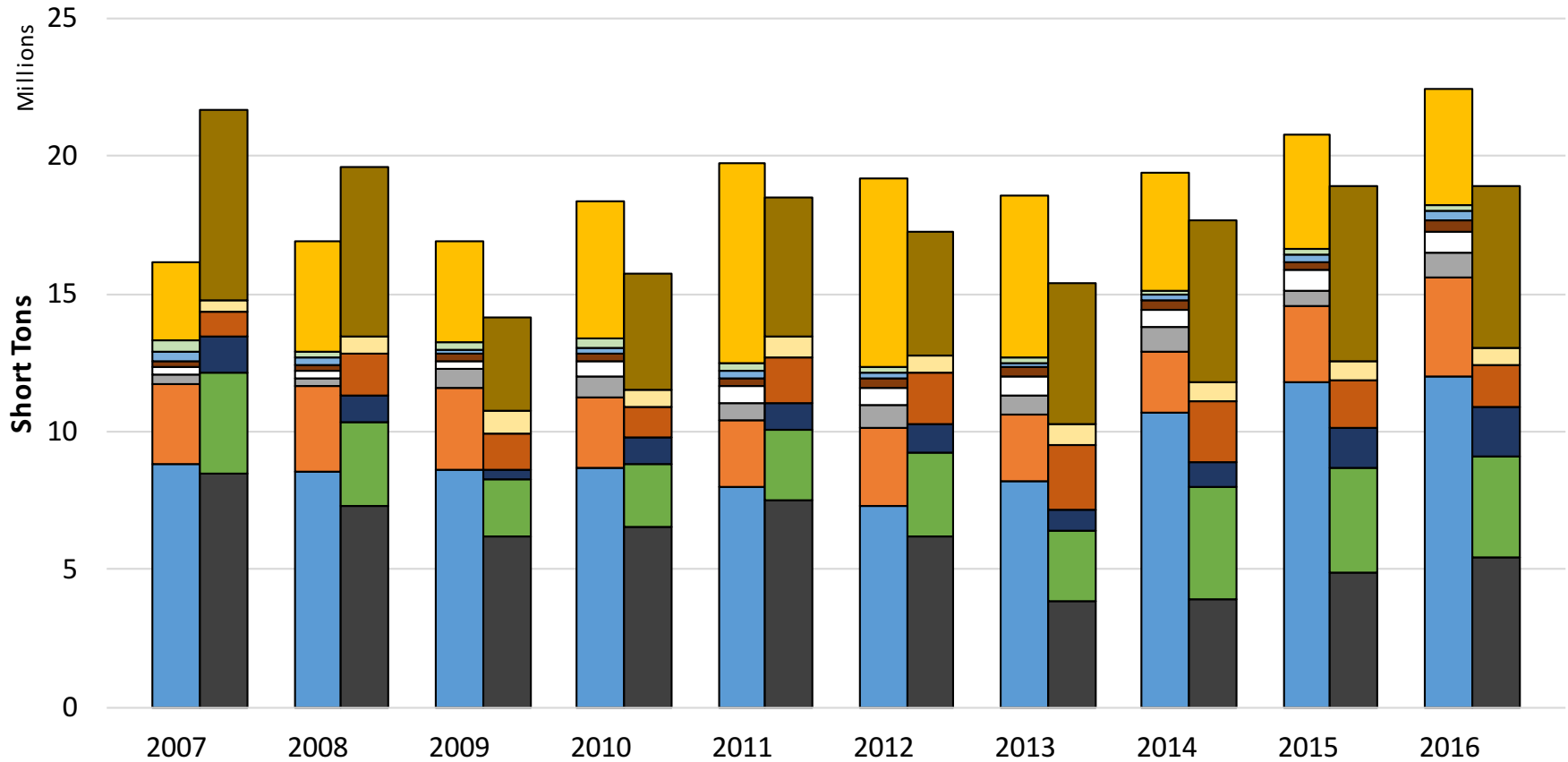
Source of data: United States Army Corps of Engineers, Navigation Data Center, 2018.



Top five waterborne commodities by volume for the Port of New Orleans in four categories: 2016.

Domestic Receipts		Foreign Shipments	
Commodity	2016 Volume (tons)	Commodity	2016 Volume (tons)
Soybeans	4,624,416	Soybeans	4,842,269
Corn	4,247,666	Corn	4,447,992
Distillate Fuel Oil	3,028,811	Distillate Fuel Oil	2,535,121
Crude Petroleum	2,750,955	Animal Feed, Prepared	1,518,562
Residual Fuel Oil	<u>2,328,158</u>	Petroleum Coke	<u>884,614</u>
Combined Volume of Top Five	16,980,006	Combined Volume of Top Five	14,228,558
Total Vol. of Domestic Receipts	26,219,142	Total Vol. of Foreign Shipments	22,416,971
Top Five Volume/Total Volume	64.8%	Top Five Volume/Total Volume	63.5%
Foreign Receipts		Domestic Shipments	
Commodity	2016 Volume (tons)	Commodity	2016 Volume (tons)
Crude Petroleum	3,998,456	Distillate Fuel Oil	3,294,856
Nitrogenous Fertilizers	1,809,021	Nitrogenous Fertilizers	2,538,436
Distillate Fuel Oil	1,430,132	Residual Fuel Oil	1,637,769
Iron & Steel Bars & Shapes	842,083	Gasoline	1,363,057
Non-Metallic Minerals NEC	<u>830,056</u>	Non-Metallic Minerals NEC	<u>1,034,798</u>
Combined Volume of Top Five	8,909,748	Combined Volume of Top Five	9,868,916
Total Vol. of Foreign Receipts	18,928,842	Total Vol. of Dom. Shipments	19,548,623
Top Five Volume/Total Volume	47.1%	Top Five Volume/Total Volume	50.5%
Source of data: United States Army Corps of Engineers, Navigation Data Center, 2018.			

Volumes of Leading Export and Import Commodity Groupings through the Port of New Orleans: 2007-2016

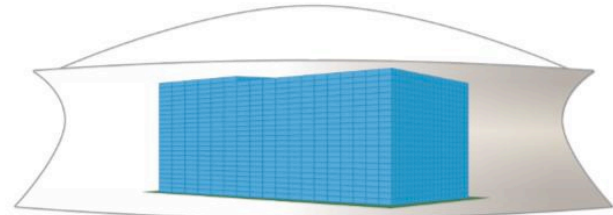


- | | |
|---|---|
| ■ Grains, Oilseeds, Animal Feeds, etc. (Exports) | ■ Crude Oil & Liquid Petroleum Products (Exports) |
| ■ Coal, Lignite, and Petroleum Coke (Exports) | ■ Plastics (Exports) |
| ■ Meat, Fresh, Frozen (Exports) | ■ Paper & Paperboard (Exports) |
| ■ Chemicals & Minerals (Exports) | ■ All Commodities outside Top 10 (Exports) |
| ■ Crude Oil & Liquid Petroleum Products (Imports) | ■ Metals & Ores (Imports) |
| ■ Fertilizers (Imports) | ■ Chemicals & Minerals (Imports) |
| ■ Vegetable Oils (Imports) | ■ All Commodities outside Top 10 (Imports) |

Figure 32. Container ship *MSC Rania*.



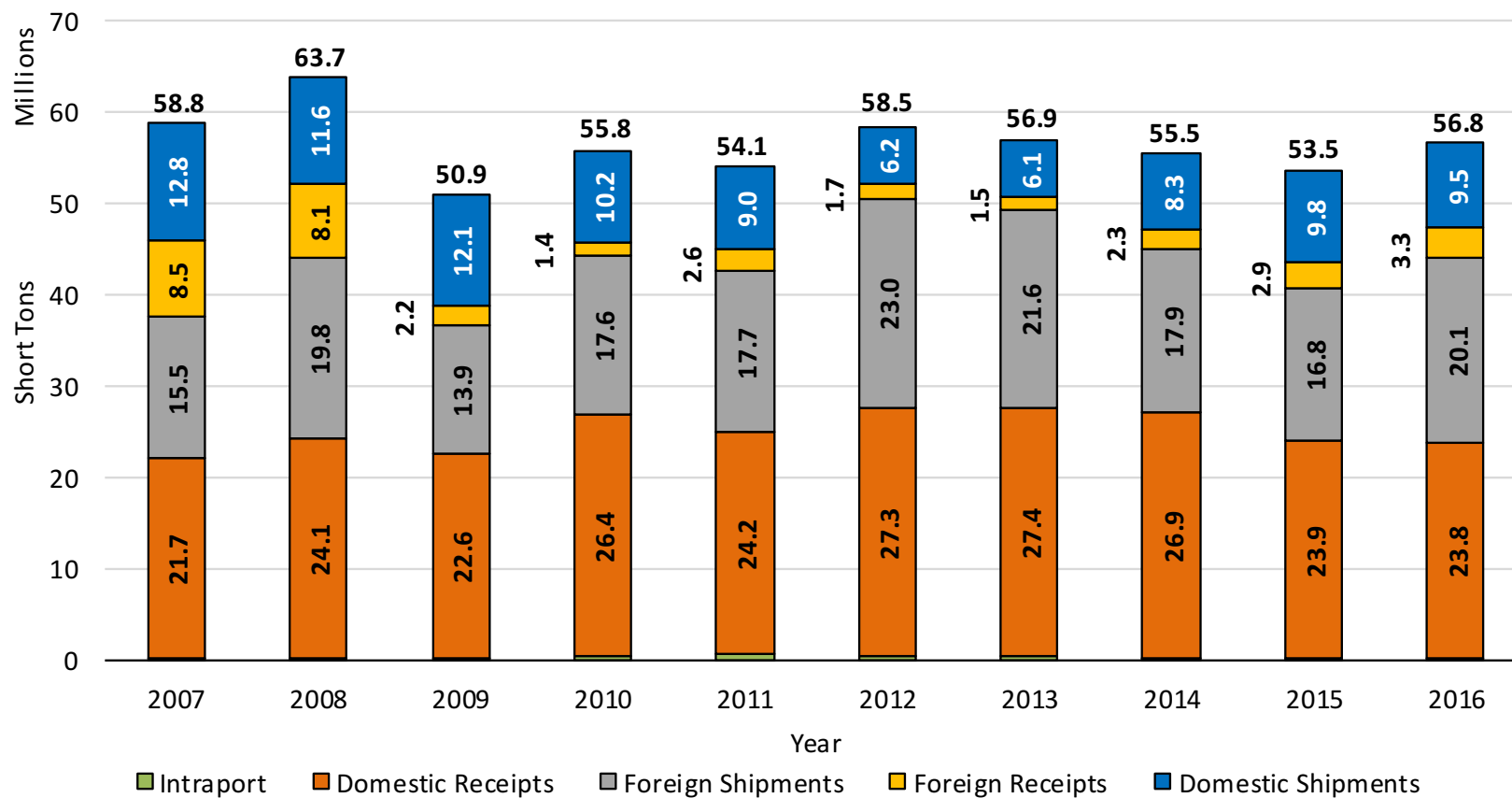
Figure 33. Scaled representation of 8,400 20-foot shipping containers (capacity of *MSC Rania*) stacked in the Mercedes Benz™ Superdome



© Image courtesy of Caleb G. Holloway. Used with permission.

- The specific cargo carried by the *MSC Rania* is not known. If it was importing coffee beans for the Folgers™ roasting facility in New Orleans, the *MSC Rania* could have been loaded with a maximum of 5,117 twenty-foot shipping containers (due to the density of coffee beans).
- With each container holding a little more than 44,000 pounds, there would be a total of almost **226 million pounds of green coffee beans** aboard the *MSC Rania*.
- After roasting, 226 million pounds of green coffee beans would yield approximately 189.5 million pounds of roasted coffee, or **268.3 million 11.3 ounce cans** of Folgers™ coffee.
- At a standard strength of .345 ounces of coffee per 6-ounce cup (“Coffee Standards. (n.d.)”), 268.3 million cans of coffee would yield **8.9 billion cups of coffee**.

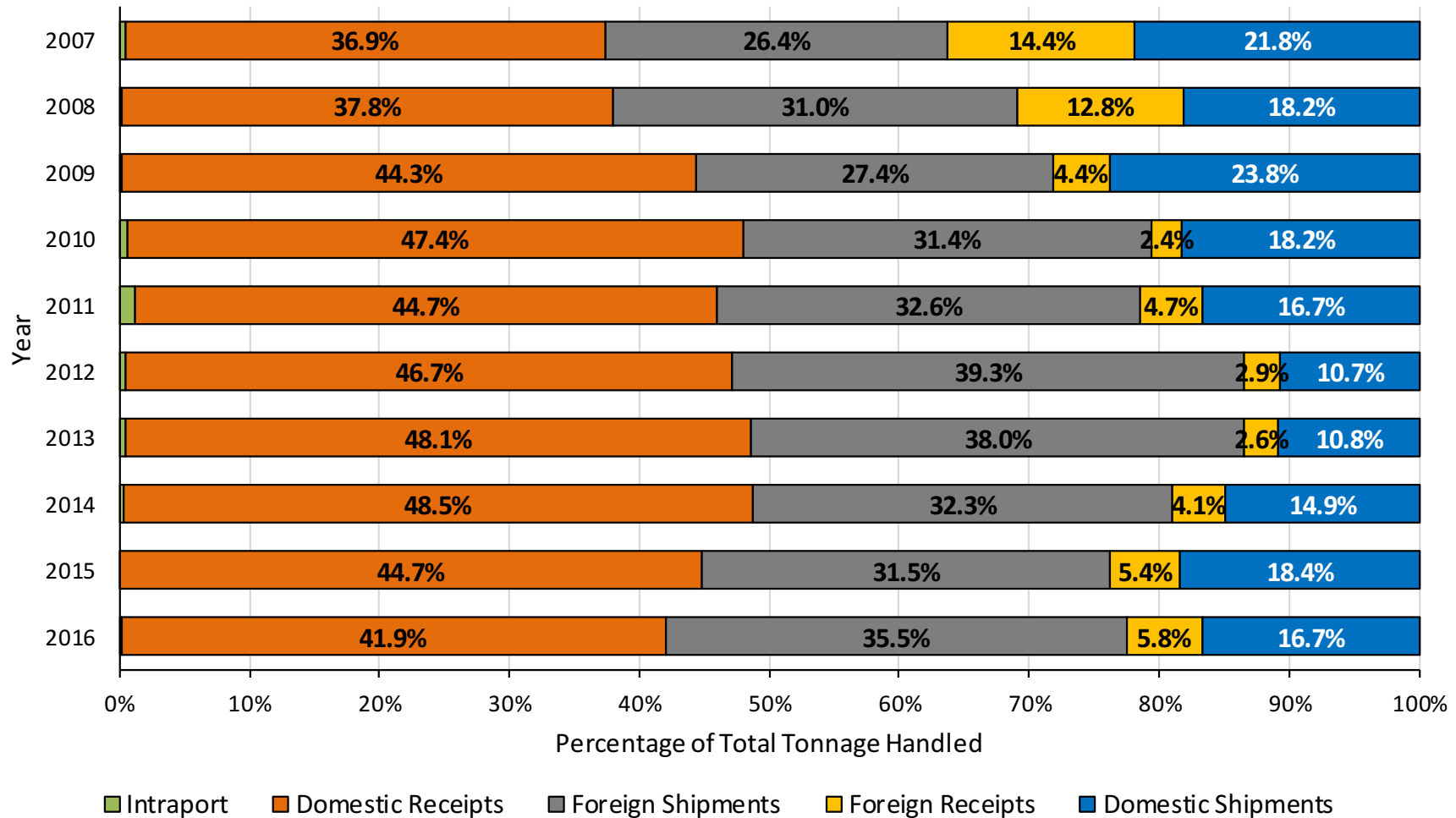
Plaquemines Port Cargo Volume by Source and Direction: 2007-2016



Source of data: United States Army Corps of Engineers, Navigation Data Center, 2018.



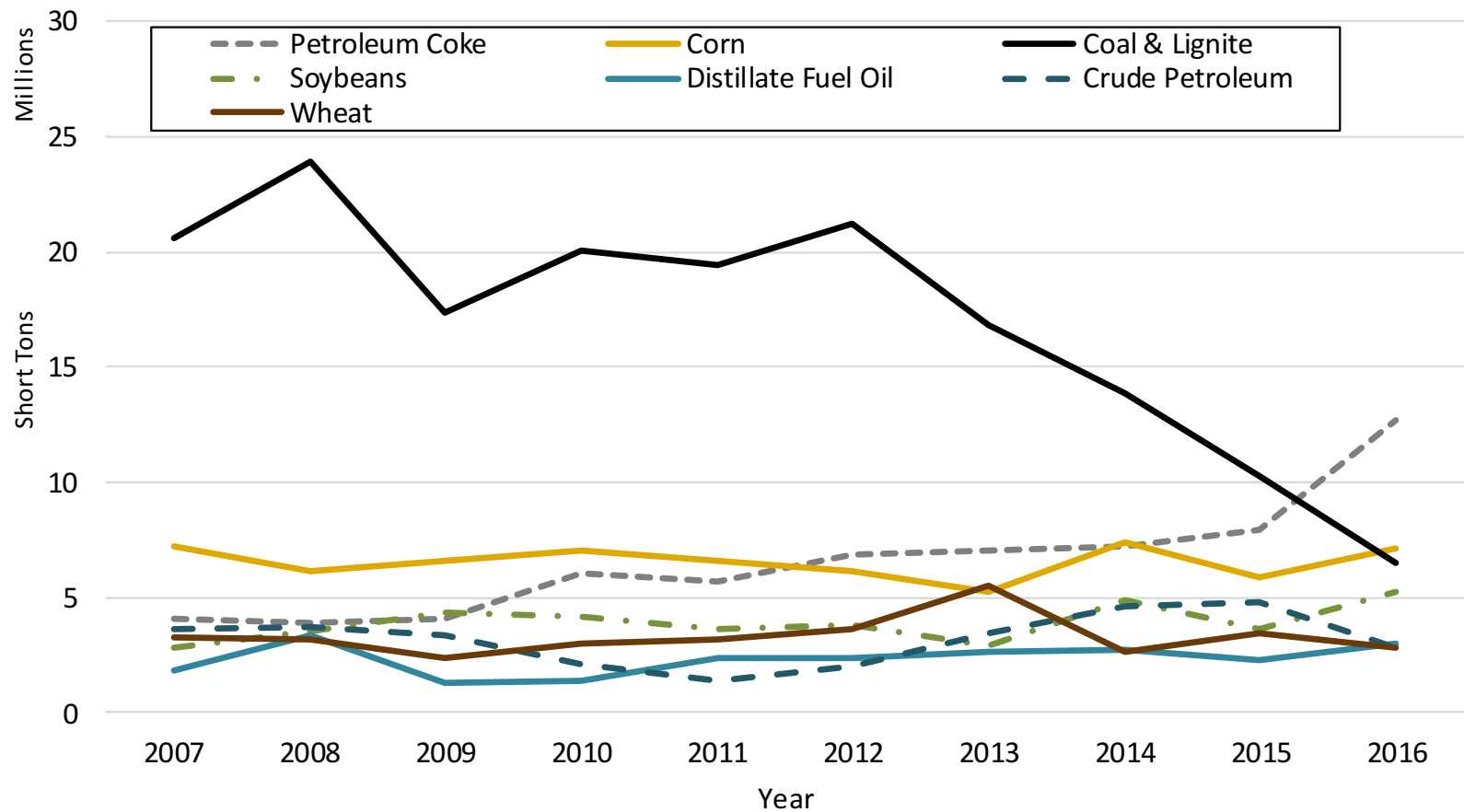
Plaquemines Port - Percentage of Total Cargo Volume by Source and Direction: 2007-2016



Source of data: United States Army Corps of Engineers, Navigation Data Center, 2018.



Volume of Top Five (2007/2016) Commodities Handled by Plaquemines Port (excluding intraport movements): 2007-2016



Source of data: United States Army Corps of Engineers, Navigation Data Center, 2018.



Top five waterborne commodities by volume for Plaquemines Port in four categories: 2016.

Domestic Receipts		Foreign Shipments	
Commodity	2016 Volume (tons)	Commodity	2016 Volume (tons)
Petroleum Coke	5,635,379	Petroleum Coke	5,878,060
Coal & Lignite	4,117,566	Corn	3,399,922
Corn	3,734,385	Soybeans	2,655,270
Soybeans	2,593,030	Distillate Fuel Oil	2,342,899
Coal Coke	<u>1,791,519</u>	Wheat	<u>1,392,441</u>
Combined Volume of Top Five	17,871,879	Combined Volume of Top Five	15,668,592
Total Vol. of Domestic Receipts	23,787,486	Total Vol. of Foreign Shipments	20,141,193
Top Five Volume/Total Volume	75.1%	Top Five Volume/Total Volume	77.8%
Foreign Receipts		Domestic Shipments	
Commodity	2016 Volume (tons)	Commodity	2016 Volume (tons)
Pig Iron	960,356	Coal & Lignite	1,936,983
Crude Petroleum	322,682	Pig Iron	1,311,397
Nitrogenous Fertilizers	268,345	Petroleum Coke	1,196,455
Distillate Fuel Oil	246,420	Gasoline	1,056,845
Unknown or NEC	<u>150,186</u>	Crude Petroleum	<u>871,522</u>
Combined Volume of Top Five	1,947,989	Combined Volume of Top Five	6,373,202
Total Vol. of Foreign Receipts	3,319,142	Total Vol. of Domestic Shipments	9,471,263
Top Five Volume/Total Volume	58.7%	Top Five Volume/Total Volume	67.3%

Source of data: United States Army Corps of Engineers, Navigation Data Center, 2018.

Volumes of Leading Export and Import Commodity Groupings through Plaquemines Port: 2007-2016

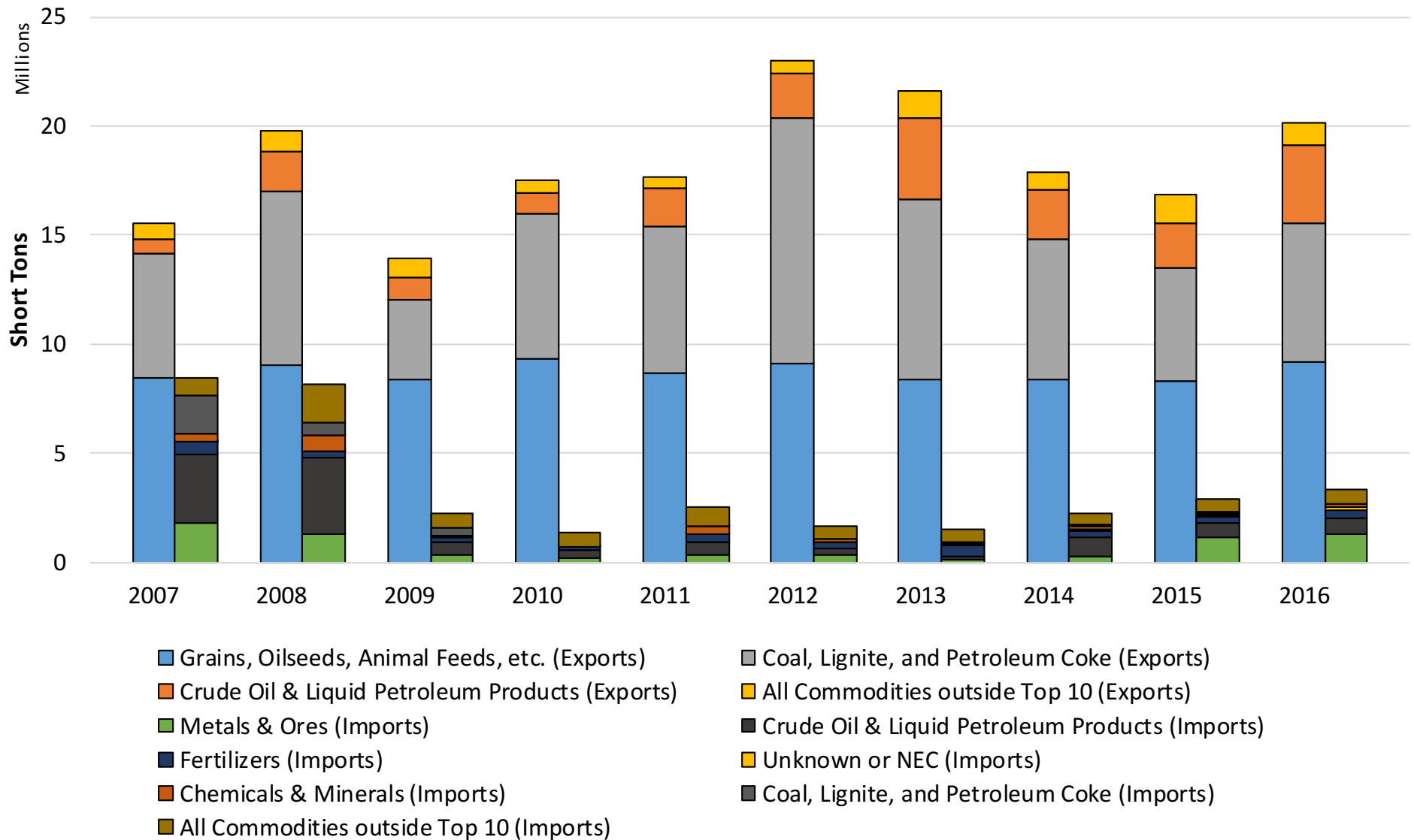
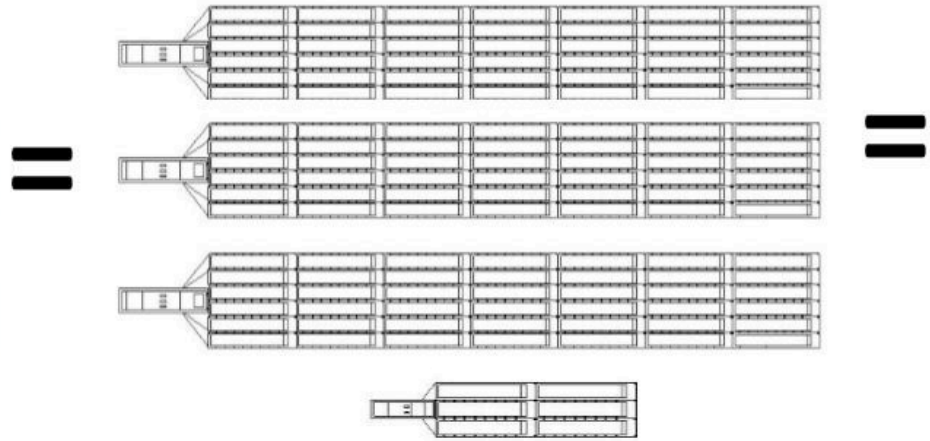


Figure 46. Capacity of bulk carrier *Chevrier* compared to barges and hopper railcars



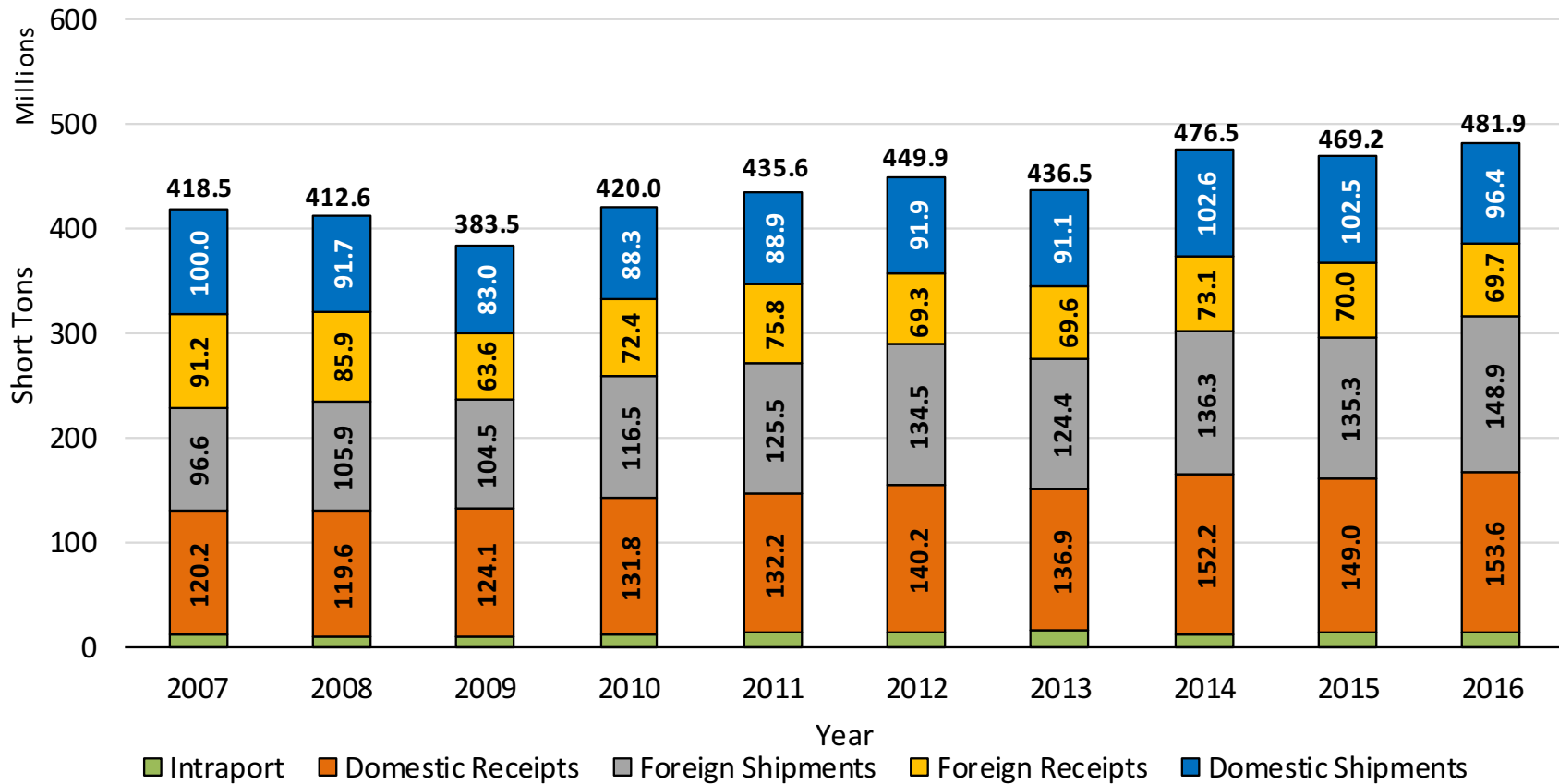
Three 42-barge tows + one 6-barge tow

1,678 hopper railcars
(stretching 17.1 miles)



Sources: Barge images from <https://towboattour.com/tows>. (6-barge tow created by authors from 15-barge tow image)
Hopper railcar image from <https://www.bnsf.com/ship-with-bnsf/ways-of-shipping/equipment/open-top-hoppers.html>.
Both sites accessed on 10/28/2018.

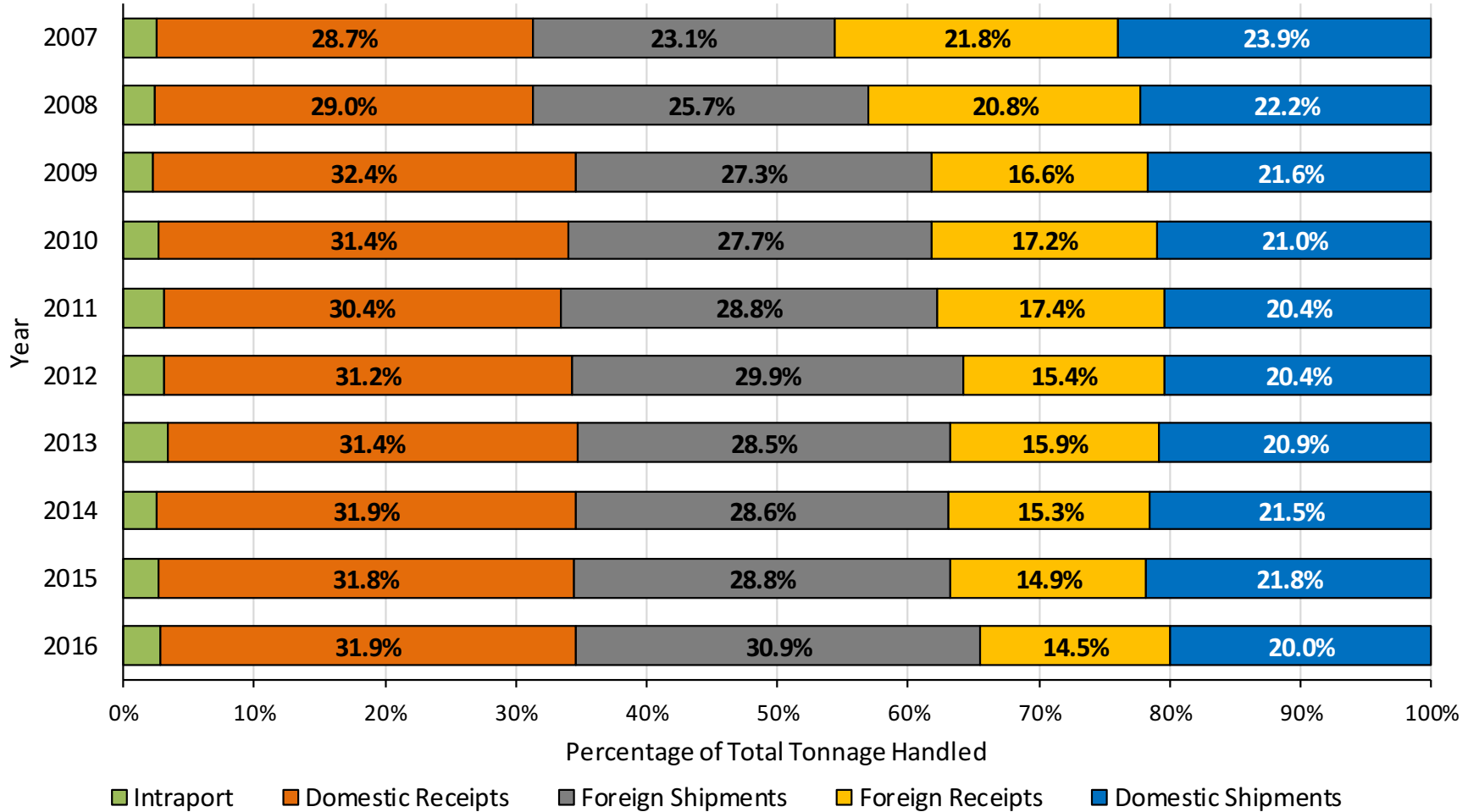
Cargo Volume by Source and Direction -- Four Deepwater Mississippi River Ports Combined : 2007-2016



Source of data: United States Army Corps of Engineers, Navigation Data Center, 2018.



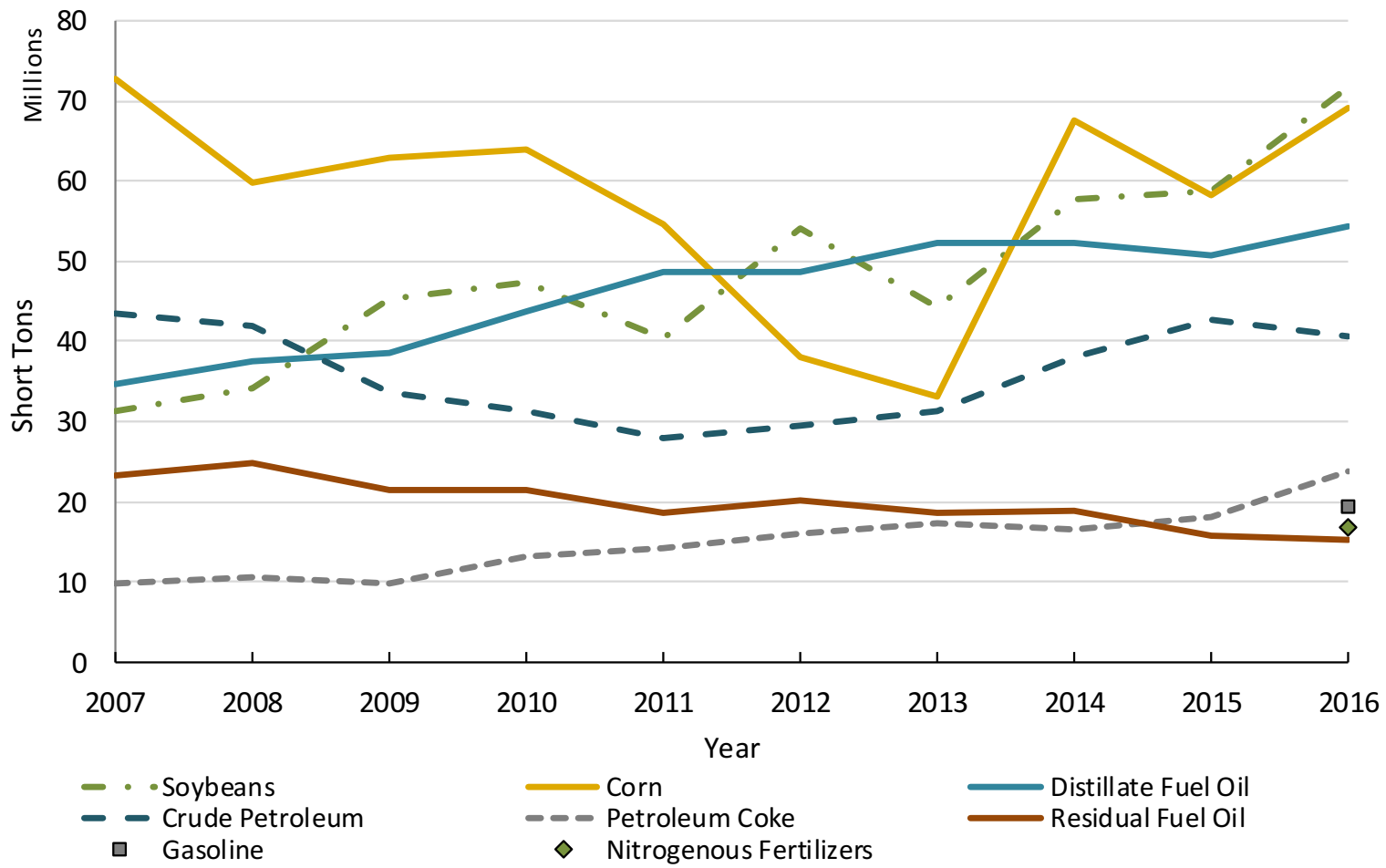
Percentage of Total Cargo Volume by Source and Direction --Four Deepwater Mississippi River Ports Combined: 2007-2016



Source of data: United States Army Corps of Engineers, Navigation Data Center, 2018.



Volume of Top Five (2007/2016) Commodities Handled at All Four Deepwater Mississippi River Ports (excluding intraport movements): 2007-2016



Source of data: United States Army Corps of Engineers, Navigation Data Center, 2018.

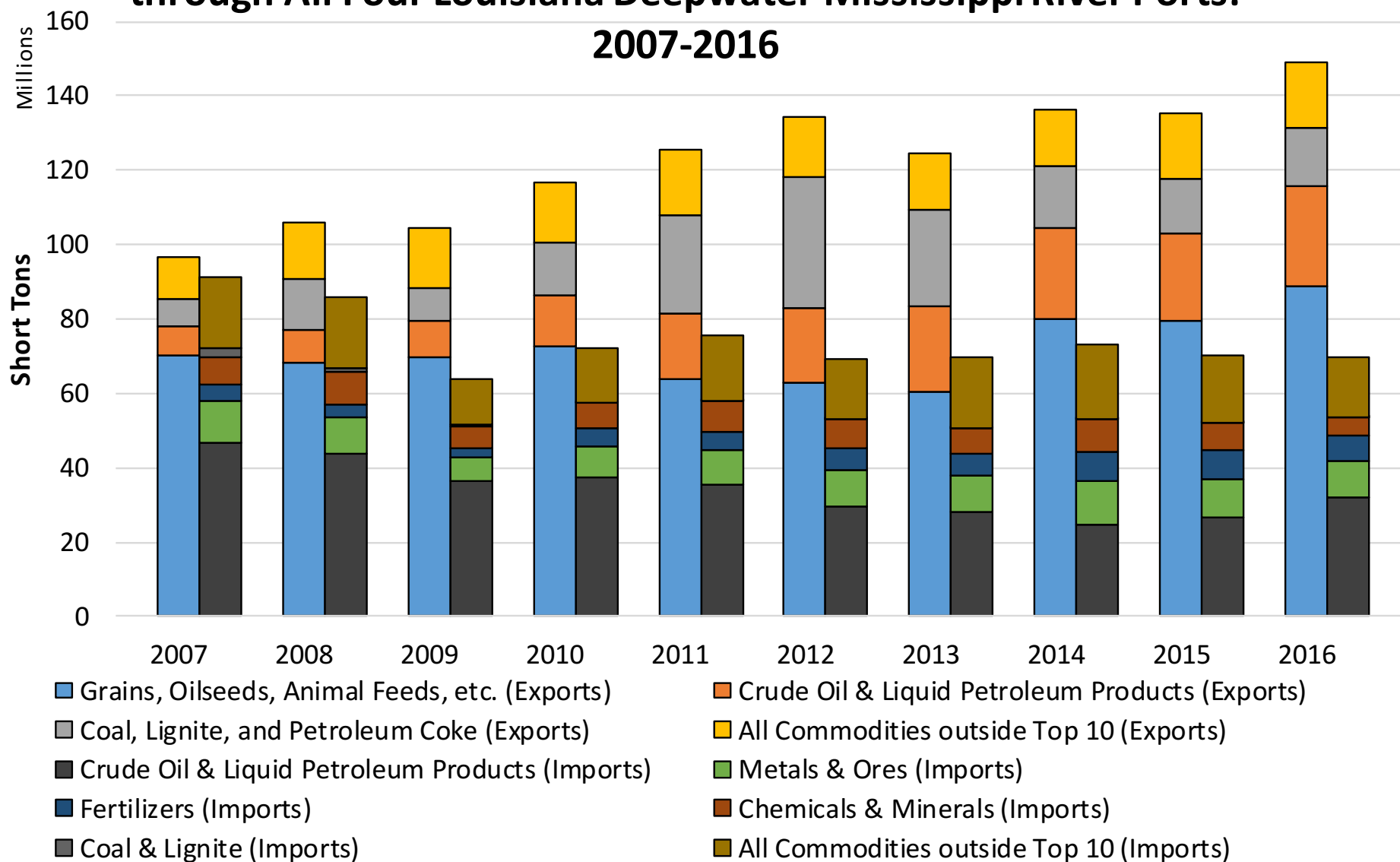


Top five waterborne commodities by volume handled by four deepwater Mississippi River ports (combined) in four categories: 2016.

Domestic Receipts		Foreign Shipments	
Commodity	2016 Volume (tons)	Commodity	2016 Volume (tons)
Soybeans	34,601,196	Soybeans	36,894,171
Corn	33,879,843	Corn	35,229,950
Crude Petroleum	13,838,063	Distillate Fuel Oil	20,585,375
Distillate Fuel Oil	8,726,585	Petroleum Coke	9,604,767
Petroleum Coke	<u>8,478,971</u>	Animal Feed, Prepared	<u>5,875,859</u>
Combined Volume of Top Five	99,524,658	Combined Volume of Top Five	108,190,122
Total Vol. of Domestic Receipts	153,613,449	Total Vol. of Foreign Shipments	148,894,301
Top Five Volume/Total Volume	64.8%	Top Five Volume/Total Volume	72.7%
Foreign Receipts		Domestic Shipments	
Commodity	2016 Volume (tons)	Commodity	2016 Volume (tons)
Crude Petroleum	18,603,873	Gasoline	13,958,196
Distillate Fuel Oil	13,256,844	Distillate Fuel Oil	11,891,520
Nitrogenous Fertilizers	5,309,354	Nitrogenous Fertilizers	9,575,740
Aluminum Ore	4,650,603	Residual Fuel Oil	7,173,520
Pig Iron	<u>3,100,841</u>	Petroleum Coke	<u>5,640,254</u>
Combined Volume of Top Five	44,921,515	Combined Volume of Top Five	48,239,230
Total Vol. of Foreign Receipts	69,740,125	Total Vol. of Domestic Shipments	96,439,867
Top Five Volume/Total Volume	64.4%	Top Five Volume/Total Volume	50.0%

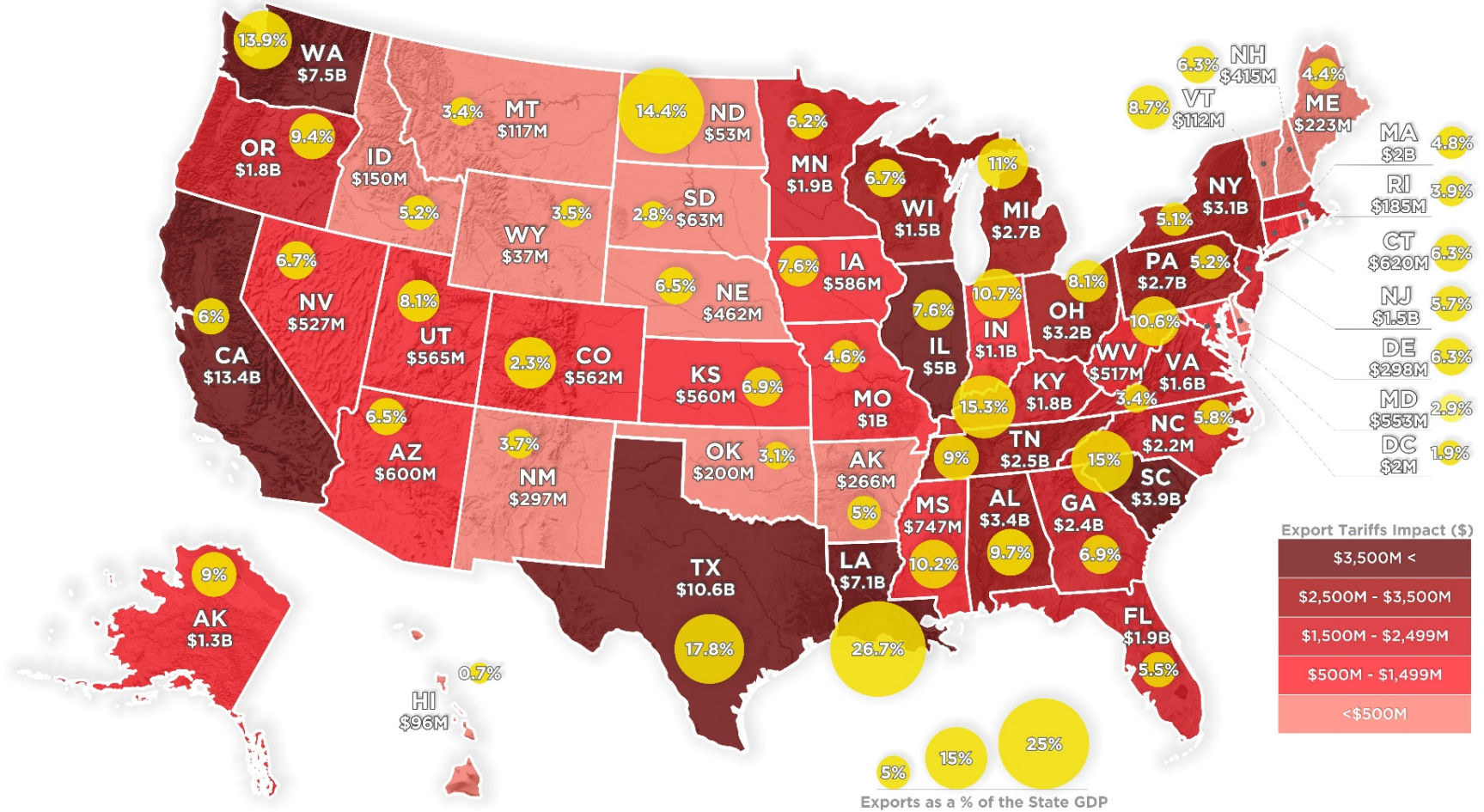
Source of data: United States Army Corps of Engineers, Navigation Data Center, 2018.

Volumes of Leading Export and Import Commodity Groupings through All Four Louisiana Deepwater Mississippi River Ports: 2007-2016



How Much Tariffs Could Cost Each State

Export Tariff Impact and Exports as a % of the State GDP



Article & Sources:
<https://howmuch.net/articles/how-much-tariffs-could-cost-each-state>
 U.S. Chamber of Commerce - <https://uschamber.com/>
 Bureau of Economic Analysis - <https://bea.gov/>

Thoughts, questions, etc. ???

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