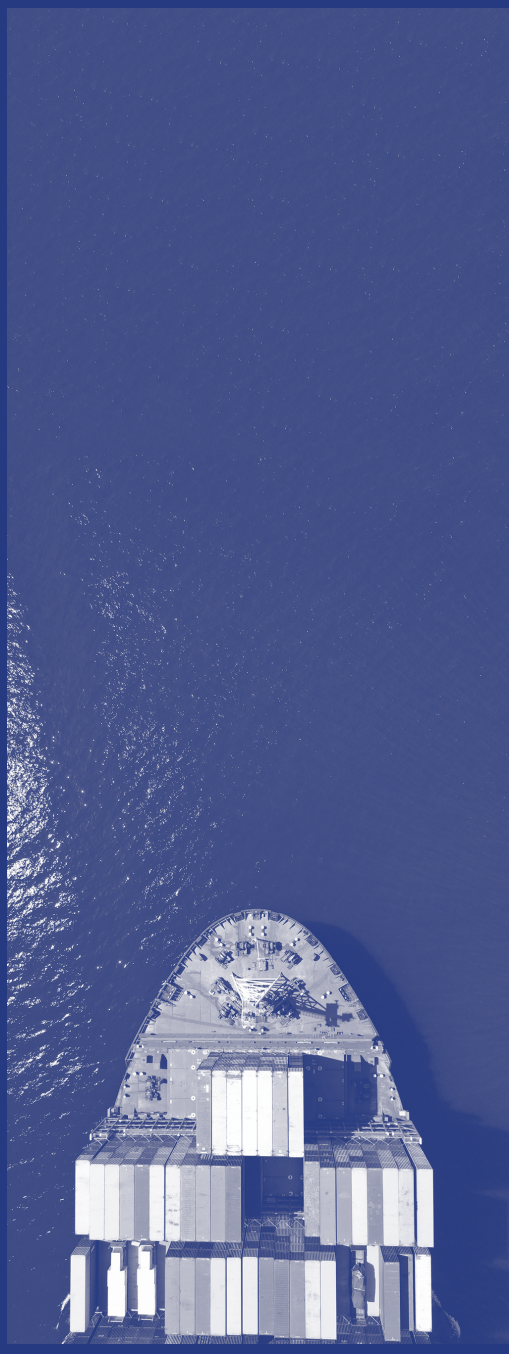
U.S. Department of Transportation
Office of the Secretary of Transportation
Bureau of Transportation Statistics

2022 Port Performance Freight Statistics Program: Supply-Chain Feature

January 2022



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Introduction

Pursuant to the requirements of Section 6018 of the *Fixing America's Surface Transportation Act* (FAST Act; P.L. 114-94; Dec. 4, 2015; 49 USC 6314), the Bureau of Transportation Statistics (BTS) has completed the 2022 annual report of the Port Performance Freight Statistics Program.

The FAST Act requires the Bureau of Transportation Statistics (BTS) to report on the top 25 maritime ports as measured by 1) overall cargo tonnage, 2) dry bulk cargo tonnage, or 3) by twenty foot equivalent unit (TEU) of containerized cargo. The program provides nationally consistent capacity and throughput performance measures for these ports.

As required, the annual report highlights summary statistics of the Nation's largest container, tonnage, and dry bulk ports and can be found at https://www.bts.gov/ports/.

Since the ranking of the top ports requires nationally consistent port data, the rankings of the top ports are based on the most recent annual data of 2020. Not to be limited by the availability of annual data, a special analysis of the recent supply-chain disruptions is included by using the complete 2020 and partial 2021 data.

In 2020, fifty ports are ranked among the top 25 maritime ports. Forty-six are located within the contiguous United States, plus 2 (Anchorage and Valdez) in Alaska, 1 (Honolulu) in Hawaii, and 1 (San Juan) in Puerto Rico. The ports in Baltimore, Houston, Mobile, New Orleans, and Virginia are in the top 25 for all three-cargo categories. Due to statistical boundary and definitional changes, the 2020 port data presented may not be comparable to that of previous years. More detailed statistics on throughput and capacity are available at https://www.bts.gov/ports.

Recommended citation

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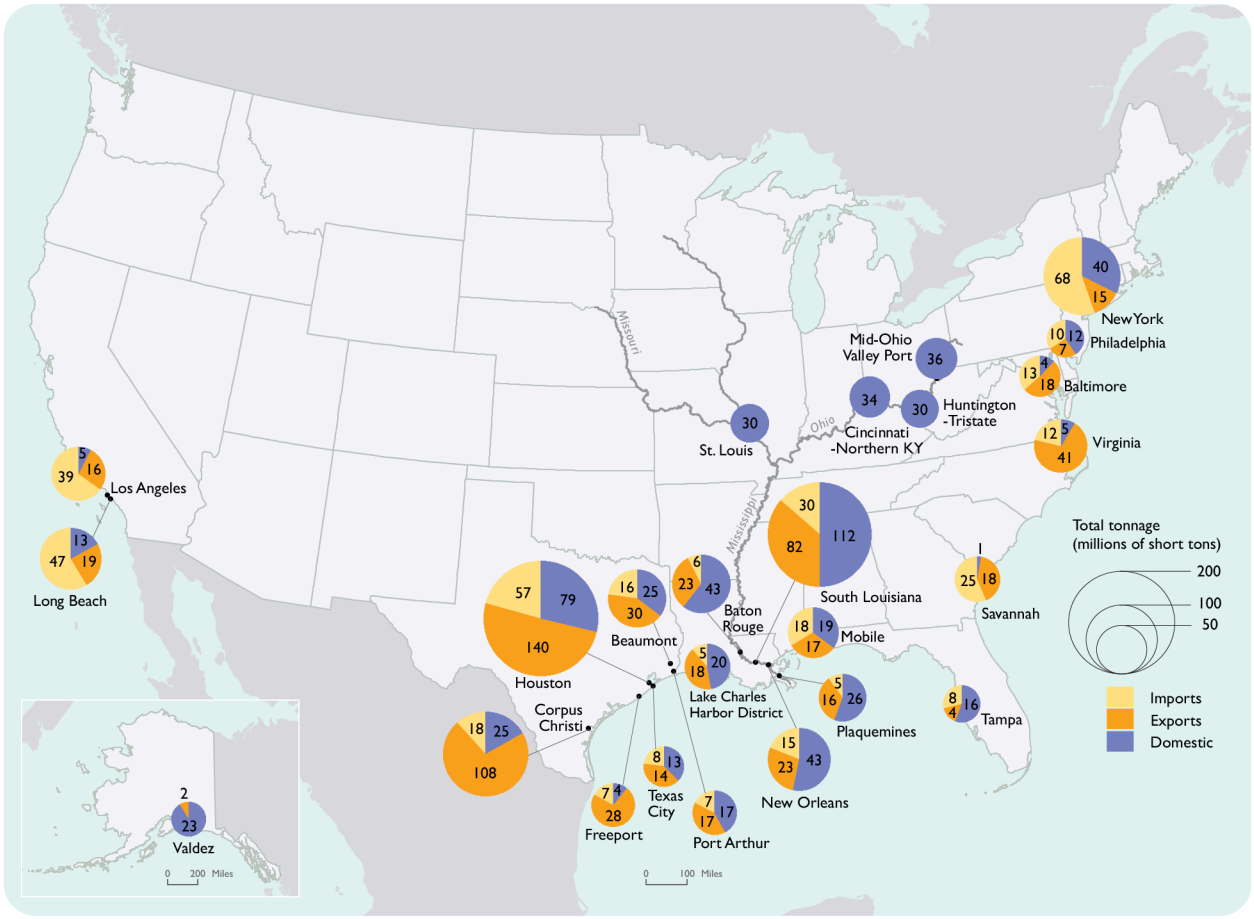
Top 25 Tonnage Ports in 2020

- The top 25 tonnage ports handled a total of 1,744 million tons of cargo about 71.3 percent of the tonnage handled by the top 100 ranked ports. The top 100 ports account for 95.5 percent of total tonnage handled by U.S. ports.
- The highest tonnage figures are associated with ports that handle large quantities of both liquid bulk cargo (e.g., petroleum or chemicals) and dry bulk cargo (e.g., coal or grain), such as the ports of Houston, South Louisiana, and Corpus Christi.[1]
- The 2020 top tonnage port was the port of Houston.

[1] U.S. Department of Transportation, Bureau of Transportation Statistics, based upon 2020 data provided by U.S. Army Corps of Engineers, Waterborne Commerce Statistics Center. Special tabulation as of December 2021.

Figure 1: Top 25 Ports by Total Tonnage: 2020

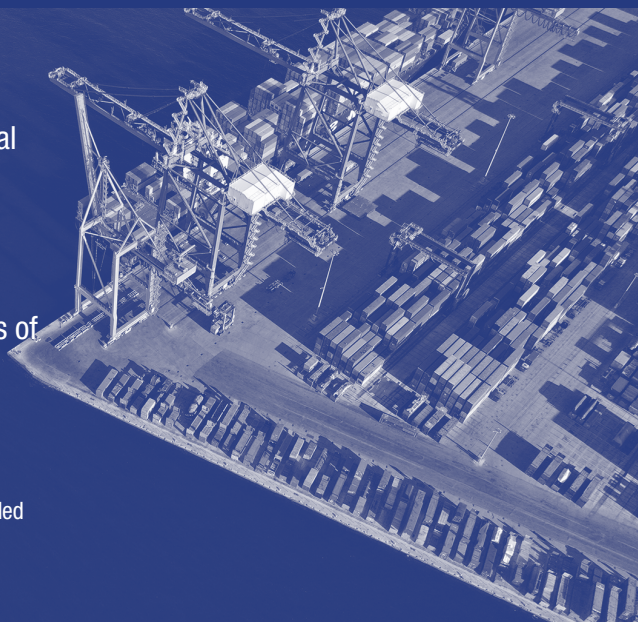


SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics, based upon 2020 data provided by U.S. Army Corps of Engineers, Waterborne Commerce Statistics Center. Special tabulation as of December 2021.

Top 25 Dry Bulk Ports in 2020

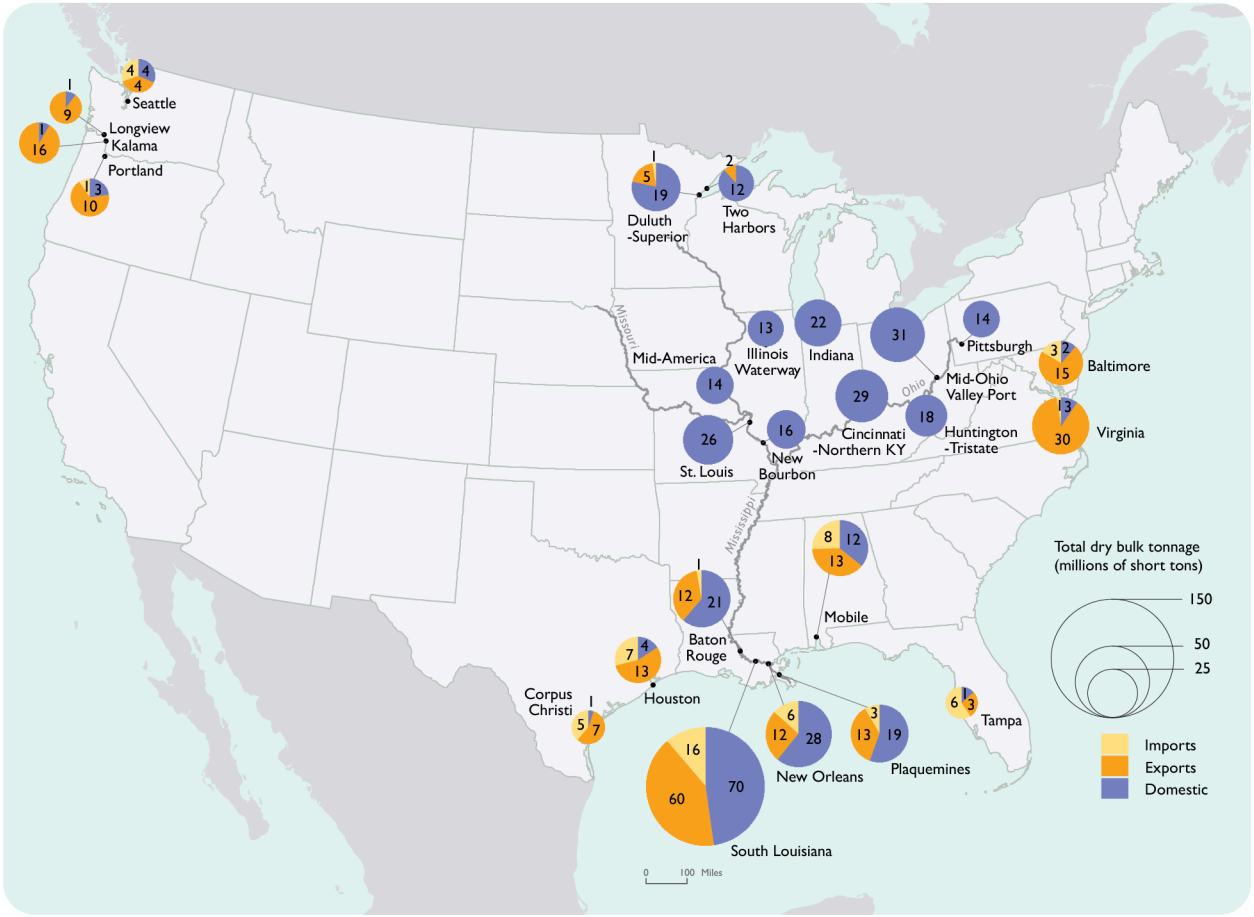
- The top 25 dry bulk ports handled a total of 672 million tons of cargo, accounting for 70.4 percent of the dry bulk tons handled by the top 100 ranked dry bulk ports. The top 100 ports account for 94.2 percent of total dry bulk tonnage handled by U.S. ports.

- The port of South Louisiana remained in the top spot and handled by far the greatest volume of dry bulk cargo, more than 3 and 4 times, respectively, the amount handled by the next ports on the list—the ports of New Orleans and the Plaquemines.[2]



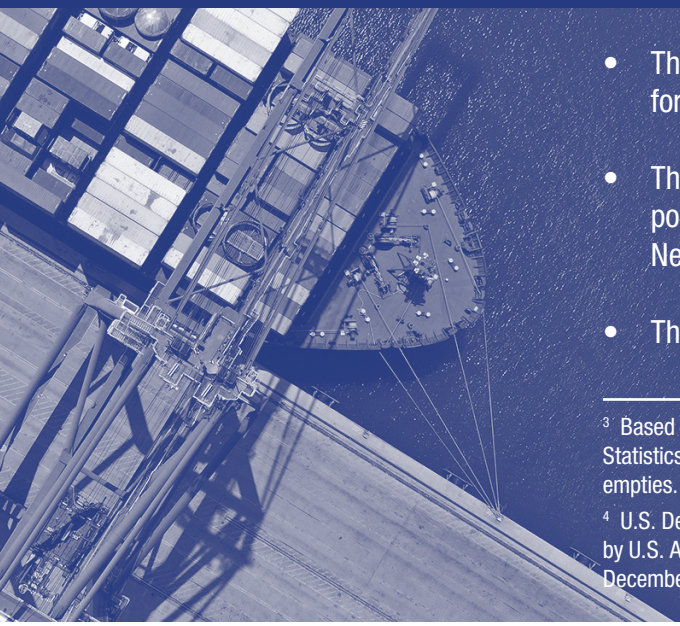
[2] U.S. Department of Transportation, Bureau of Transportation Statistics, based upon 2020 data provided by U.S. Army Corps of Engineers, Waterborne Commerce Statistics Center. Special tabulation as of December 2021.

Figure 2: Top 25 Ports by Dry Bulk Tonnage: 2020



SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics, based upon 2020 data provided by U.S. Army Corps of Engineers, Waterborne Commerce Statistics Center. Special tabulation as of December 2021.

Top 25 Container Ports in 2020

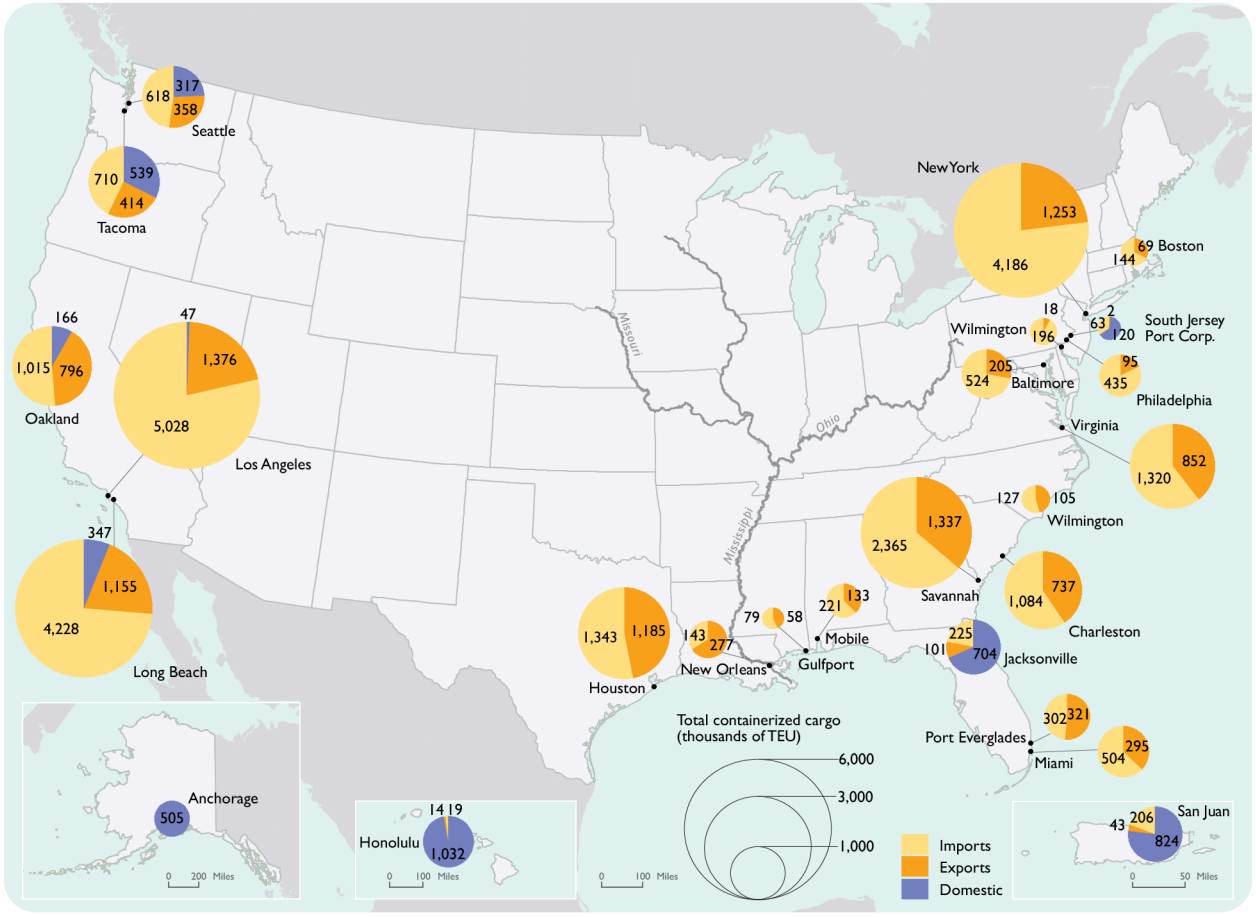


- The top 25 container ports handled a total of 39.8 million TEU, accounting for 96.5 percent of the loaded TEU handled by all U.S. container ports.[3]
- The container ports with the highest TEU volumes were coastal container ports, such as the ports of Los Angeles, Long Beach, and New York and New Jersey.[4]
- The 2020 top container port was the port of Los Angeles, California.

[3] Based upon container port list published by the U.S. Army Corps of Engineers, Waterborne Commerce Statistics Center ranked by loaded domestic and foreign TEU. Container TEU does not include foreign empties.

[4] U.S. Department of Transportation, Bureau of Transportation Statistics, based upon 2020 data provided by U.S. Army Corps of Engineers, Waterborne Commerce Statistics Center. Special tabulation as of December 2021.

Figure 3: Top 25 Container Ports by TEU: 2020



SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics, based upon 2020 data provided by U.S. Army Corps of Engineers, Waterborne Commerce Statistics Center. Special tabulation as of December 2021.

Table 1: List of Top 25 Ports by Tonnage, Dry Bulk, and Container: 2020

	Top 25 Rank						Top 25 Port Data		
Port	Tonnage		Dry Bulk		Container by TEU		Tonnage (short tons, millions)	Dry Bulk (short tons, millions)	Container TEU (000)
Alaska, AK, Port of					✓	19			382
Baltimore	✓	18	✓	13	✓	15	35	20	730
Baton Rouge, LA	✓	7	✓	5			72	34	
Beaumont	✓	8					71		
Boston					✓	23			213
Charleston					✓	8			1,821
Cincinnati-Northern KY, Ports of	✓	19	✓	8			34	29	
Corpus Christi	✓	3	✓	22			151	12	
Duluth-Superior, MN and WI			✓	10				25	
Gulfport					✓	25			138
Honolulu					✓	14			785
Houston Port Authority, TX	✓	1	✓	12	✓	5	276	23	2,528
Huntington-Tristate, KY, OH, WV	✓	22	✓	14			30	18	
Illinois Waterway Ports Terminals			✓	20				13	
Indiana (Northern District)			✓	11				23	
Jacksonville					✓	12		3	882
Kalama			✓	15				17	
Lake Charles Harbor District	✓	14					43		
Long Beach	✓	6			✓	2	79		5,692
Longview			✓	24				11	
Los Angeles	✓	9			✓	1	59		6,451
Miami					✓	13			800
Mid-America Port, IA, IL and MO			✓	18				14	
Mid-Ohio Valley Port, OH and WV	✓	17	✓	7			36	31	
Mobile, AL	✓	11	✓	6	✓	20	53	32	354
New Bourbon Port Authority, MO			✓	16				16	
New Orleans	✓	5	✓	2	✓	18	81	46	420
New York, NY & NJ	✓	4			✓	3	124		5,439
Oakland					✓	7			1,916
Philadelphia Regional Port	✓	23			✓	17	29		531
Pittsburgh			✓	19				14	
Plaquemines Port District	✓	12	✓	3			47	35	
Port Arthur	✓	15					41		
Port Everglades					✓	16	-		624
Port Freeport	✓	16					39		
South Jersey, Port of, NJ					✓	24			161
Portland			✓	17				15	
San Juan					✓	11			902
Savannah	✓	13			✓	4	43		3,701
Seattle			✓	23	✓	10		12	1,151
South Louisiana, LA, Port of	✓	2	✓	1			225	147	
St. Louis Metro Port, IL and MO	✓	21	✓	9			30	26	
Tacoma					✓	9			1,527
Tampa Port Authority	✓	24	✓	25			29	11	
Texas City	✓	20					34		
Two Harbors			✓	21				13	
Valdez	✓	25					25	0	
Virginia, VA, Port of	✓	10	✓	4	✓	6	58	34	2,172
Wilmington, DE					✓	22			214
Wilmington, NC					✓	21			231

KEY: TEU = twenty-foot equivalent unit.

NOTES: Based upon port list published by the U.S. Army Corps of Engineers, Waterborne Commerce Statistics Center ranked by loaded domestic and foreign TEU. Container TEU does not include foreign empties. Due to statistical boundary and definitional changes, the 2020 port data presented here may not be comparable to that of previous years.

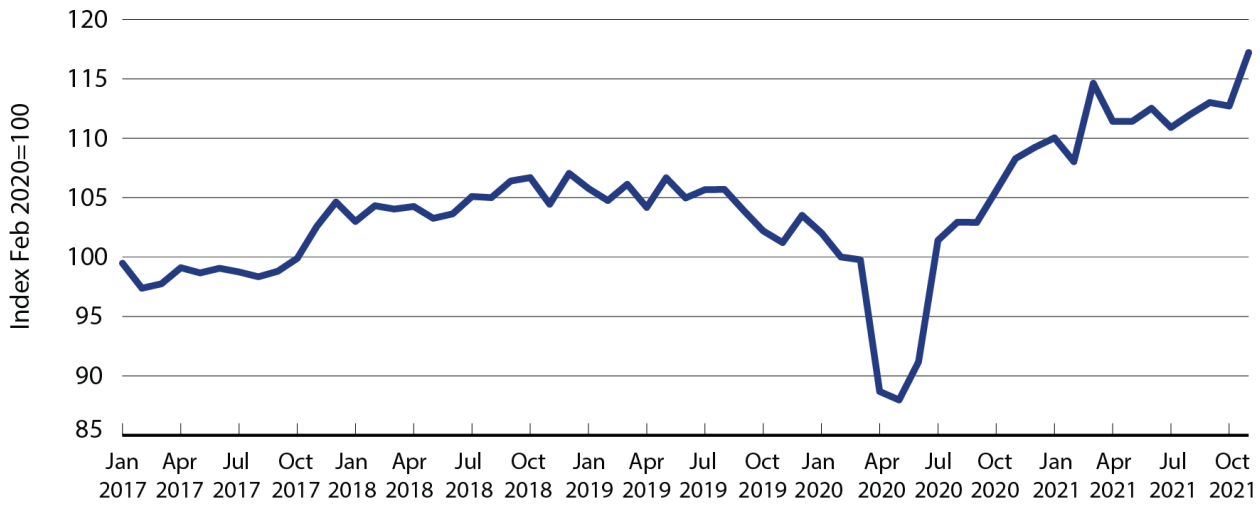
SOURCE: *Total and Dry Bulk Tonnage, and TEU*: U.S. Department of Transportation, Bureau of Transportation Statistics, based upon 2020 data provided by U.S. Army Corps of Engineers, Waterborne Commerce Statistics Center. Special tabulation as of December 2021.

Port Activities in 2020 and 2021

As the COVID-19 pandemic drove a shift in demand from services to goods, major swings in imported goods placed significant stress on U.S. ports in 2020 (as shown in figure 4). The 2nd quarter of 2020 was marked by a recession as gross domestic product (GDP) decreased by 31.2 percent. GDP quickly rebounded in the 3rd quarter of 2020 with growth of 33.8 percent.[5]

[5] U.S. Department of Commerce, Bureau of Economic Analysis, available at https://apps.bea.gov/ as of November 2021.

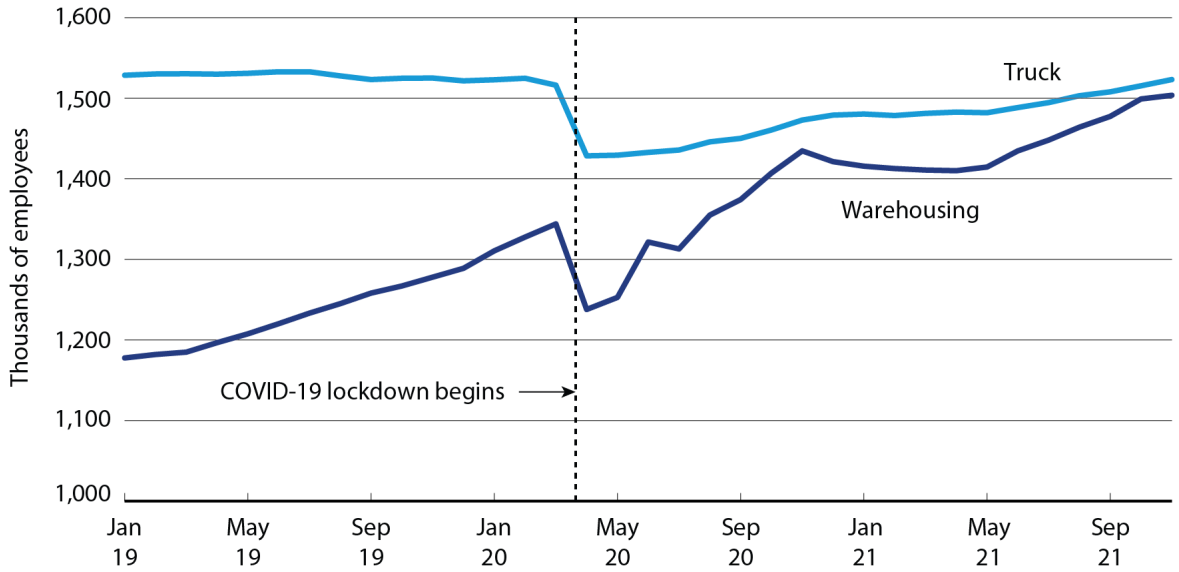
Figure 4: Index of U.S. Goods Imports (Real): January 2017–November 2021



SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics index, based upon U.S. Department of Commerce, Census Bureau, *U.S. International Trade in Goods and Services*, available at https://www.census.gov/ as of January 2021.

Combined with production uncertainties created by COVID-19, the whiplash of the brief turnaround between economic contraction and expansion contributed to a major disruption in global supply-chain. This affected the Nation's ports as economic activity in the U.S. and around the world began to return to pre-pandemic levels. In addition to over burdening ports, workforce and equipment shortages contributed to the supply-chain disruptions. The tightened labor market for drayage drivers further exacerbated port challenges (figure 5).

Figure 5: Truck Transportation and Warehousing Employment January 2019–December 2021



SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Current Employment Statistics (CES), available at https://www.bls.gov/ces/ as of December 2021.

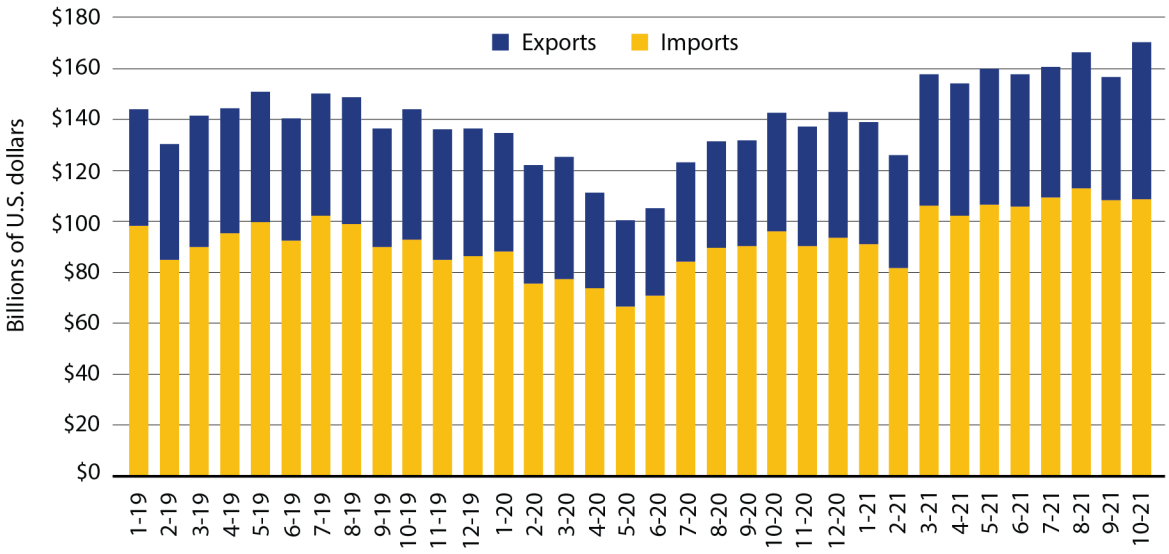
Overall, international freight value moved by all modes of transportation fell $752 billion (9.1 percent) and tonnage was down by 233 million short tons (5.2 percent) between 2019 and 2020. That year over year decrease, however, conceals the decrease in the 2nd quarter and the significant increase in the latter two quarters of 2020 noted above. During the first 11 months of 2021 for which data are available, the value of U.S. international freight increased by 22.2 percent, when compared to the same 11 months in 2020.[6]

Waterborne vessels are the leading transportation mode for international freight, moving 40 percent of U.S. international freight value in 2020—more than $1.5 trillion—and 70 percent of freight by weight—almost 1.5 trillion short tons.[7] Waterborne vessels continued to move the majority of international freight during the first 10 months of 2021. Figure 6 shows the monthly U.S. international freight value transported by vessel. Between January 2021 and October 2021, the monthly U.S. international freight value transported by vessel increased by about $31 billion (22.6 percent) from $139 billion in January 2021 to $170 billion in October 2021.

[6] U.S. Department of Commerce, Census Bureau, USA Trade Online, available at https://usatrade.census.gov/ as of December 2021.

[7] U.S. Department of Transportation, Bureau of Transportation Statistics, Freight Facts & Figures, available at https://www.bts.gov/ as of November 2021.

Figure 6: Monthly U.S.-International Freight Value Transported by Vessel: January 2019–October 2021



SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics analysis, based upon U.S. Department of Commerce, Census Bureau, USA Trade Online, available at https://usatrade.census.gov/ as of December 2021.

The Nation's ports handle the lion's share of U.S. international trade and transportation. Of the top 25 U.S. international freight gateways (airports, land border crossings, and maritime ports) by value, 10 are maritime ports, including the ports of New York and New Jersey, Los Angeles, Long Beach, Houston, Savannah, Virginia, Charleston, Baltimore, Oakland, and Tacoma.[8]

Of the more than $1.5 trillion in U.S.-international trade transported by vessel and handled by the Nation's ports in 2020, containerized cargo comprises about $1 trillion (68.3 percent) and is responsible for most consumer goods imported into the United States. Container vessel cargo has been a primary focal point of port performance in recent years.[9]

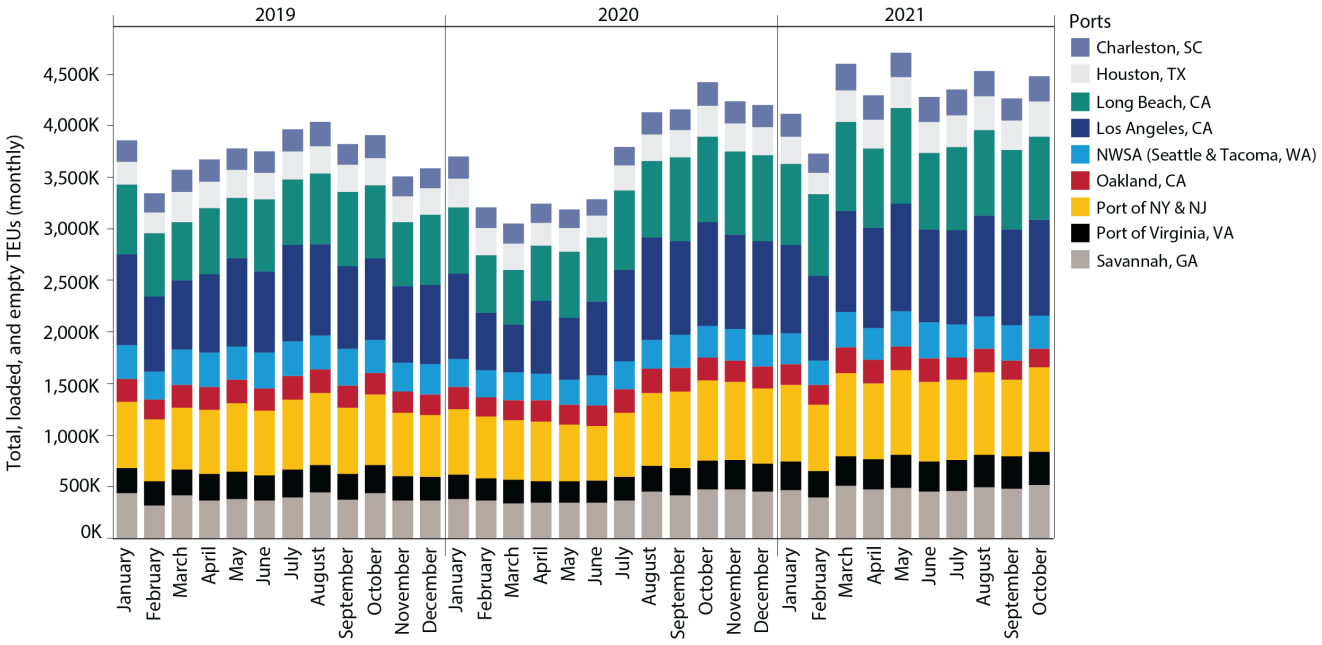
Figure 7 shows that the Nation's top 10 container ports handled relatively low numbers of monthly TEU in the first half of 2020 only to handle higher numbers of monthly TEU in the latter half of 2020, which has continued to grow in 2021. For example, these ports handled about half a million (12.7 percent) more TEU in October 2021 than in October of 2020. Container ports have continued to handle a record-breaking number of TEU through the 3rd quarter of 2021.[10]

[8] U.S. Department of Transportation, Bureau of Transportation Statistics, National Transportation Statistics, available at https://www.bts.gov/ as of November 2021.

[9] U.S. Department of Commerce, Census Bureau, USA Trade Online, available at https://usatrade.census.gov/ as of December 2021.

[10] U.S. Department of Transportation, Bureau of Transportation Statistics; analysis based on data sources cited in https://explore.dot.gov/ as of November 2021.

Figure 7: 20-Foot Equivalent Units (TEUs) Handled by the Top 10 U.S. Container Ports: January 2019–September 2021



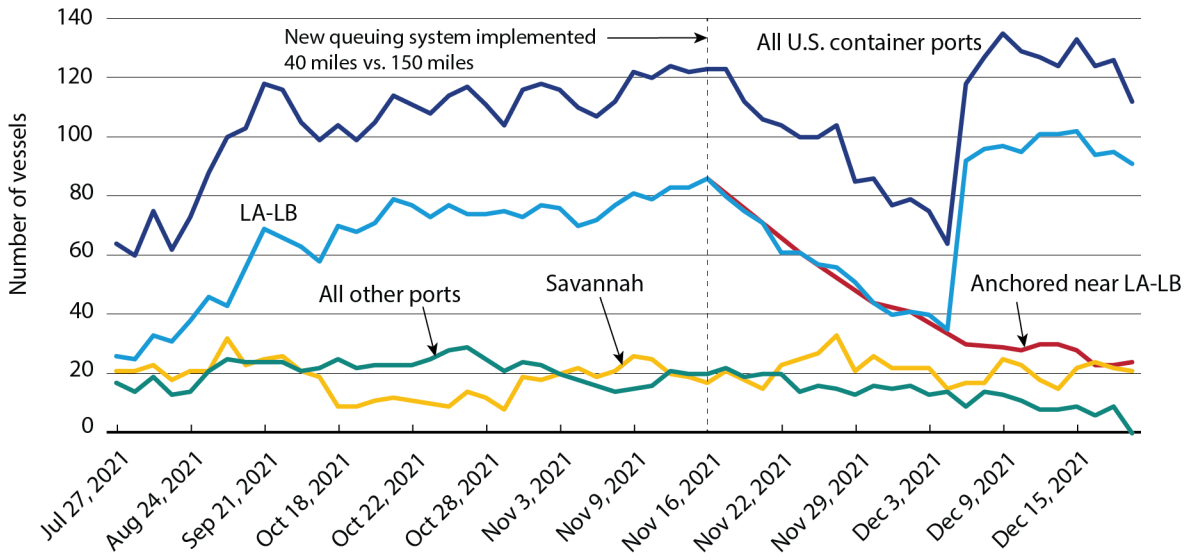
SOURCES: U.S. Department of Transportation, Bureau of Transportation Statistics analysis; based upon TEU volumes at the ports of Charleston, SC, http://scspa.com/about/statistics/; Houston, https://porthouston.com/; Long Beach, https://www.polb.com/; Los Angeles, https://www.portoflosangeles.org/; Northwest Seaport Alliance (Seattle / Tacoma), https://www.nwseaportalliance.com/; Oakland, https://www.oaklandseaport.com/; New York/New Jersey, https://www.panynj.gov/; Port of Virginia, http://www.portofvirginia.com/; and Savannah, https://gaports.com/; as of December 2021.

Vessel Dwell Times in 2020 and 2021

The time vessels spend in port is a major factor contributing to port throughput and performance. BTS uses U.S. Coast Guard Automatic Identification System (AIS) data to calculate dwell times at berth for 3 ship types: container, liquid bulk (tanker), and roll-on/roll-off (ro/ro) vessels. The vessel dwell times reported below do not include time that vessels spent at anchor before reaching cargo berths (figure 8 below).

In late 2020 and early 2021, many vessels waited to load and unload containerized cargo in anchorages in San Pedro Bay and elsewhere due to port congestion. In late December 2021, as shown in figure 8, the ports of Los Angeles and Long Beach had 91 container vessels waiting to berth, spending in some cases, many more days at anchor than dockside. In total, also shown in figure 8, U.S. container ports had about 112 container vessels at anchor waiting to berth on December 21.

Figure 8: Weekly Containerships Awaiting Berths at all U.S. Ports: July 27, 2021–December 21, 2021



NOTES: LA-LB totals (blue line) include containerships in drift/holding areas near LA-LB (red line). Data reported at more frequent intervals starting October 18, 2021.

SOURCES: U.S. Department of Transportation, Maritime Administration, Office of Policy and Plans; and the Marine Exchange of SoCal. Special Tabulation, as of December 2021.

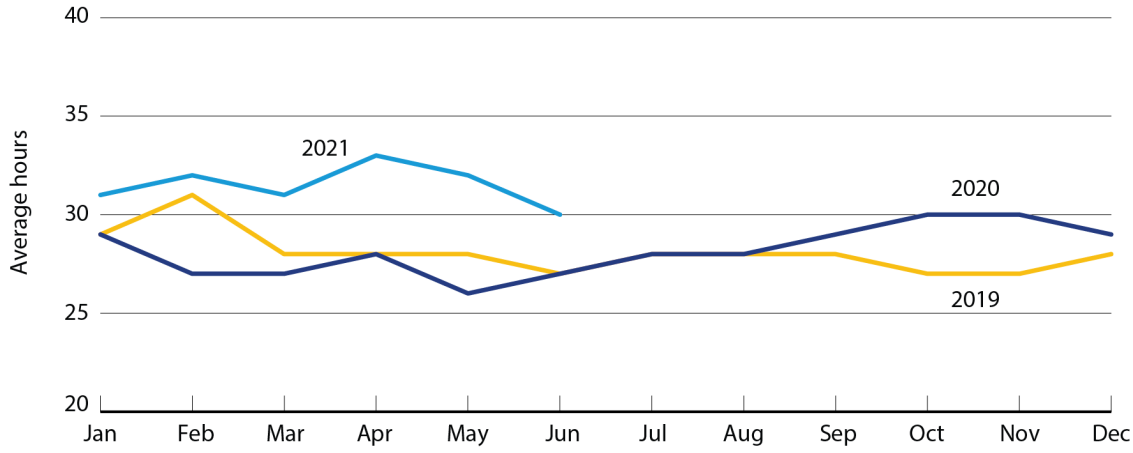
The average container vessel dwell time at the top 25 U.S. container ports[11] was estimated at 28.1 hours in 2020, down slightly from 28.2 hours in 2019. Overall, as shown in figure 9, dwell times for container vessels fluctuated monthly, with dwell times increasing steadily throughout the latter half of 2020. Prolonged dwell times can reduce the number of vessel calls a port can handle.

In the first half of 2021, average container vessel dwell times increased to 31.5 hours. The top 25 container ports had 6,537 observed vessel calls, down 1,825 (21.8 percent) from the same period in 2020 despite the overall economic growth in the period indicated by increases in GDP.[12]

[11] The top 25 container ports are based on 2020 port rankings provided by the U.S. Army Corps of Engineers, Waterborne Commerce Statistics Center as of December 2021.

[12] The top 25 container ports are based on 2020 port rankings and calculated using 2021 AIS data from the sources cited above.

Figure 9: Estimated Monthly Container Vessel Dwell Times: January 2019-June 2021



NOTES: AIS signals are susceptible to interference, which can result in missing or incomplete dwell time records. This issue may impact the reliability of our estimated dwell times. See https://www.bts.gov/PPFS-Tech-Docs on how BTS resolved data quality issues.

SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics, calculated using AIS data from the U.S. Coast Guard's Nationwide Automatic Identification System (NAIS) archive, processed by U.S. Army Engineer Research and Development Center, Coastal and Hydraulics Laboratory, through the AIS Analysis Package (AISAP) software package, as of December 2021.

Many tankers ended up idle or used for storage, waiting in anchorages across the country like the dozens of tankers anchored in San Pedro Bay near the ports of Los Angeles and Long Beach.

In 2020, U.S. imports of total petroleum and crude oil were at the lowest levels since 1991.[13] This decrease in U.S. imports may help explain the decline in the number of observed tanker vessels. Only 21 of the top 25 tonnage ports have observed tanker vessel calls.[14] The liquid bulk terminals at these 21 ports had 16,692 observed vessel calls in 2020, down 391 (2.3 percent) from 17,083 in 2019. As shown in figure 10, average tanker vessel dwell times at these top ports was estimated at 41.4 hours in 2020, down almost two hours from 43.3 hours in 2019.[15] In general, tanker dwell times were about a third longer than container vessel dwell times, most likely because it takes more time to pump petroleum and crude oil than to lift shipping containers from a vessel of similar size.

In the first half of 2021, average tanker vessel dwell time decreased to 40.4 hours.[16] The 21 liquid bulk ports had 7,208 observed vessel calls during the same period in 2021, down 2,441 (25.3 percent) from the same period in 2020. Since 2018, tanker vessel dwell times have improved by showing a general downward trend.

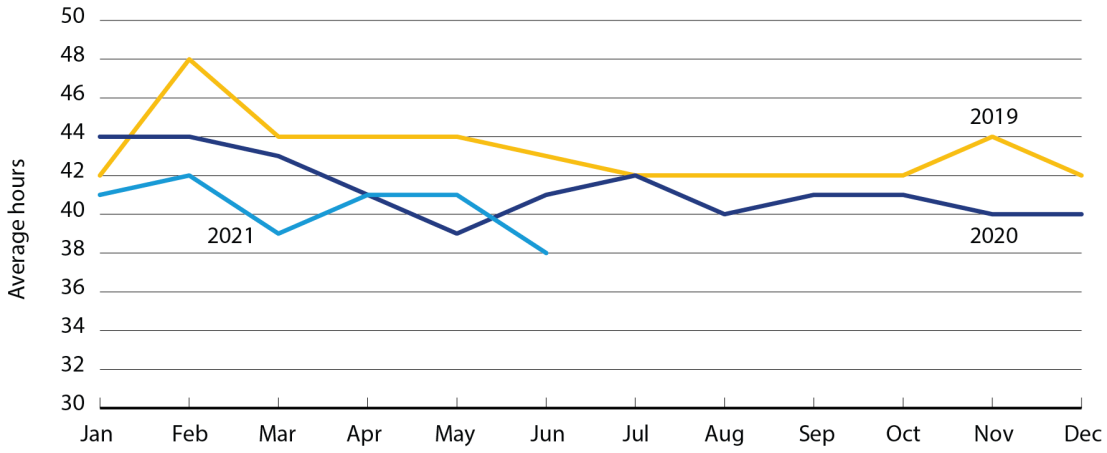
[13] U.S. Department of Energy, Energy Information Administration, *Oil & Petroleum Products Explained: Oil Imports & Exports* (April 2021), available at https://www.eia.gov/ as of November 2021.

[14] The ports of Cincinnati Northern KY; Huntington Tristate, KY, OH, WV; Mid Ohio Valley Port, OH and WV; St. Louis Metro Port, IL and MO are located on rivers and may handle primarily liquid bulk barges, which are not equipped with AIS and thus not included in the tanker dwell times.

[15] U.S. Department of Transportation, Bureau of Transportation Statistics, calculated using AIS data from the U.S. Coast Guard's Nationwide Automatic Identification System (NAIS) archive, processed by U.S. Army Engineer Research and Development Center, Coastal and Hydraulics Laboratory, through the AIS Analysis Package (AISAP) software package, as of December 2021.

[16] The top 25 tonnage ports are based on 2020 port rankings and calculated using 2021 AIS data from the sources cited above.

Figure 10: Estimated Monthly Tanker Vessel Dwell Times: January 2019-June 2021



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