

ACEC Private Industry Brief

Intermodal & Logistics

Winter 2021/2022

Market Scope

The intermodal and logistics market is dynamic and growing, with various types of facilities, including marine terminals, rail terminals, depots and container yards, inland ports, freight airport terminals, and industrial real estate located adjacent to intermodal facilities. Many facilities are like mini-cities, and require a wide range of engineering design services for their creation and expansion, including land development, transportation, mechanical/electrical/plumbing, structural, environmental, geotechnical, and water-related design. With more than 2,200 facilities, the North American intermodal market is the largest in the world.

Top Clients

Major clients in this market sector contract with engineering firms directly, often using master service agreement-type contracts. These clients include:

1. Ports: There are more than 300 ports in the United States (source: U.S. DOT, Maritime Administration). *Please note the 10 largest North American container ports table on page 2.*

2. Railroads: Freight railroads in the United States are privately held, with close to 700 in operation. The seven U.S. Class 1 freight railroads are: BNSF Railway, CSX Transportation, Grand Trunk Corporation (Canadian National Railway), Kansas City Southern Railway, Norfolk Southern Combined Railroad Subsidiaries, Soo Line Corporation (Canadian Pacific Railway), and Union Pacific Railroad.

3. Industrial Real Estate Developers: Trammell Crow Co., Duke Realty, Majestic Realty Co., Lincoln Property Co., Dermody Properties, Transwestern Development Co., and McCraney Property Co. (source: *Commercial Property Executive*).

5 Current Market Trends

- ▶ **1. Supply Chain Pressures:** America's supply chain is under considerable pressure, as e-commerce booms, GDP bounces back to pre-COVID levels, and industries such as trucking suffer from severe labor shortages. These pressures will likely increase as the main driver, e-commerce, is expected to grow. According to Adobe's Digital Economy Index (via Forbes), global e-commerce sales should reach \$4.2 trillion globally in 2021, with U.S. consumers accounting for nearly one-quarter of that spending. This is a continuation of a long-term trend, as detailed in the *2020 Transportation Statistics*

Continued on next page

Top 10 Truck Bottlenecks in U.S.

Rank	Location	Avg. Speed (mph)	Peak Avg. Speed (mph)	Peak Avg. Speed % Change 2019-2020
1	Fort Lee, NJ: I-95 at SR 4	36.5	31.3	39.4%
2	Cincinnati, OH: I-71 at I-75	44.1	40.1	11.5%
3	Atlanta, GA: I-285 at I-85N	42.6	34.4	53.5%
4	Atlanta, GA: I-20 at I-285W	45.1	40.9	12.6%
5	Houston, TX: I-45 at I-69/US 59	40.2	31.4	53.7%
6	Chicago, IL: I-290 at I-90/I-94	28.8	25.4	57.6%
7	Chattanooga, TN: I-75 at I-24	49.3	46.8	-1.8%
8	St. Louis, MO: I-64/I-55 at I-44	47.3	46.1	10.1%
9	Rye, NY: I-95 at I-287	47.5	45.7	12.0%
10	San Bernardino, CA: I-10 at I-15	46.7	40.7	25.1%

Source: American Transportation Research Institute

Current Market Trends, *continued*

Annual Report published by the U.S. Department of Transportation (U.S. DOT). The report notes that e-commerce sales increased 20-fold between 2000 and 2019. In 2018 the nation's transportation system—supported by infrastructure—moved about 51 million tons of goods worth \$51.8B each day; 2018 represented a 4% increase over 2016. Container ships are getting larger, both to meet demand and to take advantage of the 2016 expansion of the Panama Canal. Larger ships require ports with deep-water drafts, ample overhead clearance, and intermodal connections—such as double-stack rail service—notes DOT. Continued investments will be made, supported by the newly signed into law Infrastructure Investment and Jobs Act (IIJA), to improve such infrastructure and increase the resiliency and capacity of the supply chain.

► 2. Industrial Real Estate Strongest CRE Market

Sector: The industrial/distribution market leads in all commercial real estate categories, ranking first for both investment and development prospects, as it has for nine straight years in the annual *Emerging Trends in Real Estate* report, published by the Urban Land Institute (ULI) and PricewaterhouseCoopers (PwC). The report notes that "the industrial real estate operating environment has never been stronger." The strength of this market is national, with surging growth in the Sunbelt due to population growth. According to commercial real estate firm CBRE in the Southwest the Inland Empire dominates

due to its proximity to the ports and populations centers in Southern California. In the Southeast, the seaport markets of Charleston, Savannah, and Tidewater Virginia are strong, due to not only demographics, but the drivers of location incentives and training programs for distribution employees, and expanded inland ports.

► **3. Urban Space in Demand:** There is strong demand for infill warehouse space in urban cores, but land constraints, zoning barriers, and high costs have limited new development, according to several analysts. This has contributed to record low vacancies says JLL, particularly in the greater New York and Los Angeles markets (see map on page 4). Demand near dense population centers continues to be key, as consumers expect same and next-day delivery of goods.

► **4. The Changing Warehouse:** Industrial real estate design is changing as warehouses become more urban, need to attract a scarce labor force, and must reduce carbon emissions. Resulting design changes to this property type may include: ceiling heights of 40 feet, increased power capacity for equipment (including robots), HVAC systems to keep employees and equipment cool, human-centered design, and sustainable features like renewable energy sources, water savings, and electric charging stations.

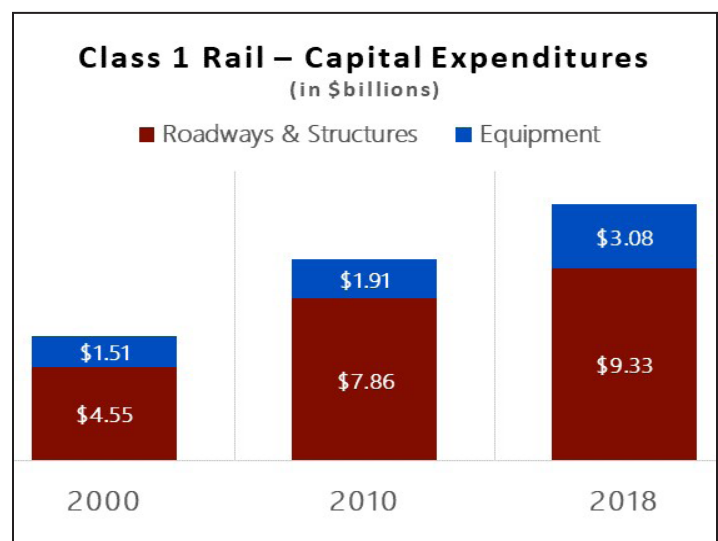
► **5. Continued Growth of Freight Rail:** U.S. rail intermodal volume grew sharply in recent years, increasing by 61.1% between 2000 and 2018; and rail intermodal traffic accounted for 24% of revenues in 2018, more than any single commodity group, according to the Association of American Railroads (AAR). Class 1 railroads continue to invest in infrastructure to support current and expected growth (see chart below), as the trucking industry faces a severe labor crunch, and freight rail is seen as a sustainable alternative. A typical intermodal train is equal to 280 truckloads, and can move one ton of freight 470 miles on one gallon of fuel, notes AAR.

10 Largest U.S. Ports & Growth

Rank	Port	Import & Export TEUs, 2020	Increase / Decrease % 2017-2020
1	Los Angeles (CA)	6,186,226	- 1.03%
2	New York/New Jersey	5,185,111	+ 8.33%
3	Long Beach (CA)	5,163,042	- 1.98%
4	Savannah (GA)	3,637,889	+ 67.53%
5	Houston (TX)	2,488,101	+ 23.03%
6	Virginia Ports	2,100,314	- 4.35%
7	Seattle & Tacoma (WA)	2,043,148	- 10.98%
8	Oakland (CA)	1,779,305	+ 6.01%
9	Charleston (SC)	1,762,410	+ 21.54%
10	Jacksonville (FL)	813,663	- 1.25%

TEU – Twenty-Foot Equivalent Unit, which is used to measure a ship's cargo carrying capacity. The dimensions of one TEU are equal to that of a standard 20-foot by 8-foot shipping container.

Source: *The Journal of Commerce*



Source: U.S. Department of Transportation, Bureau of Transportation Statistics "2020 Transportation Statistics Annual Report"

IIJA: Key Pieces to Support Market

On November 15, 2021 President Biden signed into law H.R. 3684, the Infrastructure Investment and Jobs Act (IIJA). The bipartisan IIJA, enthusiastically supported by ACEC, presents a rare opportunity for advancement of sustainable infrastructure by undertaking an unprecedented level of transportation, energy, water, and environmental investments. These programs will produce benefits for decades to come. Detailed below are aspects of the bill which are key to the intermodal and logistics market.

- ▶ **\$17.4B for Ports and Waterways:** This includes **\$9.55B** for Army Corps of Engineers' infrastructure priorities with **\$5.15B** for construction projects to address the huge backlog of authorized projects that have yet to receive funding. Included under Corps construction are specific funding set-asides for navigation, inland waterways, aquatic ecosystem restoration, environmental infrastructure, shore protection, and remote and subsistence harbor projects. Within the **\$4B** for Corps Operations and Maintenance, which would be spent over a three-year period, there is funding for dredging federal navigation projects and repairing damage to Corps' projects caused by natural disasters.

The Department of Transportation's Port Infrastructure Development Program (PIDP) and Marine Highways Program (MHP) will receive **\$455M** per year for five years. PIDP funding will allow significant improvements to improve port facilities on our coasts, rivers and Great Lakes. PIDP grants can improve port infrastructure, including intermodal connections, or reduce or eliminate pollutants and greenhouse gas emissions. MHP funds, **\$5M** a year for five years, will work to expand the use of America's navigable waters and expand marine highway service options, and facilitate their further integration into the U.S. transportation system.

Funding also includes **\$80M** per year for five years for reduction in truck emissions at ports. This program requires the Secretary of Transportation to coordinate and fund projects through competitive grants that reduce port-related emissions from idling trucks. Additionally, this section requires a study on how ports would benefit from electrification and emerging technologies that reduce truck emissions.

- ▶ **\$5B for Consolidated Rail Infrastructure and Safety Improvements:** This program funds projects that improve the safety, efficiency, and reliability of intercity passenger and freight rail. This program leverages private, state and local investments to support safety enhancements and general improvements to infrastructure for both intercity passenger and freight railroads.

Business Development Insight

Understanding the Potential Opportunities Connected to 'ESG'

Environmental, Social and Governance (ESG) services present opportunities for engineering firms, as clients plan to comply with current initiatives and future rules. Many clients are beginning to document ESG progress, due to pressure from boards, investors, clients, and the threat of lawsuits. And on May 20, 2021 the Biden Administration released an executive order directing federal officials and major federal contractors to disclose risks and develop comprehensive climate risk strategies within 120 days. Analysts for the intermodal and logistics market note how important resilience and sustainability is to decision making and plans concerning the supply chain. The result will be a need for rethinking design strategies, strategizing decarbonization of both the transport and industrial building sectors, and documenting ESG activities for investors and regulators—all potential services for engineering firms.

Top 5 Fastest Growing U.S. Ports

Rank	Port	Import & Export TEUs, 2020	Growth % 2017-2020
1	Savannah (GA)	3,637,889	67.5%
2	Mobile (AL)	349,476	39.1%
3	Houston (TX)	2,488,101	23.0%
4	Charleston (SC)	1,762,410	21.5%
5	Wilmington (NC)	305,054	10.5%

TEU – Twenty-Foot Equivalent Unit, which is used to measure a ship's cargo carrying capacity. The dimensions of one TEU are equal to that of a standard 20-foot by 8-foot shipping container.

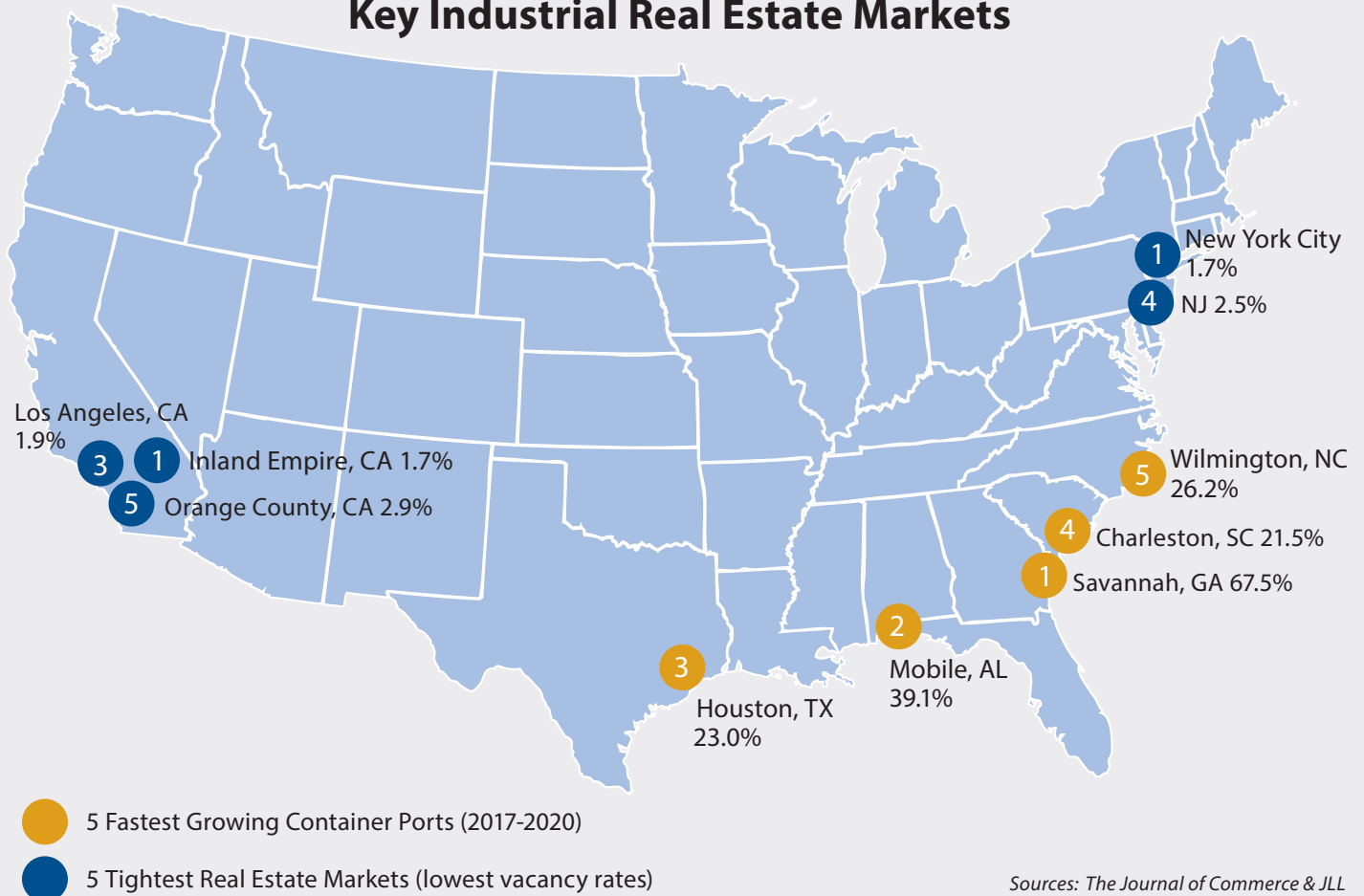
Source: The Journal of Commerce

Top 5 Industrial Real Estate Markets with Lowest Vacancy

Rank	Real Estate Market	Square Feet Under Const.	Vacancy Rate, Q2 '21
1	Inland Empire (CA)	22.0 million	1.7%
1	New York City (NY)	2.8 million	1.7%
3	Los Angeles (CA)	3.4 million	1.9%
4	New Jersey	14.1 million	2.5%
5	Orange County (CA)	0.4 million	2.9%

Source: JLL

Fastest Growing Ports & Key Industrial Real Estate Markets



Private Market Symposiums:

Kicks off in December 2021

Kicking off in December 2021, ACEC's new Private Market Symposiums will convene clients, economists, policy makers and engineering leaders in different cities throughout the country for an in-depth look into each private market. The first symposium was held in Charleston, SC on December 2-3 and focused on the Intermodal & Logistics market. Register today for our next symposium in Scottsdale, AZ!

Commercial & Residential Real Estate -
 March 3-4, 2022 in Scottsdale, AZ

Health Care & Science+Technology -
 April 28-29, 2022 in Boston (Cambridge), MA

Energy & Utilities -
 November 2022 in Houston, TX

Link to register: <https://programs.acec.org/private-market-symposiums/>

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