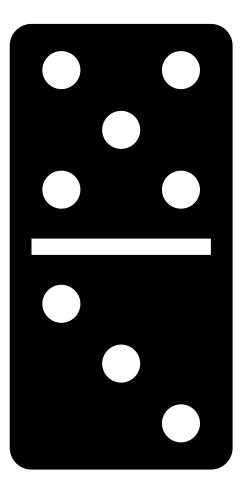
Supply Chain Disruptions Choose Texas



Margaret Kidd, Program Director Supply Chain & Logistics Technology College of Technology, University of Houston





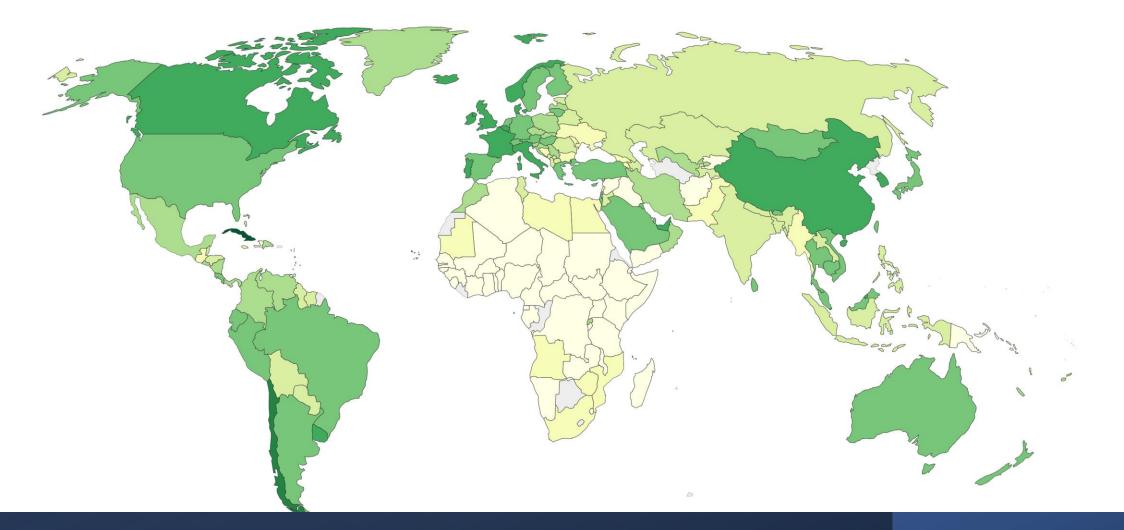
Domino Effect

- **COVID**/Breakthrough infections/Vaccine access
- US consumer demand/e-commerce*
- Periodic factory closures/power outages China
- Periodic port closures/port congestion
- Shortage of containers
- Shortage labor/great resignation
- Shortage trucks, drivers, chassis
- Shortage warehouse space
- US ports infrastructure/lack digitization

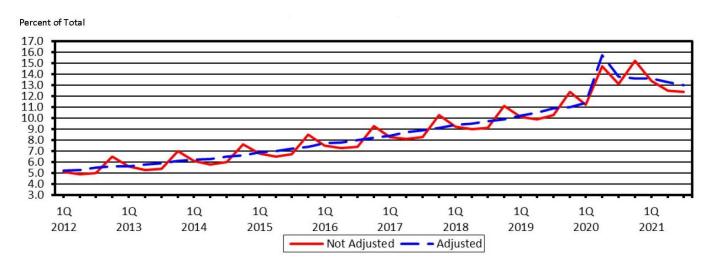
COVID-19 vaccine doses administered per 100 people, Feb 1, 2022

All doses, including boosters, are counted individually. As the same person may receive more than one dose, the number of doses per 100 people can be higher than 100.

Our World in Data

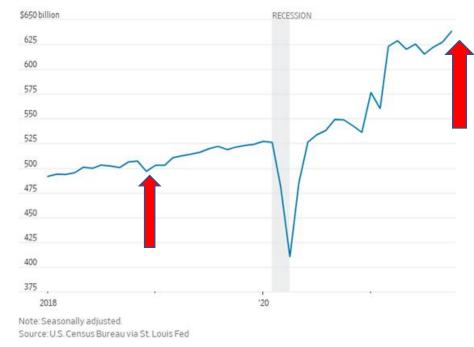


US Consumer Spending – E-commerce & Total Retail Sales



Estimated Quarterly U.S. Retail E-commerce Sales as a Percent of Total Quarterly Retail Sales: 1st Quarter 2012 – 3rd Quarter 2021. Source: The Census Bureau of the Department of Commerce.

Total U.S. retail and food-service sales



Total Retail Sales – Oct 2021

Work from home; Not commuting; Not traveling vacation; Not spending on services; and Government Stimulus = Surplus Savings

\$626.8 Billion (Est. December 2021 – US Census)

1	Shanghai, China	43.5
2	Singapore	36.6
3	Ningbo-Zhoushan, China	28.72
4	Shenzhen, China	26.55
5	Guangzhou Harbor, China	23.19
6	Busan, South Korea	21.59
7	Qingdao, China	22.00
8	Hong Kong, S.A.R, China	20.07
9	Tianjin, China	18.35
10	Rotterdam, The Netherlands	14.35
11	Jebel Ali, Dubai, United Arab Emirates	13.5
12	Port Klang, Malaysia	13.24
13	Xiamen, China	11.41
14	Antwerp, Belgium	12.04
15	Kaohsiung, Taiwan, China	9.62
16	Dalian, China	6.54
17*	Los Angeles, U.S.A	9.2
17*	Hamburg, Germany	8.7

Top Ports by TEU

Temporary Port Closures

40 % Asian Containers LA/LB

World Shipping Org

World Container Index - Assessed by Drewry \$ per 40 ft container



Source: Drewry

Congestion West Coast – LA/LB



Source: Marine Traffic

Industrial Real Estate

Houston

KEY INDICATORS

	CURRENT Q4 2021	PRIOR QUAI Q3 2021		PRIOR YE/ Q4 2020	
Vacant Total	7.0%	7.8%	-	8.5%	-
Vacant Direct	6.8%	7.6%	٠	8.3%	+
Available Total	10.1%	10.8%	٠	12.4%	+
Available Direct	9.5%	10.1%	٠	11.6%	-
Net Absorption (SF)	9,682,267	13,620,180	+	7,465,501	
Leasing Activity (SF)	8,767,157	10,643,539	+	11,702,469	-
Construction (SF)	16,854,908	15,771,465		13,837,989	
Deliveries (SF)	4,681,929	7,865,440	٠	9,568,910	-
Avg Asking Rent (NNN/MO)	\$0.64	\$0.64		\$0.63	
Inventory (SF)	668,100,701	663,402,620		647,823,901	

Industrial Real Estate

Fundamentals	Forecast		
YTD net absorption	13,842,695 s.f. 🔺		
Under construction	4,110,872 s.f. 🔺		
Total vacancy	1.3% 🔻		
Sublease vacancy	805,983 s.f. 🔻		
Direct asking rent	\$1.12 p.s.f. 🔺		
Sublease asking rent	\$1.41 p.s.f. 🔺		
Concessions	Falling 🔻		

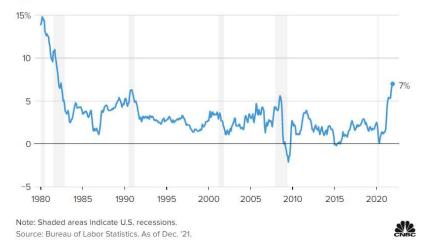
Source: NAI Partners 4Q

Source: JLL 4Q

Inflation

- 2021 Consumer Price Index 7 %
- Global food prices 33 % last 12 months <u>https://www.fao.org/worldfoodsit</u> <u>uation/foodpricesindex/en/</u>
- 38 million Americans (11.8 percent) food insecurity <u>https://frac.org/hunger-poverty-</u> <u>america</u>

Consumer price index, percent change from a year ago All items in U.S. city average



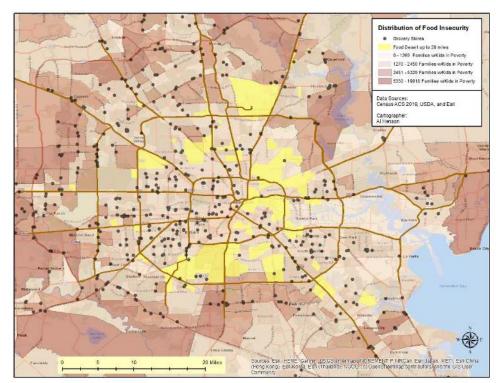
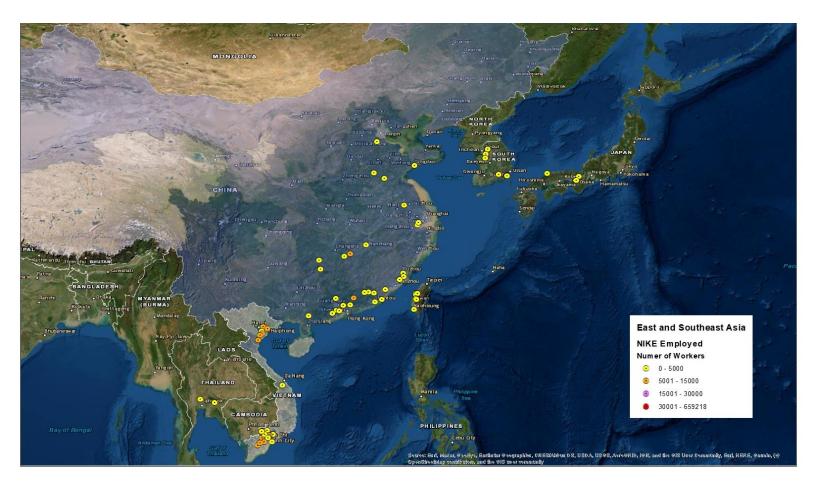


CHART CPI: https://www.cnbc.com/2022/01/12/cpi-december-2021-.html GIS Map: Dr. Al Henson



NIKE Factories Vietnam & China



GIS Map: Dr. Al Henson UH

- **\$17 billion** to improve infrastructure at coastal ports, inland ports and waterways, and land ports of entry along the border.
- Launch programs to modernize ports and marine highways with more than \$240 million in grant funding within the next 45 days.
- Identify projects for **U.S. Army Corps of Engineers** construction at coastal ports and inland waterways within the next **60 days**.
- **Prioritize key ports** of entry for modernization and expansion within the **next 90 days**.
- **Open competition for the first round** of port infrastructure grants funded through the bipartisan infrastructure deal **within 90 days**.
- Develop a **comprehensive freight movement** playbook to states.
- Data sharing to support supply chains



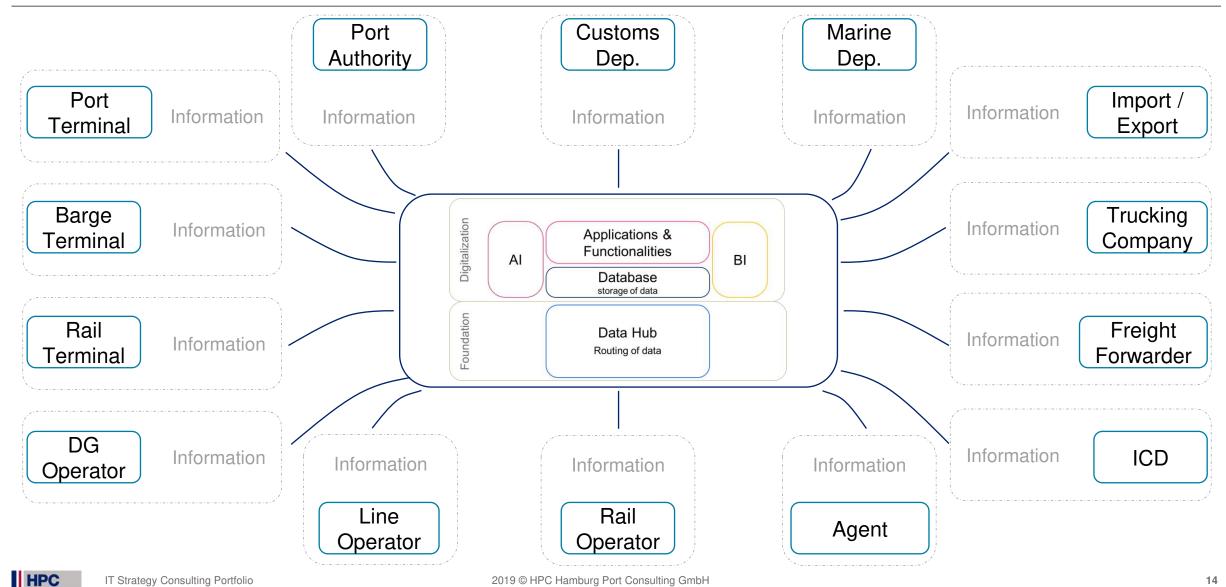
FACT SHEET: The Biden-Harris Action Plan for America's Ports and Waterways | The White House

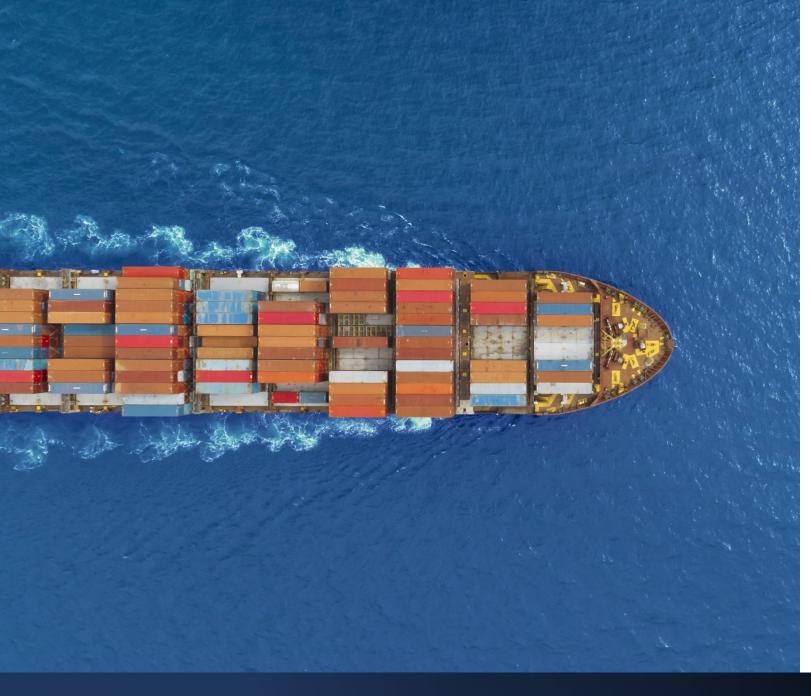
whitehouse.gov • 3 min read

Source: https://www.whitehouse.gov/briefing-room/statements-releases/2021/11/09/fact-sheet-the-biden-harris-action-plan-for-americas-ports-and-waterways/

Digital Data: Port Community System

TIME TO UPGRADE INFRASTRUCTURE



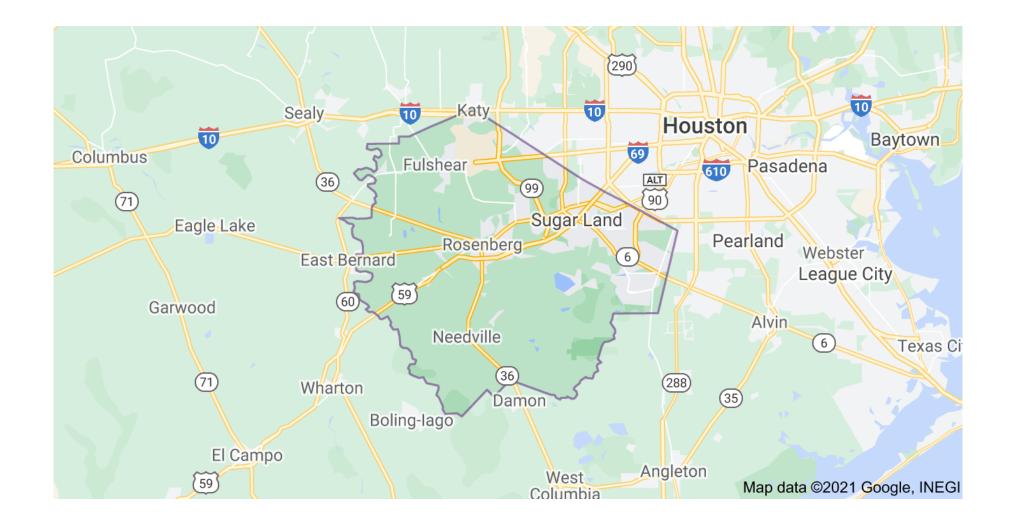


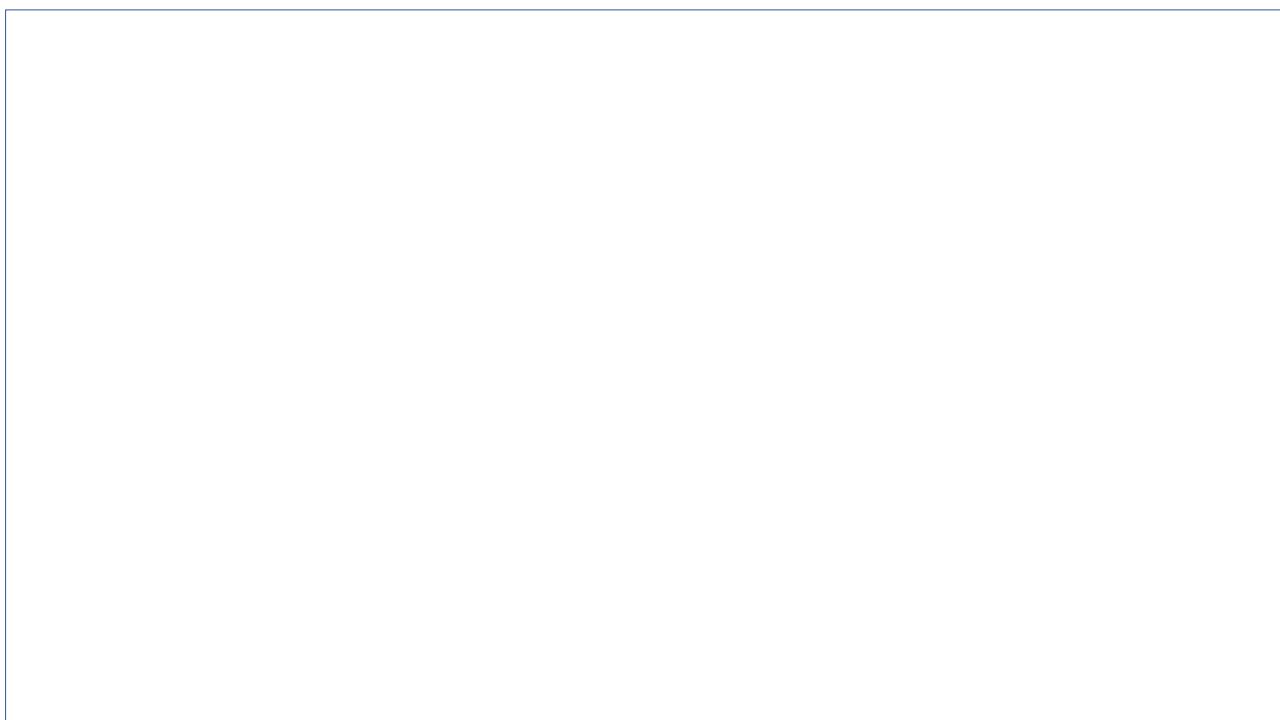
Economic Development Region/Texas

- Project 11 Houston Ship Channel
- Port Freeport Channel Project
- Highway 36A Expansion
- 152 million consumers within 1000 miles regional ports
- Corporate relocation California HPE, Oracle, Tesla, Samsung + 100
- No state income tax, cost of living, business friendly environment, young educated workforce...
- Panama Canal Max 14,000 TEU's
- Near Shore On Shore
- Electric Vehicle Mfg. Autonomous Truck

Supply Chain Innovation

Initiative





Investing in the Future of the Supply Chain



View Interview: https://www.ttnews.com/newsmakers/investing-in-future-of-supply-chain

Highlighted Media

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KCEN 6 Waco. (2022, January 21). BNSF Railway employees could strike over new attendance policy/Matt Lively – <u>https://www.kcentv.com/article/news/local/new-bnsf-policy-will-impact-families/500-c1a5e0b0-aa88-4d54-be6e-dc2747411b8c</u>

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Fox. (2021, October 17). Sunday Night in America with Trey Gowdy. Supply Chain Disruption. <u>https://video.foxnews.com/v/6277613075001</u>.

BBC World News. (2021, October 13). Nightly News with Lewis Vaughan Jones. https://vimeo.com/632323416

Transport Topics News. (2021, October 12). Fixing Supply Chain Won't be Easy Experts Say. https://www.ttnews.com/articles/fixing-supply-chain-wont-be-easy-experts-say

FOX Business. (2021, October 6). Maria Bartiromo, Morning with Maria. Texas professor warns supply chain crunch will 'easily move into 2022.' https://video.foxbusiness.com/v/6275840361001

Thank You

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