Logistics Infrastructure The foundation of recent failures

Trade School

April 8th, 2021 Mento LLC in Partnership with TAPA Tonnage on Highways, Railroads and Inland Waterways: 2002



Sources: Highways: U.S. Department of Transportation, Federal Highway Administration, Freight Analysis Framework, Version 2.2, 2007. Rail: Based on Surface Transportation Board, Annual Carload Waybill Sample and rail freight flow assignments done by Oak Ridge National Laboratory. Inland Waterways: U.S. Army Corps of Engineers (USACE), Annual Vessel Operating Activity and Lock Performance Monitoring System data, as processed for USACE by the Tennessee Valley Authority; and USACE, Institute for Water Resources, Waterborne Foreign Trade Data, Water flow assignments done by Oak Ridge National Laboratory.

<u>What's in Biden's</u> Infrastructure Plan?

How the \$2 trillion in proposed spending breaks down.





REALITY TIME

- Freight transportation is carried by a variety of networks. The largest percentage of US freight is carried by trucks (60%),
 - followed by pipelines (18%),
 - rail (10%),
 - ship (8%),
 - and air (0.01%).

Reality Time

- Other modes of transportation, such as parcel and intermodal freight accounted for about 3% of the remainder.
- The difference in percentage of rail's share by ton miles and by weight (10% vs 38%) is accounted for by the extreme efficiency of trains.
- A single railroad locomotive may pull fifty boxcars full of freight while a truck only pulls one.
- Trucks surpass trains in the weight category due their greater numbers, while trains surpass trucks in the ton-mile category due to the vast distances, they travel carrying large amounts of freight.

Reality Time

 There is no point is even discussing the domestic air cargo infrastructure needs – economics drive the upgrades because there is so much money to be made.



NOTE: The data in this figure include only loaded containers in U.S. international maritime activity and cover U.S. imports, exports, and transshipments. Therefore, the trade levels will be greater than those reported from U.S. international trade statistics, which exclude transshipments. The data also exclude military shipments.

SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, based on data from U.S. Department of Transportation, Maritime Administration, which are drawn from The Journal of Commerce, Port Import Export Reporting Service (PIERS), available at www.marad.dot.gov, as of March 30, 2009.

2018 U.S. Freight Transportation by Mode (\$ in billions)



The Good News

- US infrastructure agencies have kept the country's trains running, water flowing, and government buildings functioning during the coronavirus crisis.
- Now that operations are stabilizing, they can reconsider their capitalexpenditure plans.
- What that entails will vary dramatically depending on whether the federal government provides substantial infrastructure funding as part of an economic-stimulus package.
- If it does, agencies will need to determine how best to spend their share. And if there is no such funding, they will need to prepare to be more efficient with potentially lower budgets.

Money Well Spent

- There is little doubt about the value of investing in good infrastructure. In 2015, the nonpartisan Congressional Budget Office estimated that every dollar spent on infrastructure brought an economic benefit of up to \$2.20.
- The US Council of Economic Advisers has calculated that \$1 billion of transportation-infrastructure investment supports 13,000 jobs for a year.
- Beyond the numbers, infrastructure is critical to the health and wellbeing of the country: the United States could not function without the roads, bridges, sewers, clean water, and airports previous generations paid for.

All the King's Horses

- A partial shutdown of the 111-year-old Hudson River rail tunnel in New York, for example, could cost the economy \$16 billion and 33,000 jobs, according to the Regional Plan Association.
- In 2016, the American Society of Civil Engineers estimated that the United States had an unfunded infrastructure gap of more than \$2 trillion
- And that figure may now be an underestimate: public-infrastructure federal, state, and local spending was only 2.3 percent of GDP in 2017 (the latest year for which figures are available)—a record low.
- In 2019, the McKinsey Global Institute (MGI) estimated that fully closing the infrastructure gap could translate into 1.2 percent more jobs across the economy.

Public-infrastructure spending has fallen, and there is a backlog of more than \$2 trillion.

Public spending on water and transportation infrastructure, 1980–2017, % of GDP



Estimated 10-year infrastructure-funding gap by asset type, 2016-25, \$ billion



Source: 2017 Infrastructure Report Card, American Society of Civil Engineers, March 2017, infrastructurereportcard.org; Public spending on transportation and water infrastructure, 1956-2017, US Congressional Budget Office, October 2018, cbo.gov

We Seem to Always Get Back Here

- Infrastructure spending was a key part of the 2009 American Recovery and Reinvestment Act (ARRA). The legislation, passed in response to the financial crisis, gave priority to "shovel ready" projects—those that could be completed within three years.
- While that helped clear out maintenance backlogs (thus improving existing assets and extending their life spans), it did not greatly expand US capital stock or build the kind of projects that could durably strengthen economic competitiveness, as the interstatehighway system, the California State Water Project, and the Washington, DC, Metrorail system did.

SO We're Aces Right????

- As Congress considers further infrastructure spending, it should seek to balance the short-term need to maintain employment and activity—the role of shovel-ready projects—with the large-scale ambition to build such transformative projects.
- This isn't very likely to happen.

- Congress has passed three separate relief packages, totaling more than \$2 trillion, to address the economic consequences of the COVID-19 crisis. Despite significant allocations earmarked for transit agencies, airports, and Amtrak in the Coronavirus Aid, Relief, and Economic Security (CARES) Act.
- No funding (meaning ZERO dollars) has been specifically designated for capital projects.

Keeping The Employed Employed

- As it relates to funding for infrastructure agencies, legislation has focused on maintaining current staffing levels (although some local governments are asking for exemptions to use CARES Act funding for capital needs, despite US Department of the Treasury guidance to the contrary).
- By contrast, China, the European Union, and Japan have all announced stimulus programs in which infrastructure investment is a key component.
- Like these markets, the United States could take advantage of low interest rates and available labor to rebuild and renew the nation's physical assets.

Keeping The Employed Employed

- Government Employee Unions, a key voting block and lobbying sector, make this the most difficult hurdle to overcome. You aren't likely to get infrastructure improvements without loss of long-term employment.
- This isn't much more of a difference than the issues we have with longshoremen unions.

Two Likely Scenarios

- Depending on federal action, US infrastructure agencies will face one of two scenarios.
 - In the first, federal stimulus materializes, which would bolster budgets and could unleash a rapid surge of capital deployment.
 - In the second, there is little or no dedicated infrastructure-stimulus spending from the federal government. In that case, capital budgets would come under economic pressure, forcing a reevaluation of priorities.
 - It is possible spending isn't for actual infrastructure <u>but keeping the</u> <u>employed employed.</u>





Contact Me

info@peteforamerica.com

Other Info

Skills Classical Pianist

Languages English, Norwegian Spanish, Italian, Maltese, Arabic, Dari Persian, French

Interest Chasten, Buddy, and Truman

Mailing Pete for America

PO Box 1226 South Bend, IN 46624

Birth Date 19/Jan/1982

Awards

2013 Best Mayor in the US Oxford University Rhodes Scholar

Øpetebuttigieg

PETE BUTTIGIEG

Mayor of South Bend

Mayoral Accomplishments

Diversity and Outreach Un-Doc Immigtant Municipal ID Program. NAACP Diversity & Inclusion Dept. Homeless Veterans Community Connections.

Departments

Center for Lifelong Learning. Office of Engagement and Economic Empowerment. West Side Small Business Resource Center. Dept. of Venues, Parks, and Arts.

SBPD/SBFD/Paramedicine

SBPD Community Policing. Group Violence Intervention Prog. Social Media Violence Taskforce. Para-Medicine Response Team. SBFD Fire Alarm Blitz.

Technology

311 Center Customer Service Line. SB City Jobs Transparency Hub. Downtown WiFi. Fiber Optics. Light Up SB Solar Powered Lighting.

Homes and Rentals 1000 Homes in 1000 Days.

Rental Safety Verification Program. Home Repair Program. H2O Lead Detection Program.

Transportation

Smart Sewer Program. Smart Streets Program. Trails 365-24hr Snow Removal. SB to Chicago South Shore RR.

Parks and Events My SB Parks and Trails.

Annual Best Week Ever Event.

Transportation

Smart Sewer Program. Smart Streets Program. Trails 365-24hr Snow Removal. SB to Chicago South Shore RR.



- Be strategic about state-of-good-repair investments. With large maintenance backlogs prevalent throughout the United States, reinvesting in existing assets to ensure that they operate at peak performance is one of the quickest strategies for generating economic impact.
- Existing maintenance and upgrade backlogs can be evaluated against agencies' service mandates to prioritize projects and improve service resiliency.

- *Prioritize investments that reduce the cost of existing operations.* Agencies should consider using a portion of stimulus funding for projects that reduce the cost of service delivery.
- Examples include automating workflows, replacing high-maintenance assets, investing in contactless service operations, and upgrading energy efficiency.

- Accelerate transformational investments. Large-scale investments in new infrastructure represent the most compelling outcome of a stimulus program and have the greatest potential to enhance competitiveness.
- However, they also take the longest to construct. Agencies can focus stimulus funds on advancing projects that are in the final stages of development—for example, by finalizing environmental reviews, segmenting work into smaller discrete work packages for early construction, and working with contractors (*perhaps through* <u>economic incentives</u>) to accelerate delivery.

- Capitalize technology investments. Digital investments can reduce the total cost of asset ownership and improve user outcomes and experiences; as such, they should be key components of capital budgets.
- Digital fare-payment investments, intelligent-transportation systems, predictive-analytics solutions, and workforce-management systems all allow for more flexible operations and higher system capacity without pouring any concrete.
- Investments such as cloud-based performance-management systems and *5-D building-information models* can also make project delivery itself more efficient.

• Airports have seen traffic drop by up to 95 percent, and 2019 passenger levels are not expected to return until late 2021 at the earliest. While the \$10 billion in funding from the CARES Act will help, it is still only an offset; airports will likely have to rethink their capital spending.

- Enhance the user experience. Focus on creating destination terminals that incorporate attractive, high-quality elements. That could mean updating bathrooms, installing noise-dampening measures, and creating localized retail experiences while making queueing efficient and safe.
- *Transform operations.* Invest in smart technologies to streamline maintenance processes, centralize information in operations centers to improve responsiveness, and automate check-in, security, and baggage-handling steps.

- *Improve delivery.* Reevaluate the near-term capital pipeline and accelerate projects to take advantage of reduced passenger loads.
- For example, Denver International Airport has taken advantage of reduced passenger and flight levels to upgrade its concourses and expedite other construction work.
- The airport also is reevaluating its master plan, including the timing of parking expansions, roadway upgrades, and construction of a seventh runway.

- *Consider innovative revenue models.* Rethink retail contracts to incentivize performance and capture more value for the public.
- Examples include seeking ways to increase advertising revenue and negotiating better contracts with concession operators.

- With mass-transit-ridership levels dropping by as much as 90 percent in some cities, including Chicago, New York, and San Francisco, and not projected to return to pre-COVID-19 levels for years, fare revenue has plummeted.
- At the same time, non-fare revenues, such as sales taxes, are also likely to decline because of the economic downturn.
- The \$25 billion in CARES Act funding was a lifeline to operating budgets but did not affect capital budgets.

- Enhance the user experience. Use mobile technology to foster a seamless mobility journey and implement improvement projects that create a safer and easier passenger journey.
- For example, WMATA (Washington Metropolitan Area Transportation Authority) optimized a three-year platform-rebuilding project (upgrading lighting, passenger-information displays, and weather shelters) by accelerating the construction of stations planned for 2021 to this summer.

- *Transform operations.* Deploy digital back-office and workforcemanagement systems to improve staff efficiency and explore predictive-maintenance systems, driverless vehicles, and energyefficiency upgrades to lower the cost of operations.
- *Improve delivery.* Accelerate projects to take advantage of reduced passenger loads and lengthened construction-work windows. The City Council of Beverly Hills, citing low traffic levels, recently allowed a full shutdown of Wilshire Boulevard to accelerate the Metro Purple Line Extension project by six months.

- Consider innovative revenue models. Monetize shared utility corridors along rights-of-way, redevelop parking lots for alternative uses, and enter joint-development partnerships for urban stations.
- In Hong Kong, stations are often part of larger developments that connect and improve the value proposition of three distinct uses (retail, office, and transportation) while generating ongoing revenue for the transit system.

- Departments of transportation (DOTs) are projected to see significant drops in revenue because of reduced gas-tax and toll collections. However, roads are expected to be among the first classes of infrastructure to recover from the pandemic.
- Not only do Americans want to travel again, but also norms around physical distancing may result in a return to automobile use before other forms of transportation.

- Enhance the user experience. Make low-cost roadway modifications, such as sidewalks and bike lanes.
- DOTs can optimize curb space according to use and time of day to improve system efficiency. Actions include allowing nighttime freight delivery and instituting dynamic park and outdoor dining areas.
- *Transform operations.* Implement advanced analytics and remote monitoring systems to provide targeted predictive-maintenance interventions and manage congestion.

- *Improve delivery.* Accelerate quick-to-repair maintenance projects, such as filling potholes and repaving, to take advantage of a favorable contracting market and lower traffic levels.
- For example, California DOT (Caltrans) officials moved up a bridgereplacement project in San Francisco from July to April to take advantage of the historic drop in traffic. With strong incentives and a collaborative contractor, traffic was disrupted for only eight days.

- Consider innovative revenue models. Implement demand-based pricing systems that capture the cost of low-density travel modes, such as congestion pricing and managed lanes.
- Ideas of this type have changed the congestion in London forever.

Broadband

- Access to broadband is uneven—and a source of present and future economic disadvantage.
- Almost 163 million Americans do not use internet at broadband speeds (downloads of 25 or more megabits per second) because of financial and coverage limitations.
- While broadband in the United States is largely the domain of the private sector, governments could take action to expand access.

Ports

- The nation's more than 300 coastal and inland ports are significant drivers of the U.S. economy, supporting 30.8 million jobs in 2018 and 26% of the total GDP.
- Ports and port tenants plan to spend \$163 billion between 2021 and 2025, up by over \$8 billion in the last four years.
- Investments are focused on capacity and efficiency enhancements as maximum vessel size has doubled over the last 15 years, and tonnage at the top 25 ports grew by 4.4% from 2015 to 2019.

Ports

- No matter what we may think, technology has made no great leap in the maritime cargo sector in decades.
- Standards remain nonexistent beyond the conveyance level.
- Port updates will require massive financial investment. Not billions, not tens of billions, but rather hundreds of billions and in total trillions of dollars of investment.
- Aside from roads, nothing would have a greater impact.

Three simple decisions.

- <u>Super Port development</u> and the acceptance that what every other nation does may be smarter than that more politically expedient.
- Making a choice on vessel size support because it really is up to us.
- Congressional investment in innovation. Vessels, technology, ports and cargo operations. \$100B over ten years. Nothing but research

Project	Summary
Long Beach	Long Beach Port is a public agency managed and operated by the City of Long Beach. It is currently going through a \$4.5 billion infrastructure improvement plan including advancements of its Middle Harbor Project. Long Beach Port is providing \$1.2 billion of the project's upfront costs and the private terminal company, Orient Overseas Container Line (OOCL), is providing an additional \$500 million. OOCL has also agreed to pay \$4.6 billion to lease out the Middle Harbor for the next 40 years. OOCL will maintain and operate the harbor during that time. This project will fill in a waterway that separates two older terminals, add on-dock rail, and create one of the highest capacity terminals in the United States.
Newark	In 2011, the Port Authority of New York and New Jersey restructured their lease with the Port Newark Container Terminal (PNCT) to have a long-term extension through 2050. With this restructuring came a partnership between the port authority and PNCT to help expand and enhance port facilities. PNCT will invest \$500 million for these improvements and the Port Authority of New York and New Jersey will loan an additional \$150 million for improvements. As a result, PNCT has been able to double its on dock rail capacity, purchase three post- Panamax ship-to-shore cranes, and expand and improve container holdings. These changes have helped catapult the Port of Newark to record cargo numbers and the largest east coast port.
Baltimore	In 2010, the Maryland Port Administration (MPA) and Ports America Chesapeake, LLC entered into a P3 agreement for the 284-acre Seagirt Marine Terminal. The main value to the MPA is the \$105.5 million effort to build, equip, and have operational a new 50-foot berth, which includes the acquisition of new cranes. This berth allows the Port of Baltimore to become more competitive and capitalize off the increased shipping market of the Panama Canal. The real value of this project over its lifetime is expected to be around \$1.3 billion to \$1.8 billion.
Florida Seaport System Plan	Florida is one of the only states with a consistent funding stream to pay for port and multimodal infrastructure. They finance this through a documentary stamp tax, an excise tax imposed on certain documents executed, delivered, or recorded in Florida, that raises approximately \$55 million per year. These funds go toward the Strategic Intermodal System that was established in 2003 to enhance Florida's competitiveness by investing in critical transportation and freight facilities. The State Transportation Trust Fund is also required to allocate \$100 million annually to various seaport programs such as the Strategic Port Investment Initiative, Florida Seaport Transportation and Economic Development program, debt services, and Strategic Port Investment Initiative Grant Program. By having a leading state funding mechanism, Florida has been able to circumvent a lack of federal funding and position Florida ports to increase capacity. These funds were used to help offset costs in the deepening of the Port of Miami and are currently being used in Jacksonville. Because of these crucial investments the Port of Jacksonville has seen its Asian cargo load increase by 19 percent and the Port of Miami (known as the cruise capital of the United States) has not only expanded its cruise industry, but has seen its total cargo tonnage jump 12 percent since 2014.



Pull products through the supply chain

Producers

≣

- Any entity involved in creating goods for consumption
- Interacts with distributors, shippers, and retailers
- A producer also can be a shipper

Distributors

- Facilitates the distribution of goods
- Interact with shippers and retailers

Providers

- Shippers or retailers that move product to meet demand
- Must retain functions that prioritize and execute the order to cash cycle

Move or coordinate the movement of goods

Carriers

- Companies that physically move goods
- Rely on equipment providers to avoid disruption

Connectors

· Transfer points and movement facilitators

Coordinators

- Third-party logistics providers, forwarders, brokers, transport managers, etc.
- Coordinates shipments and facilitates the movement of goods for shippers

Equipment providers

Provides equipment



Mobilizers Provide essential support services

Crew support

 Hotel rooms and prepared food for mobile workers, truck stops, and rest areas

Equipment/infrastructure support

- Maintenance and repair vendors to keep equipment and/or infrastructure in working order
- Spare parts providers that manufacture and/or distribute parts for critical equipment
- Fuel suppliers and fueling stops

Technology/communications

- Infrastructure and systems support backbone
- Real-time transportation network monitoring and updating services

<u>I'm Kind of Up to a LOT</u>



Transported Asset Protection Association

- Mondays GLOBAL TRADE THIS WEEK
- Tuesdays TRADE GEEK PODCAST
- Wednesdays ALBA WHEELS UP Trade Compliance Training Series
- Thursday I cry myself to sleep
- Every other Friday TRADE SCHOOL
- Pete.Mento@MentoLLC.com
- 978.317.3250