

JAXPORT MAGAZINE

An aerial photograph of a busy port. In the foreground, a large container ship named 'CONTI CONTESSA' is moving through the water, carrying a massive load of colorful shipping containers. To its left, another container ship, 'TOTE Maritime', is docked at a pier with several blue cranes. In the background, more ships and port infrastructure are visible under a clear blue sky. A small tugboat is also seen in the water near the 'CONTI CONTESSA'.

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TOP POSTS



SSA Marine General Manager Jose Iribarren highlighted the Blount Island expansion project at JAXPORT during a Propeller Club event. Upon completion in 2024, the SSA facility will be able to accommodate nearly 700,000 TEUs (containers) annually, a 150 percent increase over the facility's current throughput.



Jacksonville International Airport and Frontier Airlines celebrated the inaugural flight of a new nonstop service connecting Jacksonville and San Juan. Puerto Rico is JAXPORT's single-biggest trading partner, accounting for about half of the port's container business.



JAXPORT's popular cruise program brings tourism and economic opportunity to the Northeast Florida region. Carnival Cruise Line resumed sailing from Jacksonville in spring 2022.



The First Coast Manufacturers Association recognized JAXPORT with the Logistics Excellence Award. As Northeast Florida's economic engine, JAXPORT is proud

to help grow opportunities for area manufacturers by connecting their businesses to the global economy.



Florida Trend named JAXPORT CEO Eric Green one of the state's most influential business leaders for the fourth year in a row. CEO Green was recognized as a transportation industry leader focused on growing JAXPORT's impact on Florida's economy.

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A MESSAGE FROM JAXPORT



Eric Green

Efficiency. It's a word that has taken on new meaning—and urgency—for a supply chain still coming to grips with a pandemic that just won't quit. Just-in-time delivery amid global supply chain disruption creates new pressures for shippers—and opportunity for Jacksonville's transportation network.

JAXPORT's efficiencies—and ability to serve our customers—will grow exponentially this year. The federal project to deepen the Jacksonville shipping channel to 47 feet will be completed through our Blount Island terminal this summer. The project includes the addition of a vessel turning basin that allows larger ships to turn at Blount Island.

To complement the deepening, we're modernizing our berths to enable Blount Island to simultaneously accommodate two post-Panamax ships. Later this year, our port partner SSA welcomes three additional eco-friendly container cranes to Blount Island, where significant terminal enhancements are underway to meet the growing needs of today's shippers.

In the pages of this magazine, you'll read about how these investments work together to seamlessly connect your cargo to your customers. We'll also show you the five auto trends that will change the landscape this year (page 30), and how JAXPORT's customized solutions have helped customers navigate the ongoing supply chain disruption (page 8).

In a time of supply chain ups and downs, one thing remains the same. Our unwavering commitment to serving our customers and community.

Thank you for your business and partnership during this time of exciting growth and opportunity for Jacksonville's transportation ecosystem.

A stylized, handwritten signature in black ink, appearing to read 'EG' followed by a flourish.

Eric Green
JAXPORT CEO



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X MARKS THE SPOT.

Providing Solutions to the Nation's Supply Chain Logjams

— *By Lori Musser*

There are alternatives. Navigating around the nation's supply chain logjams is possible, as JAXPORT and many other uncongested gateways are proving.

ROOT CAUSES

Today's supply chain issues are complex, but in a nutshell, COVID-19 hit, people quarantined and some businesses and factories decreased production. At the same time, e-commerce accelerated, import demand boomed, and the supply chain – including vessels and ports, planes/trucks/trains, brokers, warehouses and logistics companies – couldn't keep up with the sudden high volume of orders and returns, while facing simultaneous staffing challenges.

E-commerce growth came at the same time that global transportation providers were upsizing to bigger ships to reduce transportation costs.

That upsizing still isn't finished. It will take a massive infusion of capital to accommodate the huge volumes of new cargo now arriving all at once. Roadways, Intermodal Container Transfer Facilities, government services and

transportation providers need to gear up in many geographies. Not all players in the supply chain can move big volumes through a small window of time.

Warehousing and distribution centers are particularly short on space, meaning that sometimes cargo just has to sit on dock or in off-port yards until the warehouses have room.

The takeaway is that disruption in supply came at the same time that demand soared, and the nation's mega-seaports were overwhelmed.

IT'S NOT OVER YET

Fortunately, JAXPORT was not one of those ports, and there are solutions at hand.

The U.S. is focusing resources on fixing major supply chain issues, addressing capacity and efficiency problems with unprecedented levels of grant dollars for transportation infrastructure. But those are long-term solutions.

In the near term, individual ports, especially those on the U.S. West Coast, continue to whittle away at productivity obstacles – trying to shorten vessel waits at anchorage and expedite cargo turns.



Hapag-Lloyd's AL3 European container service included nine vessel calls to JAXPORT's Dames Point Marine Terminal.



Marine terminal productivity can improve if there is room off-port somewhere for freight to await processing and transport to destination, and if empty containers can get back in the hands of global carriers.

FIGHTING CONGESTION

The worst of the supply chain woes exist at the nation's busiest ports. On November 9, 2021, for example, the Marine Exchange of Southern California reported a record 81 containerships waiting in San Pedro Bay to access the ports of Long Beach and Los Angeles.

A multi-pronged approach is the only way to tackle supply chain problems that have become systemic.

In an October 2021 presentation on San Pedro Bay's troubles, economic and transportation consulting firm Martin Associates and the Pacific Maritime Association suggested numerous structural solutions

including new warehouse capacity; improved productivity achieved at least in part through more automation; new rail capacity and equipment; and expansion of chassis supply. The need to minimize carbon footprint of container operations was underscored as well.

At other ports, necessary capacity improvements may include deeper channels. Marine terminal capacity improvements may include investments in port berths, cranes and yard space. There may also be a need for warehousing and distribution capacity, especially on-port and near-port, as e-commerce spikes everywhere.

The range of non-structural solutions presented by Martin Associates was even more diverse, ranging from extending hours and improving rail velocity to labor productivity and diverting cargo to ports with available capacity.

Some ports are finding relief by deploying pop-up inland container yards in strategic locations. Other solutions to alleviate the nation's clogged transportation pathways include extending operating hours through every link in the chain. Small changes by longshore labor, gate operators, government inspectors and others can help open bottlenecks, but in some markets, that is a tall order.

Michael Rubin, President and CEO of the Florida Ports Council, said there are early warning signs of another round of U.S. West Coast labor strife. It is hard to ask for longer hours when employer-labor relationships are already strained.

Longer hours won't improve productivity per person; however, they can improve facility throughput. To substantially improve per-person productivity, unions and supply chain participants may need to be open to more technology and training.

JACKSONVILLE HARBOR DEEPENING TO BE COMPLETE IN SUMMER 2022

The Jacksonville Harbor Deepening Project, the single-biggest growth initiative in the port's history, will be complete through the Blount Island Marine Terminal in the summer of 2022 - three years ahead of schedule.

The U.S. Army Corps of Engineers project began in early 2018. It will deepen Jacksonville's federal shipping channel from 40 to 47 feet, a depth tailor-made to safely accommodate the upsized and more economical ships of today's global container fleet. The project was predicated on a multi-year economic, engineering and environmental study.

The project includes construction of a new vessel turning basin to allow larger ships to turn at Blount Island berths.

The cost of the first three segments is \$409 million. Funding is provided by federal, state and city partners, as well as JAXPORT and port tenant SSA Atlantic.

The deepening project is imperative to safely handle more and larger vessels, leveraging routings available via both the Panama and Suez canals.



"The future for Jacksonville's distribution growth is especially bright as we look at JAXPORT's harbor deepening project completion in 2022," said JAXUSA Partnership President Aundra Wallace. "The port will be able to welcome fully loaded new-Panamax ships that can import and export more capacity to and from new destinations."

More ocean carrier capacity will help the port better serve America's growing consumption and help distribute American-made goods around the world, generating measurable economic benefits for the region.

FLORIDA'S SUPPLY CHAIN SOLUTIONS

Congestion is not ubiquitous along American transportation routings. JAXPORT has experienced no disruptions in the past two years.

In a typical year, free of COVID concerns, delays and bottlenecks occasionally occur at a port and the shippers and beneficial cargo owners work with carriers, partners and customers to find solutions.

Sheer volume dictates that those issues undoubtedly crop up more frequently at busy gateways.

Comparatively, Florida seaports have had minimal pandemic-related

supply chain disturbances, according to Rubin.

In large part that is because Florida, whose 14 seaports serve every commodity plus cruises, saw warning signs more than a decade ago, like deteriorating national transportation infrastructure related to a lack of ongoing investment, as well as looming regional supply chain deficiencies related to a massive influx of population numbering up to 1,000 people per day.

The Jacksonville region is proud of its ability to accommodate the in-migration. "Jacksonville is among the nation's fastest-growing cities, growing at 2 percent annually –

double that of the United States," according to Aundra Wallace, President of JAXUSA Partnership.

Ports and transportation leaders including Governor Ron DeSantis and the state legislature, the Florida Chamber of Commerce and the Florida Department of Transportation have set the bar high for statewide transportation infrastructure investment.

Florida's collaborative efforts are noteworthy. Rubin said results include the creation of a freight modal office. The Freight and Multimodal Operations (FMO) Office aims to invigorate Florida's economy and communities by providing

CERES TERMINALS AND JAXPORT ANNOUNCE LONG-TERM, \$60M INVESTMENT IN TRAPAC JACKSONVILLE CONTAINER TERMINAL

The JAXPORT Board of Directors unanimously approved a 20-year, \$60 million agreement between Ceres Terminals and JAXPORT for the lease and modernization of the 158-acre TraPac Jacksonville container terminal.

In a separate transaction, Ceres is purchasing the terminal's previous leaseholder, terminal operator TraPac Jacksonville, LLC from Mitsui O.S.K Lines, Ltd. (MOL), subject to closing conditions.

"We are excited about our long-term commitment to JAXPORT and the local community. Our significant investment in Dames Point Terminal provides an excellent gateway for South Atlantic-based distribution centers, well into the future," said Craig Mygatt, Ceres Terminals CEO.

The agreement includes a \$45 million lease with JAXPORT. Ceres will also make \$15 million in terminal upgrades, including investments in cargo handling equipment and systems.

"An investment of this magnitude speaks volumes about the opportunity that exists in Jacksonville," said



JAXPORT Board Chair Wendy Hamilton. "We are grateful to Ceres for their continued investment in our community and look forward to growing this important partnership in the future."

JAXPORT's largest single-tenant operated facility by acreage, TraPac Jacksonville features two 1,200-foot-long berths and six post-Panamax container cranes. Along with the existing Asian and South American services, the facility recently accommodated Hapag-Lloyd's AL3 European container service, which rerouted to JAXPORT for nine weeks to avoid US port congestion.

quality transportation networks that drive commerce. The office focuses on Florida's rail system and the state's multimodal freight programming. Intermodal freight investments are only an after-thought in many other parts of the U.S.

Rubin said that the state departments and agencies with whom Florida seaports work have become great stewards for progress. Their efforts have created a path to prioritize supply chain improvements statewide and are enhancing freight mobility.

In a little over a decade, seaports have received roughly a billion dollars in grant funding from the state of Florida, according to Rubin.

The State Infrastructure Bank has also made low-cost infrastructure loans to help finance a broad range of seaport projects.

The Florida Ports Council and its partners, Rubin said, "saw an opportunity to educate and we did. In our state, almost every member of the legislature had a port in their backyard. Our message resonated. Ports are critical hubs in the supply chain."

Nationally, it took a little longer for the message to sink in, but after a combination of work stoppages, natural disasters and then the massive COVID-19-related disruptions in national supply chains, federal action has arrived.

Florida's peninsular geography presents opportunities for supply chains. "We've got the Atlantic and the Gulf coasts, with several trade lanes on each, and eight container ports that offer valuable redundancy. We have always been America's main gateway to Latin America, and as a state, have diversified ocean carrier markets which have helped Florida build up its international legal, banking, insurance and other sectors in a way that positions us for long-term success in global markets. We aren't the end of the road, we are the beginning," Rubin said.

In late October 2021, Governor DeSantis hosted a media conference in Jacksonville to share with the world that JAXPORT, and indeed

all Florida seaports, are open, uncongested and ready to meet peak demands. Over the next two months, about a dozen vessels called on JAXPORT to avoid port congestion, including nine vessel calls from Hapag-Lloyd's AL3 European container service, which temporarily rerouted to Jacksonville.

To take advantage of Jacksonville's efficiencies and expedite the movement of about 1,600 containers, Hong Kong-based OW Logistics (OWL) chartered a retrofitted multi-purpose vessel from Taicang, China to Jacksonville.

"We were encountering port congestion. We certainly weren't going to go to the West Coast," said OWL President and Co-Founder Eric Seamon. "We had customers that were recurring – not just normal but also chartered customers – that wanted to move to the East Coast. So, we looked down the Eastern Seaboard and we went through that process. And it turned out by far the best possible spot for us was JAXPORT."



Seamon said cooperation throughout the entire port community in Jacksonville, including JAXPORT, terminal operator SSA and U.S. Customs, made the process easy. "Many ports won't take a vessel of this type and size because of the special handling that is involved," he said. "JAXPORT said 'bring it in, bring it on.'"

THE JAXPORT SOLUTION

"It is important to have a seamless infrastructure that allows raw materials or finished products to

move without any delays," said Wallace. A lack of congestion helps JAXPORT attract and maintain its extensive ocean carrier base, and its shipper mix.

More and more shippers are seeing great value in diversifying port gateways. Some dedicated U.S. west coast shippers are looking east.

With no congestion, JAXPORT has long been a gateway of choice for many global shippers.

Our strategy is simple



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OW Logistics chartered a retrofitted multipurpose vessel from Taicang, China to Jacksonville.

Mike Favo, General Manager of Jinko Solar (U.S.) Industries Inc., said, “JAXPORT is a major contributor to Jacksonville’s economic engine and plays a critical role in Jinko Solar’s success here. We import a lot of material to assemble our solar

panels, and a smooth supply chain is crucial to our productivity.”

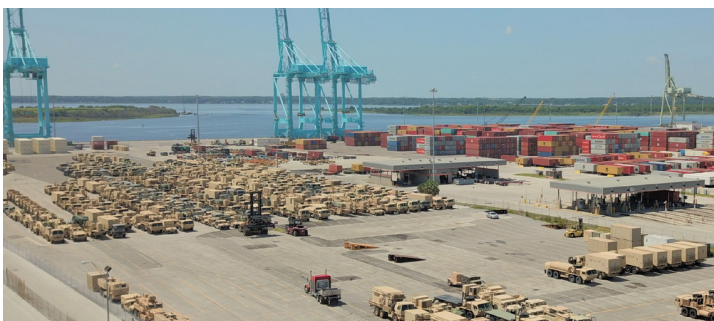
Favo described its seaport experience: “JAXPORT is a steady ship in the most uneven of waters. Cargo shows up on-time, materials

are unloaded, and deliveries occur promptly. That certainty is a most welcome and valued attribute. On the rare occasion we need JAXPORT to flex on short notice, the team there is always responsive and exceptionally supportive.”

JAXPORT takes pride in proving its capabilities by delivering capacity and efficiency at times when carriers and/or shippers need it the most.

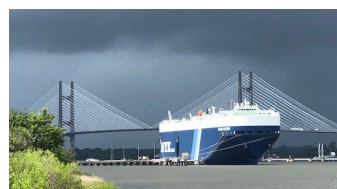
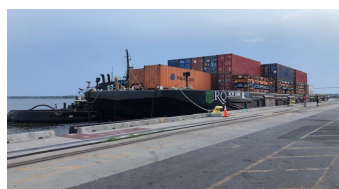
Port labor-employer relationships in Florida are decidedly friendly. It is a “right-to-work” state, and unions have built solid relationships and focused on service excellence, according to Rubin, more so than in many other states. “Labor is a strong partner at our ports,” said Rubin.

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SSA Marine is laser-focused on delivering peace of mind and reliable cargo service to carriers and beneficial cargo owners (BCOs) during its Jacksonville expansion.

“JAXPORT’s berths and harbor have remained fluid throughout the pandemic,” said SSA’s Vice President of Florida Operations Frank McBride. “There have been no ships waiting at anchorage, and ships can work as soon as they arrive in Jacksonville.”

It comes down to the efficiencies of Jacksonville’s terminal operators and labor unions, McBride said. Those entities play a critical role in ensuring that vessels and cargo continue to move freely. Truck turn times at JAXPORT are as low as 30 minutes.

Construction on SSA’s Jacksonville Container Terminal (JCT) on Blount Island began in January 2022 and will include eight phases planned over three years. The upgraded terminal will feature 90 acres of high-density pavement to accommodate taller stacks of containers. Upon completion in 2024, the SSA facility will be able to accommodate nearly 700,000 TEUs (containers) annually. The expansion will grow JAXPORT’s total TEU throughput capability to approximately two million TEUs a year.

JCT will have the capability to grow to 120 acres as needed in the future.

The terminal is a four-mile drive from JAXPORT’s Dames Point Intermodal Container Transfer Facility, offering direct rail service to and from Atlanta and Chicago, with additional service from Detroit.

“Included within the eight phases are upgraded terminal lighting, a new terminal gate system, and additional yard equipment. With upgrades to the terminal infrastructure, three new super post-Panamax cranes are on order and scheduled for delivery at the end of 2022,” said McBride.

The berth’s total length is 2,750 linear feet. The new gate offers six inbound lanes and six outbound.

In coordination with the 47-foot deepening project, berth improvements will be completed by JAXPORT in 2022 to enable the JCT to simultaneously accommodate two post-Panamax ships. The deepening project includes construction of a 47-foot deep vessel turning basin that will allow larger vessels calling on the terminal to turn at Blount Island.

“JAXPORT achieved record container volumes last year amid an ongoing pandemic and supply chain crisis – a testament to our efficiencies and capabilities,” said Chief Operating Officer Fred Wong. “Our major growth projects, anchored by the harbor deepening, enable us to build on this momentum and serve the growing needs of our customers well into the future.”

“This project upon completion will provide a highly productive international container terminal to meet the customers’ needs and take advantage of the region’s efficiencies,” said McBride.

The more than \$200 million project to modernize Blount Island is funded through a public-private partnership between JAXPORT and SSA, as well as a \$20 million grant from the U.S. Department of Transportation.

in the top ten nationwide for container counts, JAXPORT has no ships waiting, excellent marine terminal productivity, plenty of capacity and room to grow. It is served by three major interstates, three railroads, four deepwater

marine terminals, 40 trains daily and dozens of ocean carriers.

JAXPORT and its partners have invested more than \$2.5 billion in terminals, equipment, and access, and the gateway plans to invest

another \$2.6 billion over the next five years.

The Jacksonville gateway is a clear choice for shippers today and into the future. □

Enstructure LLC stevedores offload a breakbulk shipment of wood pulp at JAXPORT's Talleyrand Marine Terminal.



THINKING OUTSIDE THE BOX (AGAIN)

By Paul Scott Abbott

In a back-to-the-future shift, shipments of forest products and other goods that in recent years had moved inside containers are returning to transport outside the box, via traditional breakbulk mode.

The shift is coming amidst pandemic-era supply chain challenges including the lack of available containers and increased ocean freight rates for shipping the big boxes when they can be had.

Thus, the transition back to breakbulk modality is saving money while boosting timely dependability.

"We are seeing this shift with forest products - like plywood, lumber and pulp - which have a low relative value and can't absorb the higher ocean freight costs," said Ricardo "Rick" Schiappacasse, JAXPORT's Director of Forest Products and Specialty Cargos. "We not only discharge the ship, but are also involved in warehousing, storage

and distribution. This adds value to our terminal operation by handling several aspects of the shipment."

Leading the way at JAXPORT in this transition back out of containers is Wellesley, Massachusetts-based Enstructure LLC, which in mid-2021 acquired stevedoring operations of both Seonus and Portus as part of a significant expansion of its U.S. Southeast terminal network.

"Obviously, it has become a lot

more expensive to ship with containers,” said Matthew Satnick, Enstructure’s Co-CEO and Chairman. “This has led to consideration of options. We see breakbulk as a cost-effective solution.”



“In the present environment, customers want a diversified strategy.”

– Matthew Satnick, Co-CEO and Chairman,
Enstructure LLC

About two decades ago, many traditional breakbulk commodities began increasingly moving in containers. This filled readily available space that global containership operators were offering at reasonable prices rather than having that space go empty. Now, since the COVID-19 pandemic began disrupting supply chains in 2020, such container space no longer is widely available, and when it is, costs trend upward.

“In the present environment, customers want a diversified strategy,” Satnick said. “It’s all about having available capacity.”

Wood products and a number of other goods - from frozen poultry to juices - which had increasingly moved in containers on containerships since the turn of the millennium, are now once again journeying over the seas in breakbulk fashion on breakbulk and multipurpose vessels.

Recent such breakbulk shipments across JAXPORT docks have included imports of bundled wood pulp and plywood from South America, with breakbulk exports of frozen poultry and imports of refrigerated juices in upcoming plans, according to Philippe De Montigny, Co-CEO and Founder of Enstructure.

“Breakbulk is providing a low-cost, reliable solution,” De Montigny said, adding that it is too soon to tell if this

will be a longer-term trend or if a return to containers will come when the containerized cargo supply chain stabilizes, assuming it does so.

Satnick said he believes breakbulk will at least remain a viable alternative, and commented, “It is our hope and expectation that customers will think twice about returning to containers entirely. □



A breakbulk shipment of wood panel products is discharged from a vessel at JAXPORT's Talleyrand Marine Terminal.



MADE IN AMERICA:

PUERTO RICO PROVIDES SUPPLY CHAIN SECURITY AND ECONOMIC BENEFITS FOR MANUFACTURERS AND SHIPPERS

By Conrad Winter

As Made in America initiatives continue to gain steam throughout the U.S., Puerto Rico is proving to be an ideal trading partner for the U.S. mainland.

With a GDP of \$101 billion and an established industrial base that manufactures five of the world's top ten drugs, Puerto Rico's economy is on the rise. The recent growth is about to get turbocharged, with the infusion of \$100 billion in federal aid over the next 10 years.

The funds will do a lot for Puerto Rico's infrastructure, including planned energy upgrades and island-wide 5G—but the real boon will be to Puerto Rico and America's collective competitiveness, which in today's world means bringing American jobs and manufacturing home.

PUERTO RICO'S COMPETITIVENESS: STRATEGIES FOR SUCCESS

"I am a strong supporter of any effort that results in bringing jobs back to America. And that obviously also means bringing jobs back to Puerto Rico, as we are American citizens," stated Puerto Rico's Economic Development and Commerce Secretary Manuel Cidre. "Given Puerto Rico's history with manufacturing, we believe Puerto Rico is the best alternative for bringing back manufacturing operations."

He names six strategies as being key for achieving competitiveness on the domestic and international stage: becoming a world-class logistics center; instituting agile permitting; improving energy quality and cost; developing highly skilled talent; supporting a fair,

balanced and attractive tax system; and digitizing the economy.

A MANUFACTURING BASE THAT'S READY AND ROLLING

Puerto Rico's ambitious strategies are aided by manufacturing infrastructure that has been in place since the 1970s when manufacturers benefitting from Section 936 of the IRS Tax Code flooded the island. The program gave U.S. corporations some tax advantages for basing at least part of their operations in Puerto Rico.

Cidre explains that from 1970 to 2005, Puerto Rico developed an infrastructure specific for biopharma and bioscience. As a result, Puerto Ricans have over sixty years of experience working within those specific and highly regulated industries. That's positioned Puerto Rico to attract companies related

TOTE GROUP LAUNCHES FIRST COAST TERMINALS TO SERVE JAXPORT CUSTOMERS

The TOTE Group has established First Coast Terminals, LLC (FCT) to expand services offered to customers in the Port of Jacksonville.

FCT provides stevedoring and cargo operations in support of TOTE Maritime Puerto Rico's vessels at JAXPORT's Blount Island terminal. FCT leverages experienced port management personnel and a wide network of immediately deployable resources.

"The creation of First Coast Terminals further demonstrates the TOTE Group's long-term commitment to its customers, the Puerto Rico trade and the safe and efficient movement of freight through JAXPORT," said TOTE Group, LLC Chief Operating Officer Mike Noone. "This new terminal operations company provides customers with advantages supporting efficient operations that minimize downtime and expedite the loading and unloading of freight."

Situated on nearly 50 acres alongside the St. Johns River and 12.5 nautical miles from the sea buoy, FCT oversees five berths, capable of handling containers and roll-on/roll-

off (Ro/Ro) freight. FCT's operations accommodate 5,500 forty-foot equivalent units (FEUs) and 420 refrigerated (reefer) containers. Reefers at this JAXPORT terminal are supported by 422 underground reefer plugs and a backup power generator.

It also features a fenced facility that offers 24/7 security and surveillance by closed circuit cameras and onsite security guards. Visibility is provided by Electronic Data Interchange (EDI) technology for real-time information of gate activity, discharged and load updates, and container inventory. Container tracking is also available.

Services offered by FCT include: trucker validation and verification; receiving and dispatching of equipment, stevedore services for Lo/Lo, Ro/Ro, barges and vehicle carriers; vehicle receiving and dispatching for car carriers; receiving and dispatching of equipment; transfers from equipment; and stripping and stuffing of breakbulk cargo.

For more details about First Coast Terminals, visit firstcoastterminals.com, or Tote Maritime, visit totemaritime.com.

to bioscience. "We now have more than 30 highly specialized and technical operations for medical devices," he added.

Companies serving the growth are seeing new demand. An example is Isla Frio, one of Puerto Rico's temperature-controlled warehousing providers. The company's facility is a former Pepsi plant. According to Isla Frio General Manager Bismark Marquez, they had to accelerate their two-year growth plan to three months to accommodate the surge in pharmaceutical manufacturing, which requires temperature-controlled environments.

"Right now, we are moving our strategy to keep expanding to fill the whole building to 150,000 square feet, moving from 3,000 pallet positions to 12,000 pallet positions," he said. "Our original scope was focusing on the food industry. But right now we are targeting to split our business to 50 percent pharma, 50 percent food."

Existing factories and warehousing make Puerto Rico an attractive location for companies looking to reshore operations, especially when it comes to advanced processes.

Puerto Rico manufacturing proficiencies include much sterile manufacturing, according to

Invest Puerto Rico Chief Business Development Officer Michael Gay, CEcD. "We don't just do manufacturing in the health care industries, we do sterile manufacturing—and we've been doing that for 30 years. And that's clean rooms, FDA certified. It's highly specialized and technologically-advanced," he said.

EXPERIENCE AND EDUCATION SETS PUERTO RICO'S WORKFORCE APART

Puerto Rico's legacy of skilled workers and the expertise of its professionals and scientists is formidable as a result of its 60 years of manufacturing history.

Over the years, Puerto Rico has invested in education, too. “We have here more than 80 local universities. We graduate 60 percent of students in STEM fields, having one of the highest concentrations of scientists and engineers among the states.” Cidre said.

A REGULAR, RELIABLE AND READY TRANSPORTATION PIPELINE

Puerto Rico's academic achievements are an example of what's possible when islanders set their shoulders to a goal. Puerto Rico's already fulfilling on American

policies to reshore manufacturing of essentials like prescription drugs, seeds for staple crops, aerospace components, and even military uniforms. Gay observes that one thing the Trump and Biden administrations have in common is they want the critical supply chain for health care, biosciences, life sciences and defense industries to be made in America.

“We've got a really strong pipeline right now for medical devices, pharma and cell therapy, PPE, textiles and other manufacturing industries,” Gay said. “Puerto Rico

is America's medicine cabinet. We export more pharmaceuticals than any of the states.”

U.S. reshoring strategies that leverage Puerto Rican manufacturing are facilitated by established steamship service that operates in accord with the Jones Act for domestic cargo between the U.S. mainland and Puerto Rico.

The main lane is served by three shipping lines—Crowley, TOTE Maritime Puerto Rico and Trailer Bridge. Together, they have six arrivals in Puerto Rico and six

CROWLEY SUPPORTING RESEARCH AND DEVELOPING FUTURE SUPPLY CHAIN LEADERS

Crowley and the University of North Florida (UNF) are facilitating leading-edge transportation research and helping prepare the next generation of supply chain leaders through the Crowley Center for Transportation and Logistics (CCTL).

The center came online in July 2021. Closely connected to the Jacksonville transportation and logistics community through roots and proximity, CCTL is established within UNF's Coggin College of Business' transportation and logistics program and funded by a \$2.5 million endowment from Jacksonville-based Crowley.

“It's only right that UNF and Jacksonville be the epicenter of this center. The transportation and logistics industry has been a linchpin of this city throughout its history,” said Tom Crowley, Chairman and CEO of Crowley.

UNF's Coggin College of Business is considered among the best in the nation due to an active and supportive regional professional community and a high-tech Logistics IT Solutions Lab that enables CCTL's several hundred students to learn state-of-the-art supply chain tools and solutions.

Research is a prime focus of the center. According to CCTL Director David Swanson, “The research projects initiated by the CCTL will bring students into cutting-edge technology

and innovative change helping companies to build and operate competitive supply chains.”

Two faculty fellows have been appointed to head research projects related to sustainability in transportation. Associate Professor of Operations Management Nathan Kunz, PhD is leading a project on autonomous vehicles in the trucking industry and Transportation and Logistics Flagship Director Dawn Russell is working on sustainability initiatives which benefit marine port operations.

CCTL will also initiate analytic research programs. According to Swanson, they plan to produce peer-reviewed academic research publications and white papers to help practitioners apply research results to their operations.

Crowley's shipping and logistics operations serving Puerto Rico, the Caribbean and Central America have operated in the city for decades, providing containerized, oversized, refrigerated and liquefied natural gas (LNG) supply chain solutions.

For more details about the Crowley Center for Transportation and Logistics, visit: www.crowley.com/crowley-center-for-transportation-and-logistics/

TRAILER BRIDGE INTERNATIONAL

PROVIDING WORLDWIDE SOLUTIONS

Trailer Bridge is connecting destinations around the globe through Trailer Bridge International, a new shipping service providing worldwide end-to-end logistics solutions from a single-source provider.

Since its launch in May 2021, Trailer Bridge International has exported cargo from across the U.S. to the Dominican Republic, Latin America, Europe and destinations throughout Asia. They've also moved imports from Europe, Asia, Latin America as well as South Africa.

"Our goal has been to expand our service offerings outside of Trailer Bridge's core solutions-and I believe in the first seven months of business we have done just that," said Emma Phillips, Trailer Bridge Director, NVOCC & Compliance.

The move came at the urging of customers who have been requesting the enhanced services. The new offering builds on the company's decades of experience providing services using its fleet of marine and over-the-road assets.

"Our customers have been thrilled to have alternative solutions to move their cargo and receive the same white glove service they are provided on our asset side of the house," Phillips said. "Now they can get the same level of service for routes and services outside of what they perceived to be the norm from Trailer Bridge International."

Through its non-vessel operating common carrier (NVOCC) and freight forwarder licenses, Trailer Bridge aims to facilitate the demand for its expertise and capabilities beyond established services currently offered in the United States, Canada, Mexico, and the Caribbean.

Leveraging their logistics division, intermodal, asset and non-asset based service offerings, Trailer Bridge International can provide shippers with custom solutions for surmounting today's challenges in moving freight around the world.

"In this global shipping market you have to be able to provide customers with solutions outside of conventional methods," Phillips explained. Details of the new service are available at TrailerBridge.com

departures returning to JAXPORT every week with a three-to-six-day transit time.

"We don't have the fluctuations that the international markets have. We receive nine ships every week from the United States, and we know that every week we're going to see those ships," explained Puerto Rico Ports Authority (PRPA) Executive Director Joel Piza-Batiz. "That's a huge advantage right now in a supply chain where people cannot find containers and ships."

The vital Puerto Rico-JAXPORT connection facilitates 90% of the cargo Puerto Rico receives from the

U.S. and makes up more than half of JAXPORT's container business. PRPA and JAXPORT formalized the relationship on April 26, 2021 with a Memorandum of Understanding (MOU) affirming the longstanding partnership. Piza-Batiz described the MOU as a first between the two partners that will strengthen communication channels, enable the sharing of best practices and support emergency readiness.

With the current trucking bottlenecks caused by labor and equipment shortages on the U.S. mainland and the historically high inland costs that have resulted, predictable and price competitive

ocean service between the U.S. and Puerto Rico is another benefit enjoyed by companies manufacturing on the island.

In that way, Puerto Rico is helping alleviate two more supply chain challenges taking place in the U.S. by lessening reliance on costly, high-demand highway transport and reducing pressure on America's critically-overcapacity driver pool.

As Puerto Rico's economy advances, so does America's advantage in increasing domestic output and decreasing reliance on foreign countries for essential goods. □



FUELING THE FUTURE: JACKSONVILLE REMAINS ON THE FOREFRONT OF LNG INNOVATION

By Paul Scott Abbott

As demand for clean fuel continues to grow, LNG is spelling a greener future for the maritime industry, with JAXPORT and its industry partners at the forefront of this clean fuel revolution.

LNG advances are making waves beyond Northeast Florida to other areas of the Sunshine State and around the globe.

Short for liquefied natural gas, LNG is increasingly being used to power marine vessels, with Jacksonville serving as a burgeoning hub for efficiently supplying the environmentally friendly fuel.

JAXPORT continues to enhance

its leadership in the deployment of LNG, with JAXPORT partner JAX LNG nearing completion of a significant expansion to its facility on the St. Johns River. The company is also welcoming the arrival of North America's second and largest LNG bunker barge to Jacksonville that will augment the first North American barge, Clean Jacksonville. The additional barge will be homeported in Jacksonville to load fuel and bunker ships, while also moving along Florida's East Coast to fuel additional vessels.

Already, JAXPORT and its partners have achieved numerous LNG milestones, including serving as the first port to bunker a vessel

with LNG, conduct bunker barge fueling of LNG, bunker a foreign-flagged vessel with LNG, and offer a micro-site with storage tanks to pump LNG directly to a vessel via underground pipes.

Eagle LNG Partners is expanding its Jacksonville area footprint as well. The Houston-headquartered company – which already supplies Crowley with LNG from a nearby liquefaction plant and marine terminal and a bunkering facility at JAXPORT's Talleyrand Marine Terminal – is advancing plans to construct a \$500 million-plus LNG export facility in Northwest Jacksonville.

By the close of 2021, Eagle LNG had flawlessly completed 175 bunkering events at Talleyrand over the course of nearly four years, according to Tim Robertson, Jacksonville-based Manager of Operations and Finance for Eagle LNG Partners. Among those events at Talleyrand - one of the nation's first standalone LNG bunkering facilities - was the first such fueling of a foreign-flagged vessel, when the Swedish-flagged Fure Ven received LNG on Sept. 1, 2020.

"I am proud to be part of a team who trailblazes," Robertson said. "The developments in Jacksonville are a testament to how this community has embraced LNG. The activity in North Florida today is just the tip of the iceberg as the region is a global pioneer in small-scale LNG and LNG bunkering, and well-positioned to play a critical role in the energy transition the entire world is embarking upon. In addition, this past July, in a groundbreaking ceremony in Crabbs Antigua, Eagle LNG and Antiguan companies Antigua

The first U.S. fueling of a marine vessel with a blend of LNG and renewable LNG took place in September 2021 at JAXPORT. The blend was loaded from the Clean Jacksonville bunker barge onto TOTE Maritime Puerto Rico's Isla Bella.



Power Company (APC) and the Antigua Public Utilities Authority (APUA) announced what will be the island's first power plant integrating natural gas infrastructure and power generation produced from our Jacksonville, Florida production facility."

Most recently, in December 2021, Eagle LNG inked a long-term supply contract with utility company WEB Aruba to establish an LNG receiving

and regasification terminal in Aruba, furthering Eagle LNG's Caribbean basin presence. In October 2020, Eagle LNG entered into a long-term supply agreement with Barbuda Ocean Club in Barbuda, West Indies.

Robert Butts, Gas Business Development Manager of JAX LNG, is equally bullish on liquefied natural gas and the opportunities it presents for the JAXPORT community and beyond.



JAX LNG, located near Jacksonville, FL, is a leading supplier of liquefied natural gas.

- Serving marine, trucking, rail, aerospace, power generation, commercial and industrial markets
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- Storage Capacity: 2 million gallons
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Siem Confucius is one of two LNG-powered Siem Car Carriers AS vessels regularly calling JAXPORT to unload factory-new Volkswagen cars and SUVs.

“Having a ready and abundant supply of LNG in the port – and the logistics available to deliver LNG to a receiving ship during SIMOPS [simultaneous operations] – complements JAXPORT’s slogan, ‘X Marks the Spot,’” Butts said. “Along with JAXPORT’s other great offerings, the availability of LNG at the port helps to draw more modern ships to our port.”

Among the ships fueling up on LNG at JAXPORT are those of Jacksonville-based companies TOTE Maritime Puerto Rico and Crowley, as well as global Siem Car Carriers AS, based in Norway.

TOTE put the world’s first LNG-powered containership, *Isla Bella*, into service in 2015 and was joined by the *Perla del Caribe* the following year. Recently, *Isla Bella* was at the center of another first. In September 2021, it became the first marine vessel to be fueled in the United States with a blend of LNG and renewable LNG, or RLNG.

RLNG is produced from sustainable sources such as decomposed organic waste and is compatible with existing natural gas infrastructure. The fuel comes from JAX LNG via the Clean Jacksonville bunker barge. Using RLNG to fuel marine vessels is a readily available pathway to net-zero emissions by 2050, according to JAX LNG.

Crowley’s LNG-fueled combination container and rolling cargo, or ConRo, ships *El Coquí* and *Taíno*, were delivered in 2018 and were the first of their kind to be powered by LNG. The ships carry as many as 2,400 20-foot equivalent container units, or TEUs, at a cruising speed of 22 knots – providing enhanced transit times of just over two days. An enclosed roll-on/roll-off garage has capacity for 400 vehicles and other rolling stock.

Containerships aren’t the only vessels fueling up on LNG at JAXPORT. Sister roll-on/roll-off vessels *Siem Confucius* and *Siem*

Aristotle, both placed into service in 2020 by Siem Car Carriers, regularly load up on LNG from the JAX LNG facility to make their voyages delivering Volkswagen Group vehicles to Jacksonville from Emden, Germany, and Veracruz, Mexico. The environmental consciousness of the Siem firm coincides with the automaker’s green commitment.

“JAXPORT has become a great enabler of our efficient operation,” said Philip Bacon, Vice President of Operations for Siem Car Carriers. “More LNG vessels will come to JAXPORT, and everyone will benefit.”

Ricardo “Rick” Schiappacasse, JAXPORT’s Director of Forest Products and Specialty Cargos, noted that current shipyard order books show dozens of LNG-powered cargo and cruise vessels slated for delivery over the next few years.

“I credit our partners – JAX LNG, Eagle LNG, Crowley and TOTE – for putting us on the map,” Schiappacasse said. “Well over \$1 billion has been invested in infrastructure to make all of JAXPORT’s LNG advances happen.”

The JAX LNG expansion is particularly notable. It will triple liquefaction capability to 360,000 gallons a day and double LNG storage capacity to 4 million gallons at the St. Johns River facility – at which JAX LNG began operations in 2018 to bring LNG to customers across maritime, trucking, aerospace and utility sectors. JAX LNG is a 50-50 joint venture between Pivotal LNG and NorthStar Midstream. Pivotal LNG is an operating company within Richmond, Virginia-based

WHAT IS LNG?

Liquefied natural gas, or LNG for short, is a natural gas that has been cooled to a liquid state - at about -260 degrees Fahrenheit - for shipping and storage. The volume of natural gas in its liquid state is about 600 times smaller than its volume in its gaseous state. This process makes it possible to transport natural gas to places pipelines do not reach.

LNG is stable and lighter than air. It is neither toxic nor corrosive and is recognized as the cleanest available fossil fuel, netting a 100 percent reduction in sulfur oxide (SOx)

and particulate matter (PM), and a 92 percent reduction in nitrogen oxide (NOx). LNG also has the ability, compared with conventional fossil fuels, to significantly reduce carbon dioxide (CO₂), a contributor to greenhouse gas emissions.

Because of its “green” nature, LNG helps marine transportation companies meet increasingly strict International Maritime Organization emissions requirements while facilitating cleaner air for all.

JAX LNG is completing a significant expansion of its facility along the St. Johns River, tripling liquefaction capabilities and doubling LNG storage.



BHE GT&S, which is a subsidiary of Berkshire Hathaway Energy.

“We know the use of LNG is leading the discussions among manufacturers, transporters and customers as they explore technologies to optimize their supply chains, achieve regulatory compliance and work toward their sustainability goals,” Butts said. “With JAXPORT now routinely welcoming dual-fueled modern ships, there is a direct benefit to our community as these newer, larger and more sophisticated ships are delivering cargo through JAXPORT in a more efficient and environmentally thoughtful manner.

Along with that added benefit, the opportunities for LNG as a clean fuel source continue to grow.

“Given the environmental and economic advantages LNG possesses over other alternatives, the use of LNG will continue to expand as a transportation fuel across all segments,” Butts continued. “In my view, LNG continues to provide JAXPORT, along with our industry partners, the opportunity to remain innovative, bold and responsive to market demands. In short – to continue to lead. Many have said that Jacksonville has been the center stage for the development of LNG as fuel in the U.S. This accolade was

founded upon the innovative and bold leadership at TOTE Maritime and Crowley Maritime and was enabled by a collective group of committed stakeholders.”

Butts cited positive relationships with JAXPORT, the U.S. Coast Guard and such stakeholders as the Jacksonville Fire Department, St. Johns Bar Pilots, Jacksonville Marine Transportation Exchange and members of the Propeller Club of Jacksonville.

“JAXPORT has been a great advocate for LNG, and we greatly appreciate their leadership when working through LNG bunkering opportunities and planning considerations to ensure suitable berthing for our customers’ vessels,” Butts said. “As we near the commissioning of the Phase II expansion at JAX LNG in early 2022, and we welcome the arrival of North America’s largest bunker vessel, Clean Canaveral, we look forward to our continued engagement with JAXPORT and stakeholders to advocate for the area’s unique advantages.” □



LNG BUNKERING NORTH AMERICAN SUMMIT

Clean fuel leaders from all over the world gathered in Northeast Florida for the inaugural LNG Bunkering North American Summit.

Attendees represented all aspects of the supply chain, including shippers, regulators, ports, terminals, and fuel and technology providers.

Discussion topics included developing North America's LNG bunkering infrastructure, strategies for meeting growing global demand for LNG, and advancements in clean fuel technology.

JAXPORT Chief Operating Officer Fred Wong also shared insights about

how JAXPORT partners Eagle LNG, JAX LNG, Crowley, TOTE, and the U.S. Coast Guard continue to drive LNG innovation in Northeast Florida.

Visit JAXPORT.com/LNG for more information about the port's on-dock and near-dock LNG fueling capabilities. □



CRUISE RETURNS TO JACKSONVILLE



Following a two-year pause due to the pandemic, Carnival Cruise Line service returned to Jacksonville with the arrival of Carnival Spirit in March 2022.

The vessel temporarily sailed from JAXPORT until the arrival of the 2,190-passenger *Carnival Elation* in April 2022. Previously homeported at JAXPORT from 2016-2019, *Carnival Elation* assumes *Carnival Ecstasy's* popular cruise program to The Bahamas, as *Carnival Ecstasy* repositions to Mobile, Ala.

In addition to service from Carnival, the JAXPORT Cruise Terminal also offers port of call opportunities for smaller cruise lines, including American Queen Voyages, which recently launched limited edition 12-day voyages to destinations throughout the Southeast U.S. and The Bahamas from JAXPORT.

With 98 million people living within a day's drive of Jacksonville, JAXPORT offers convenient cruise access for passengers throughout the region.

A study found that 60 percent of travelers cruising through JAXPORT cited "easy access to the port" as the primary reason for choosing Jacksonville. In addition, more than three-quarters of passengers surveyed said they would be "very likely" to return to the city for a future vacation.

The health and safety of JAXPORT employees and guests is the port's top priority. In response to COVID-19, clear physical barriers have been installed in the cruise terminal debarkation area to facilitate social distancing. In addition, the port is working with its partners to provide enhanced cleaning and sanitation protocols in accordance with CDC guidelines, including sanitation of the facility before each cruise.

Visit [JAXPORT.com/cruise](https://jaxport.com/cruise) for additional information. □

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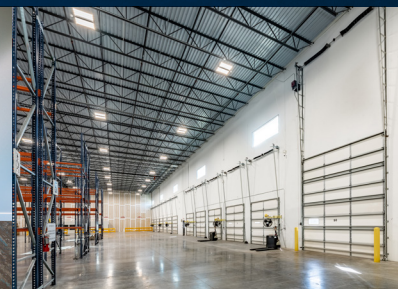
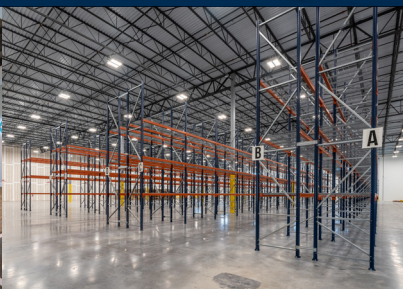
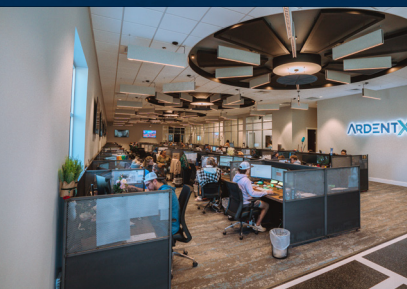
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FIVE TRENDS

DRIVING CHANGE IN THE AUTO SUPPLY CHAIN

By Lori Musser

An extraordinary transformation is taking place in the auto arena. The spike in demand for electric vehicles (EVs), the emerging need for digitally connected cars, and the desire for more accessories and comforts is driving comprehensive change in auto production and supply chains.

As one of the nation's largest vehicle-handling centers, JAXPORT and its partners are on the forefront of the auto evolution.

TREND NO. 1: MORE ELECTRIC VEHICLES

The auto industry is now decreasing its reliance on hydrocarbon fuels. Batteries continue to improve, making electric vehicles acceptable

to more drivers and hybrid vehicles an option for others. A precipitous drop in internal combustion engines is predicted, as their production is increasingly replaced by battery-powered EVs to help the world slash greenhouse gas emissions.

Industry analysts predict the uptake of EVs will soon accelerate, especially given a push by a number of governments who have alternatively prohibited the sale of fossil-fuel-powered vehicles at a set future date or offered financial incentives for EV purchases.

SOLUTIONS

EV batteries may challenge the transportation industry. EV supply

chains require carriers and terminals with specialized experience and equipment, including charging stations or movable chargers with fittings for particular vehicle models. There may also be specific charge levels required at various points in the supply chain.

JAXPORT's three auto processing partners – AMPORTS, Wallenius Wilhelmsen Solutions and Southeast Toyota Distributors – offer more than 250 acres of capacity on port terminals.

The port's auto partners already handle many hybrids but are gearing up for the switch to more fully electric vehicles. Additional charging

infrastructure, terminal parking realignments and training to keep up with evolving industry standards are being introduced in phases.



“JAXPORT is the only port positioned to move cars into the growing Central and South Florida markets and all throughout the southeast US within a day’s drive.”

– John Freeman, JAXUSA Partnership Senior Director of Business Development

JAXPORT’s Director of Automotive Accounts

Alberto Cabrera said as the industry transitions to more EVs, the port’s electrical capacity is ready. “We recently upgraded our Blount Island electrical grid to have more than enough capacity for charging stations for EVs,” Cabrera said.

The state of Florida has also taken major steps to support EV markets. Those steps include a historic investment in improving the state’s electric vehicle charging grid, according to JAXUSA Partnership’s Senior Director of Business Development John Freeman.

TREND NO. 2: NEW DIGITAL GADGETS

As Americans deepen their reliance on digitized data, their vehicles will be designed and equipped to increasingly support digitized

applications. There will be more connectivity for social media; music and other entertainment; GPS and routing alternatives; toll and parking payment; and safety needs. There will be programming to predict and direct maintenance. There will also be some systems to protect driver data, and other systems to share it.

Drivers are already demanding these modern features and the auto industry is racing to design, build and supply the right products, engage customers, and collect and use data for better customer service and industry success.

SOLUTIONS

JAXPORT’s three sophisticated auto processing facilities are able to install digital assets at the port before vehicles are sent to the market.

TREND 3: MORE ACCESSORIES

Drivers are increasingly interested in adding vehicle accessories, such as trailer hitches, extended-range remote starts, back-up sensors, bumper protectors and digital options. SUVs allow greater accessory opportunities and provide value-added installation opportunities to port processors. Ports that provide these services help accelerate delivery of custom-ordered vehicles.

SOLUTIONS

Because accessory installation is becoming more highly skilled, it may be more practical to rely on expert port processors to handle the accessorization. High port volumes generate technical competencies that may not be as developed at a dealership. Also, it can be



1A Auto Warehouse

more prudent for car-makers and original equipment manufacturers to conduct quality control at a single port site than at hundreds of dealerships.

At JAXPORT, labor has ramped up its expertise in a wide range of complex accessory installation skills, benefiting auto producers and buyers alike.

TREND 4: LARGER VEHICLES

Sales of large vehicles, including SUVs, continue to rise, however, larger vehicles take up more space.

SOLUTIONS

The space requirement impacts ocean, road and rail carriers significantly. JAXPORT, fortunately, has plenty of auto space, and long-term plans already provide for expanding the port's vehicle-handling capacity by 25 percent through an investment at the Dames Point Marine Terminal, when volumes warrant. The project will provide a larger contiguous auto yard footprint with direct waterside access.

Cabrera said that the faster on-port vehicle dwell times associated with COVID-19 disrupted supply chains (which have declined from a typical two-to-four-week dwell to a one-week dwell, or less) means that auto capacity has, in effect, risen at the port.

Cabrera also noted that, in general, the newest ocean car carriers are larger than in the past and their schedules are somewhat variable. To that end, JAXPORT supplements its two dedicated Ro/Ro berths with a multi-user pier at Blount Island, providing

Ro/Ro carriers with options and flexibility.

TREND 5: TRANSFORMED SUPPLY CHAINS

Auto industry supply chains are changing. Production locations of vehicles may shift. New suppliers of EV engine components - including batteries and electric motors and transmissions - will develop. Also, almost every buyer now wants faster delivery of new vehicles. Furthermore, the same consumers now demanding EVs will soon demand eco-friendlier ocean and inland carriage, which will impact bunkering/fueling.

SOLUTIONS

JAXPORT has plans in place to enhance auto facilities as developments dictate. It is also a leader in LNG fuels, and already accommodates dual-fuel ships similar to those on order for the car-carrier trades.

The shift in buying habits has created demand for next-day and even same-day delivery of new vehicles. Freeman said Jacksonville's location gives manufacturers and distributors another edge. "JAXPORT is the only port positioned to move cars into the growing Central and South Florida markets and all throughout the southeast US within a day's drive," Freeman said.

THE AUTO CLUSTER GROWS

Dovetailing with its booming vehicle freight business, Jacksonville has become home to many automotive companies including multiple vehicle and/or parts distribution centers.

Freeman said Jacksonville continues to prove attractive to major brands throughout the automotive supply chain. That's important to a state with a growing population - one that leads the nation in new vehicle sales.

"E-commerce retailers 1A Auto and Carparts.com have introduced distribution centers in Jacksonville, joining the likes of OEMs Volkswagen, BMW and Mercedes-Benz, as well as manufacturers like industrial battery maker Saft, all of whom have distribution operations in the region," according to Freeman.

WHAT'S NEXT?

Automation and autonomous vehicles, or AVs, are coming. Freeman said Jacksonville has made a name for itself as a testing ground for AV technology through the Jacksonville Transportation Authority's (JTA) Test & Learn track.

In a pioneering and robust AV effort, the JTA's Ultimate Urban Circulator initiative, dubbed U2C, is expected to modernize and expand Jacksonville's Skyway and introduce autonomous vehicles into JTA's transportation system. U2C proposes to transform the current Skyway, extending its reach within the urban core through the Bay Street Innovation Corridor and expanding beyond into adjacent neighborhoods.

The Jacksonville gateway continues to unearth opportunities hidden in auto industry trends, revealing great value for OEMs, auto industry distribution centers, parts distributors and many related businesses. □

ELECTRIC VEHICLE MANUFACTURER SELECTS JACKSONVILLE



Cenntro Automotive, a leading Electric Vehicle (EV) technology company that distributes vehicles to more than 30 countries, is making Jacksonville the home for its first U.S.-based manufacturing facility.

The 100,000-square-foot facility supports production of the company's existing vehicle lines, with a possible expansion to support additional vehicles and a battery packing operation. The new facility will produce over 50,000 vehicles within four years as well as support assembly, quality and testing processes, parts warehousing, distribution, and administrative functions. When fully operational, the Jacksonville facility will create up to 34 new jobs including research

and development specialists, highly-skilled technicians, and administrative support.

Cenntro will use JAXPORT to import materials for vehicle production and export some of the finished vehicles to partners and clients across the globe. The company's eco-friendly vehicles are commonly used as fleet vehicles for businesses of all sizes as well as government agencies.

"Jacksonville is the ideal spot for our first U.S. manufacturing facility with JAXPORT providing a strong foundation in advanced manufacturing and a growing innovation ecosystem," said Peter Wang, Chairman and CEO of Cenntro Automotive. "We believe Jacksonville provides a great talent pool as we look forward to contributing to the growing advanced manufacturing environment. Our new Jacksonville hub will serve as a cornerstone for our U.S. commercial electric vehicle sales and manufacturing efforts as our seventh assembly plant worldwide."

Cenntro expects to invest \$25 million into the facility and to begin assembling vehicles in early 2022.

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WELCOME TO THE "COLD RUSH"

REFRIGERATED STORAGE PROVIDERS RUSH TO FILL DEMAND THROUGH NEW BUILDS AND BIG INNOVATIONS

By Conrad Winter

173 years after San Francisco witnessed the rush that brought speculators and entrepreneurs by the thousands to the area for cold, hard gold, logistics hubs across the country like Jacksonville are experiencing a rush for refrigerated space like nothing before.

Opportunity caused the gold rush of 1848, but investment, innovation and infrastructure fueled its growth. The same is true with the cold rush of today. The need for cold storage appears insatiable, and the current infusion of funds, expansion and space-saving innovations is fueling progress at an astounding rate.

MEETING CONSUMERS' APPETITE FOR FRESH AND FROZEN

Frozen food sales continue to climb. They're up 22% from pre-pandemic

levels according to the American Frozen Food Institute. Additionally, health-conscious consumers are eating more fresh food worldwide. These two trends have fueled a cold storage shortage that was high before the pandemic and is increasing by the day.

JAXPORT Director of Specialty Cargo Sales Rick Schiappacasse continues to see high demand for the port's refrigerated cargo capabilities. He says the drivers of the surge are primarily frozen seafood being imported and exported, poultry arriving from the Southeast to be USDA inspected, blast-frozen and exported around the world, and fresh produce arriving to cold storage facilities and distributed to large supermarket chains.

Lineage, one of the world's largest

cold storage providers, operates two Jacksonville frozen goods storage facilities, with none of their rooms currently having a temperature higher than negative ten, but the company has capability to adjust to higher temperatures when customer demand requires the service.

FROZEN AND CHILLED TRENDS NOT COOLING OFF

Demand for fresh, organic and frozen foods is driving cold storage providers to build. JAXPORT partners alone will add two new facilities and almost 200,000 square feet of cold storage in the immediate vicinity of the port in 2022.

According to Ryan Laurent, Vice President of Sales for Lineage, the demand for frozen space at Lineage's new 222,000 square-foot facility near downtown Jacksonville has been



unprecedented. When it opened in 2020, it was 90% full after 18 months. The typical ramp-up period for their buildings is 36 months.

Another cold storage company called Axionlog is in the process of opening a 50,000 square-foot multi-temperature-controlled facility in Jacksonville, north of JAXPORT'S Blount Island Marine Terminal. They are already making plans to grow to meet demand.

"We always try to build facilities that can be expanded," said Axionlog Supply Chain Director Álvaro Carretero Lanchas. "Last year, we expanded our facility in Colombia. Right now we are expanding the new distribution center in Uruguay. And yes, we are planning that in the next three years, we will need to expand this facility in Jacksonville."

INNOVATION'S ROLE IN MEETING DEMAND

Companies aren't just expanding laterally across the country. Given the high costs of construction, new facilities are being designed and built with higher clearance heights with a strong focus on maximizing

space utilization. The key to productivity and energy efficiency in these facilities is in making the most of vertical space. Older buildings tend to have lower ceilings, hence today's demand for new builds.

In addition to high ceilings, FlexCold will use mobile racking to maximize the number of pallet positions in their new temperature-controlled warehouse three miles from JAXPORT. Mobile racks allow for greater density, increased product accessibility and storage, and can move around to make room for other cargo.

Jeff Manno, Co-Founder and Managing Partner of FlexCold, said mobile racking created by affiliate company FlexSpace will enable their JAXPORT facility to accommodate 25,000 pallet positions in a 150,000 square foot facility. He added that to achieve the same number of pallet positions with a static racking system, it would typically require 70,000 to 100,000 additional square feet.

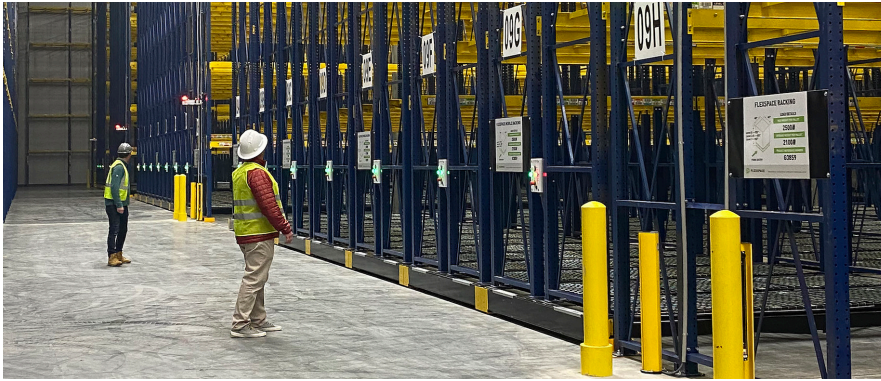
Technology represents the next frontier for cold storage providers in maximizing cube utilization through

improved flow and speedy turnover of pallet positions.

According to Laurent, Lineage recently started rolling out the LinOS operating system and Lineage Link platform across their warehouse network to create the foundation for future efficiencies. "As it applies to JAXPORT, we're going to continue to invest in the technology of our operating systems and look at ways to automate some of our processes to become more efficient and better serve our customers."

As a terminal and logistics company, Enstructure provides material handling, warehousing, and logistics solutions at JAXPORT'S Blount Island and Talleyrand marine terminals and also provides cold chain solutions at Seaonus Cold Storage in Jacksonville. Enstructure's Seaonus Cold Storage is an FDA-approved cold storage facility with over 8.2 million cubic feet of racked, refrigerated, and frozen storage.

"Our Jacksonville facilities are uniquely positioned to provide an



end-to-end solution to our customers that require an import/export solution in the Southeast,” said Matthew Satnick, Co-CEO and Chairman of Enstructure. “Our ability to provide both cold storage and terminal solutions to the Jacksonville market enables us to strategically serve our customers via truck, rail or ship,” said Philippe De Montigny, Co-CEO and Founder of Enstructure.

NEW SERVICES SPAWNED TO SATISFY NEEDS

JAXPORT partners are finding themselves on the leading edge of frozen and chilled logistics. The availability of blast freezing capabilities combined with what Schiappacasse described as a very

close working relationship with regulatory authorities helps JAXPORT enable shippers to choreograph time-sensitive inspection, blast-freezing and exporting to destinations around the world.

In addition to FlexCold’s blast-freezing specialty in Jacksonville, the company looks to roll out its business model to other markets. “We’re also focused on being able to really be a solution for smaller food distributors and manufacturers that are having a very difficult time accessing space,” Manno said.

In response to the high cost of shipping among countries in Central and South America as well as the Caribbean, Axionlog is taking temperature-

controlled deconsolidation and consolidation to new limits. They plan to establish a foreign trade zone (FTZ) within Jacksonville. The FTZ will enable Axionlog to receive containers of produce from growers throughout Central and South America as well as the Caribbean, then separate and combine them into containers destined for countries in the same regions.

Carretero sees the demand for temperature-controlled products soaring in the Caribbean and beyond in the near future with countries’ borders reopening and tourists returning. “In these places, the tourist is very important,” Carretero said. “That means that the demand will increase for good products because the economy has reopened.”

Add the hungry tourist economies of the world to the growing demand for fresh and frozen foods—as well as the insatiable need for temperature-controlled warehousing to get it to them.

For inspiration on how to get in on the cold rush, companies can look to Jacksonville for the leading edge of practice. □

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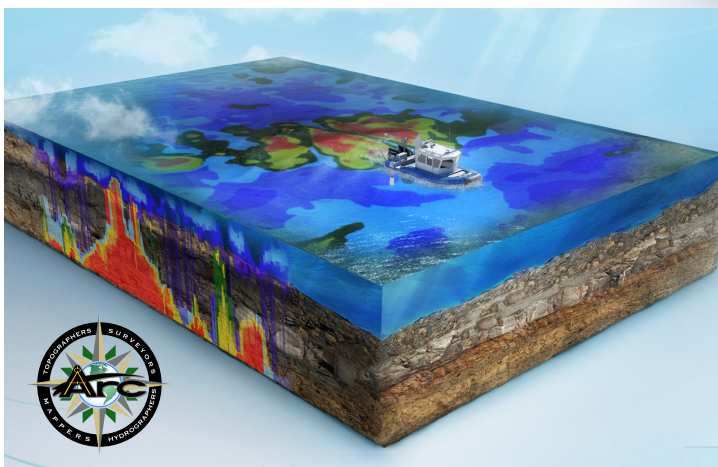
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NEW PORT INITIATIVE BRINGS TOGETHER GLOBAL COMMERCE AND ENVIRONMENTAL STEWARDSHIP

The St. Johns River is Northeast Florida's connection to global commerce. It serves as an economic lifeline for the region, ensuring ocean carriers from all over the world can call JAXPORT efficiently.

Each year, about 1,500 vessels cross the river to call on Jacksonville's port. These ships carry everything from household and consumer goods to

building materials and U.S. military cargo. In all, the river carries about 10 million tons of cargo through JAXPORT's terminals annually, pumping more than \$31 billion into the regional economy.

In addition to facilitating commerce, the river serves as a recreational outlet for fishing, boating, kayaking and other outdoor activities. It's

also the centerpiece of a thriving ecosystem, serving as home to a variety of aquatic grasses and marine animals including manatees, fish, dolphins, otters and reptiles.

To help protect this vital natural resource, JAXPORT teamed up with Jacksonville University (JU) to launch "Connected," an initiative to educate the community about protecting the river.

"I am a firm believer that there is a nexus between commerce and protecting the environment," said JAXPORT CEO Eric Green. "As the largest commercial user of the harbor, we are proud to do our part to help facilitate the connection between environmental stewardship and economic opportunity, ultimately benefiting our river and community."

JAXPORT's five-year Strategic Master Plan includes an increased focus on resiliency and environmental sensitivity. The port has long

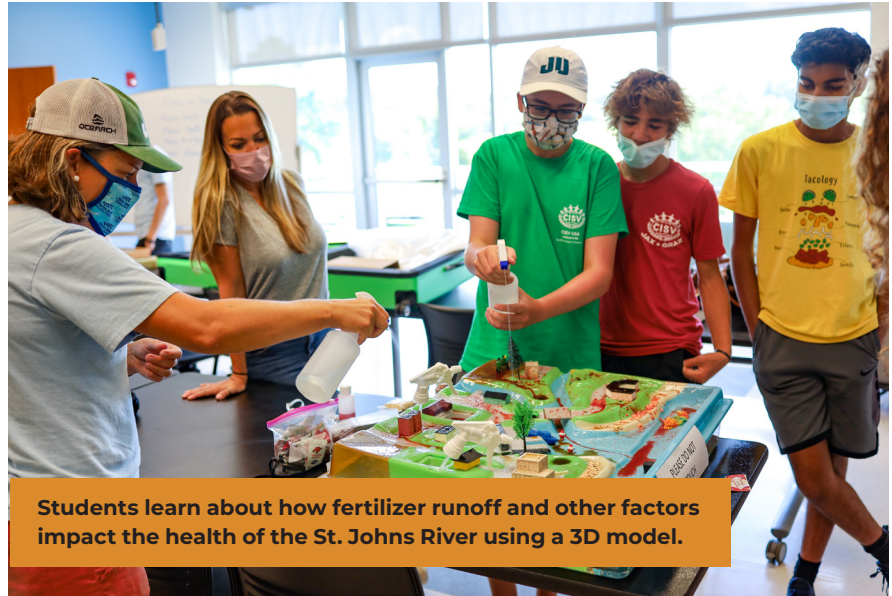


Jacksonville University scientists demonstrate water quality testing techniques.

supported eco-friendly programs in addition to its improvements made at terminals - such as the inclusion of electric cranes – and the Connected program is a natural extension of these initiatives. The program provides one-on-one instruction from JU river experts to schools and community groups about the importance of the St. Johns River's health and the steps citizens and businesses alike can take to protect it.

"JAXPORT and Jacksonville University have a long history of partnership on initiatives that benefit our region - connected by this body of water and what it means to both of our organizations," said JAXPORT President Tim Cost.

"I am pleased to see two organizations that are dear to me come together for such an important partnership," said JAXPORT Immediate Past Chairman Jamie Shelton, who also serves as Chairman of the JU Board of Trustees. "I look forward to seeing the incredible educational opportunities that will come from this partnership, and the positive



Students learn about how fertilizer runoff and other factors impact the health of the St. Johns River using a 3D model.

impact it will have on the health and vitality of our river for generations to come," Shelton continued.

As a leading environmental research institution, JU's Marine Science Research Institute (MSRI) provides hands-on research examining environmental and ecological issues confronting the St. Johns River and its wildlife. The institute partners with area schools to offer educational opportunities focused on marine environmental sciences to students of all ages.

"The St. Johns River is the heartbeat of our city and our region, and as a community, we are all connected to the river in some way," said MSRI Executive Director Dr. Quinton White, who has studied the St. Johns River and its diverse wildlife for more than 40 years. "As neighbors across the river, Jacksonville University and JAXPORT both understand how important the river is to our thriving city. We share a common goal of ensuring the river is healthy for future generations because our environment and economy depend on it."

Through Connected, Scientist and Assistant Professor Dr. Melinda Simmons is leading faculty in offering informative lectures, interactive activities and resources for educators on topics that include: ecosystems and wildlife found in and around the river; hydrology and water cycles; the river's role in our city's history; and its importance to the regional economy.

"Connected is far more than just a series of lectures," Simmons said. "It is an open invitation to explore and engage with our beautiful St. Johns



JAXPORT Immediate Past Chairman Jamie Shelton discusses the port's commitment to environmental stewardship during a news conference announcing the partnership.

River with the goal of inspiring all members of our community to value and protect it.”

ENGAGEMENT IS KEY

Local students are already learning from both Dr. White and Dr. Simmons. The river experts kicked off the program at the MSRI by showing students how various hazards, including applying too much fertilizer to your lawn, impact the river. The students were able to learn about water quality by monitoring the river’s edge along the JU campus and in deeper water during a boat tour. Back in the classroom, they examined how pollutants affect the river using a 3-D model that demonstrates how the St. Johns River watershed works.

“They love the hands-on aspect; they love creating the rain,” Dr. Simmons said. “There’s been so many studies that show that when you add a hands-on component to learning, it gets across so much better and it sticks with people. It’s empowering and it makes them part of the learning process.”

Prior to the initiative’s launch, Jacksonville University’s public opinion research and polling expert,

Marine Science Research Institute Executive Director Dr. Quinton White has studied the St. Johns River for more than 40 years.



Dr. Raymond Oldakowski, conducted a survey to assess current community awareness and opinion of the St. Johns River and also establish a baseline for measuring success.

Of nearly 470 randomly-selected individuals who were surveyed, nearly 80 percent placed a high value of importance on the river as an asset to Jacksonville. More than 99 percent of those surveyed said it is at least “somewhat” important for people in Jacksonville to learn about the river, while one in four respondents said they lacked the knowledge they need to help protect the health of the river.

With funding from JAXPORT, scientists have the opportunity to educate and inspire those with additional awareness. It’s a challenge that excites Dr. Simmons.

“I love educating and interacting with the public and I care a lot about the river,” Dr. Simmons said. “I grew up on the river until we moved out to the beach. So, I know it from the in-town living, on that aspect of the river, and seeing it flow out to the beach. This opportunity to combine the two things I love is like a dream come true.” □



Jacksonville University President Tim Cost speaks about the longstanding partnership between JU and JAXPORT.

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BREAKING NEW GROUND: E-COMMERCE DRIVES DISTRIBUTION CENTER BOOM

By *Lori Musser*

Sites are available, the price is right and the demand is unrelenting, prompting distribution and fulfillment centers to make a beeline to Northeast Florida.

With a remarkable need for distribution and logistics capacity throughout the United States, Jacksonville and surrounding counties have already welcomed a large number of distribution facilities and laid out the welcome mat for more.

100-MILLION-SQUARE-FOOT MARKET

Year-to-date leasing activity reported in Cushman & Wakefield's Q3 2021 Jacksonville industrial market report registered 4.9 million square feet of interest in leasing in an almost 100-million-square foot market. Three-quarters

of the market is warehouse and distribution space with the remaining amount allocated to manufacturing and flex uses.

Top employers whose activities include large-scale distribution and logistics operations include Amazon, UPS, Walmart, and Wayfair, among others. Amazon is by far the largest occupier in the region with more than 4 million square feet.

Distribution centers and similar facilities are good for the economy, including port business, according to Robert Peek, Director and General Manager of Business Development at JAXPORT. "The steady stream of retailers and e-commerce companies looking to open here and use the port helps us attract ocean carriers and build their volumes," Peek said.

A 2018 study by the Florida Seaport Transportation and Economic Development Council cited numerous opportunities to build on Northeast Florida's strengths to attract new DCs, especially those in the construction, wood products, manufacturing and printing sectors. This stands to complement strong interest among retailers looking for commercial space.

Vacancy in Northeast Florida is currently running lower than in other major markets including Orlando and Tampa. Rental rates are lower, too. Year-to-date leasing interest and new occupancy has already exceeded 2020 figures. There were tenants in the market for 6.7 million square feet in the Jacksonville area in the third quarter. Those statistics from Cushman & Wakefield reflect a hot market.

SURPRISING SAVINGS WITHIN FTZ NO. 64

Foreign Trade Zone (FTZ) No. 64, Florida's largest trade zone by square miles, spans across nine counties: Baker, Bradford, Clay, Columbia, Duval, Flagler, Nassau, Putnam and St. Johns.

JAXPORT's management of the FTZ is structured to alleviate the pain points of international e-commerce shipping by providing cost savings, reducing risks and increasing efficiencies.

An FTZ is a secure site located in the U.S., but considered to be outside for Customs purposes. Because shippers can clear cargo when it leaves the FTZ instead of when it arrives, there can be savings and cash flow benefits.

The zone can introduce tremendous value to shippers with the right combination of cargo types, duties and delivery schedules, among other factors.

Most of the 400 acres of activated FTZ space are located within warehousing and distribution facilities. FTZ No. 64

handles a wide variety of seaport cargo, from temperature-controlled food products and over-dimensional project cargo to dry consumer goods.

That total value of merchandise received in the zone in 2020 was \$2.2 billion, according to JAXPORT. There was one new usage-driven site in 2020 and major site expansions for two existing users. The port anticipates plans to grow offerings in trans-Pacific and trans-Atlantic services, as well as in the Puerto Rican trade, will result in more vessel traffic and more opportunities for the FTZ's expansion.

Through a system called the Alternative Site Framework, businesses can easily integrate their existing sites into the FTZ. Approvals are faster than ever; storage and distribution sites can be approved in 30 days or less, and manufacturing and processing plants within 120 days. There is a plethora of available industrial sites, unimproved or as-built, within FTZ No. 64.

E-COMMERCE FURTHER IGNITES MARKET

Many of the DCs choosing the region are e-commerce-based. Peek said it is now common for new e-commerce customers to evaluate potential FTZ benefits. "We are working with several distribution prospects now looking to activate within our Zone, as well as a new manufacturing operator who will be pursuing production authority," he said.

Aundra Wallace, President of economic development agency JAXUSA Partnership, said, "Overall, the region's quality of life, pro-business environment, access to skilled and young talent and available buildings and sites contribute to our prominence as an attractive business location."

From a distribution and fulfillment center perspective, "Our attributes

extend beyond that into two buckets: One, our logistics infrastructure includes the nexus of three interstates, two deep-water ports, three major railroads and an international airport system giving credibility to the moniker, America's Logistics Center. And two, Jacksonville's location as the westernmost city on the East Coast allows for same-day, direct access to 98 million consumers, which is more cost effective and lends itself to a shorter supply chain," said Wallace.

Luke Pope, Managing Director at global real estate services company Jones Lang LaSalle in Jacksonville, also emphasized Northeast Florida's business case for accessing consumers. He said, "Jacksonville led the nation in terms of professional in-migration in 2021. This surging population growth, in conjunction with proximity to a major port and

excellent highway infrastructure, makes Jacksonville a very attractive location for industrial users."

Pope said, "Jacksonville is the one location that allows trucks to get anywhere in the Southeast within an eight-hour drive time. We also provide excellent rail connectivity via CSX, Norfolk Southern and Florida East Coast Railway. Our transportation infrastructure combined with the congestion-free services provided by JAXPORT allow Jacksonville to offer supply chain solutions above and beyond other locations within the Southeast."

Jacob Horsley, Senior Director at industrial brokerage firm Cushman & Wakefield, said that the demographic shift toward online purchasing that the market is now experiencing was accelerated by a few years once the pandemic

took hold. E-commerce became an almost universal lifestyle choice. “As the next generation hits the workforce and makes major purchases, there will be even greater demand for online merchandise,” he said.

American households are already approaching or exceeding the one-package-per-day-per-family-of-four milestone, according to industry analysts.

Tyler Newman, also with Cushman & Wakefield, said that he is seeing a lot of what used to be mom and pop operations fast-tracked into 20,000- to 30,000-square-foot properties to satisfy demand stemming from online sales. “That is a prime reason why industrial spaces are filling up and the vacancy rate is falling. Some of these companies never even had to open up a storefront,” said Newman.

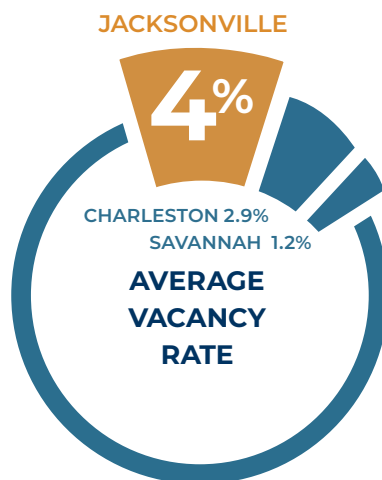
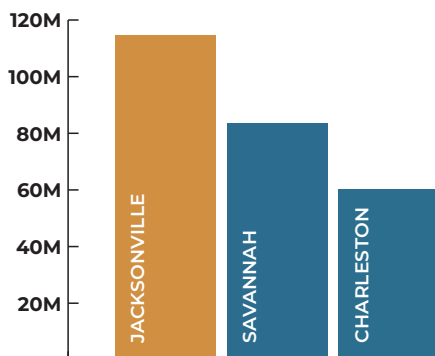
SPACE AVAILABLE BUT TIGHTENING

The level of recent investment in Northeast Florida is remarkable. Wallace said, “In the last two years, JAXUSA has been involved in the relocation or expansion announcements of 12 distribution centers ranging from third-party logistics companies, to household goods, meat products and groceries, auto parts and medical supplies/pharmaceuticals, as well as three separate Amazon facilities.” These projects are expected to generate more than 2,500 jobs and \$459.6 million in capital investment in the region.

Jacksonville has an industrial footprint that is constantly growing. Published market estimates range

JACKSONVILLE HAS THE MOST SPACE AMONG SOUTH ATLANTIC PORTS

MARKET TOTAL RENTABLE BUILDING AREA



ACCORDING TO REPORTS FROM NEWMARK AND COLLIERS, THE JACKSONVILLE AREA OFFERS MORE THAN 144 MILLION SQ FT OF INDUSTRIAL WAREHOUSING SPACE.

SOURCES: 2021 Q3 - CUSHMAN & WAKEFIELD, CBRE, COLLIERS INTERNATIONAL, JLL, NEWMARK

from 3.28 to almost 4 million square feet of industrial space under construction in the region. One of Jacksonville’s greatest assets is that it can still offer the large-scale footprints that are in such short supply in many hubs across the nation, although the inventory won’t last forever.

Pope said, “Existing buildings are becoming increasingly harder to find. Developers will continue to build speculative product as long as there is demand. The question is how long will the demand outpace the deliveries?”

He said that 2022 will more than likely be the tightest industrial market Jacksonville has seen in recent memory. “There are millions of square feet of speculative product in production but a majority will not deliver until 2023. However, we have excellent developer-controlled sites still available and will more than likely see an increase in BTS [build-to-suit] transactions while the market waits for more speculative product to deliver,” said Pope.

THE PATH FORWARD

Pope said that as Northeast Florida’s population continues to rise, the desire for industrial real estate will follow suit.

As long as rent and land pricing remain well below the other major population centers in Florida, and as long as the market continues to see million-square-foot speculative facilities breaking ground, the market will thrive.

“In the past, companies were forced to perform build-to-suit transactions in order to obtain a building of that size. Having existing product readily available in that size range is a huge step towards attracting larger users moving forward,” said Pope. □

DISTRIBUTION CENTERS TO THE RESCUE AS HOME RENOVATIONS INCREASE

With quarantines, remote work, and job changes, Americans are spending more time at home.

They are cooking more, updating appliances and fixtures, painting, landscaping, building home offices, and undertaking projects or hiring contractors to do home renovations of all sizes.

A recent study by Harvard University found that Americans spent nearly \$420 billion on their homes in 2020. That included DIY and contracted projects. While the U.S. economy shrank by 3.5 percent in 2020, spending on home improvements and repairs grew more than 3 percent.

Jacob Horsley, Senior Director at industrial brokerage firm Cushman & Wakefield, said the industrial market has noted the trend. He has seen recent interest in industrial space by appliance manufacturers, home furnishing companies and other home-renovation oriented business segments.

"Furniture companies and similar businesses that were looking for 200,000 to 300,000 square feet a few years ago are now looking at a million square feet, throughout the Southeast," said Horsley.

Properties of that size are few and far between, especially spec developments. But the Jacksonville region still has capacity available, and the price is right. Starting rent for properties of 50,000+ square feet in Northeast Florida ran approximately \$5.36 per square foot in 2020/2021. By comparison, rents on similar properties in Orlando started at \$6.10 and in Tampa at \$6.35, according to Cushman & Wakefield's Q3 2021 Jacksonville Industrial Market report.

There has been a clear shift in financial priorities for many Americans. They are investing in their households. The market has heated up, and is likely to remain hot for a while. In its July Kitchen & Bath Market Outlook update, the National Kitchen & Bath Association upgraded its 2021 industry sales projections to approximately \$171 billion, up by more than 21% versus 2020 spending and 8% higher than its estimate made earlier in the year.

Northeast Florida's easy access to massive consumer markets makes it a highly competitive location for the home renovation industry, its retailers and its distribution facilities.

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FLORIDA A CRITICAL LINK IN ENHANCING THE NATION'S SUPPLY CHAIN RESILIENCY

By Conrad Winter

As of the publication date of this magazine, the world's super computers have not yet developed the algorithm to solve the nationwide trucking and equipment shortages. No surprises there. It is a problem of unprecedented complexity. Human variables, geographic variables and a whole lot of other constantly shifting variables have a hand in determining how the capacity crunch manifests in any port, distribution center or grocery aisle.

Florida is a prime example of this, where the trucking-related supply chain delays affecting the rest of the country are hitting Northeast Florida to a lesser degree.

"When it comes to Florida, we're always ahead of the curve and trucking always delivers," said Florida Trucking Association President and CEO Alix Miller. "What has become clear throughout the pandemic is

that the trucking industry is nimble and has an established and open communication with state agencies and private companies to get things done. It doesn't take months or days to adapt. Trucking companies can look on a screen and figure out in minutes how to relocate drivers, shipments and trucks to provide what is needed."

NATIONWIDE CAPACITY CHALLENGES MUTED IN THE SOUTH ATLANTIC

The forces causing today's inland capacity crunch are familiar from Southern California to the South Atlantic. The source of many of the nation's bottlenecks is a combination of shortages in tractors, containers and chassis, according to Mike Wilson, Chief Executive Officer at Consolidated Chassis Management (CCM), which runs one of the country's largest chassis pools.

"With the volume surge that we've experienced, the entire supply chain system, whether it's terminals, ships, chassis, containers, trucks or warehouses, they're all over capacity," Wilson said. "The reality is that there's far more freight trying to move through the system than it was designed for."

The chain reaction that's resulted has led to delays that vary widely from coast to coast. One executive for a Jacksonville-based ocean carrier reported that customers are typically receiving pickups in two to four days compared to one to two days pre-pandemic—considerably less than drayage delays that are lasting weeks in some cases on the West Coast.

NIMBLE CHASSIS POOL SATISFIES DEMAND

The tip of the nationwide equipment shortage is the chassis shortfall. Chassis are the trailers used to move

ocean and intermodal containers in their many sizes.

“Typically, chassis come back in about five and a half days. In the recent surge, chassis haven't come back for 12 and a half days. So, there's more than twice as many chassis out on the street in the South Atlantic than there should be, basically because of the cargo surge,” Wilson explained. As a result, there's a backlog of containers waiting for chassis in order to move.

Chassis are in short supply on both coasts, but according to Wilson, East Coast ports like JAXPORT have had an easier time getting them throughout the pandemic. He said that even pre-COVID, the South Atlantic Consolidated Chassis Pool

(SACP), a cooperative network of chassis providers throughout the South Atlantic, was probably the best operating zone for chassis efficiency in the country.

The established network and lines of communication have provided ports and drayage providers in the South Atlantic with an advantage in getting the chassis they need. “The ports work in very tight collaboration with us,” Wilson said. “We have very good working relationships with the ports and we communicate with them on a daily basis. So we know what's going on. They know what's going on. We share insights.”

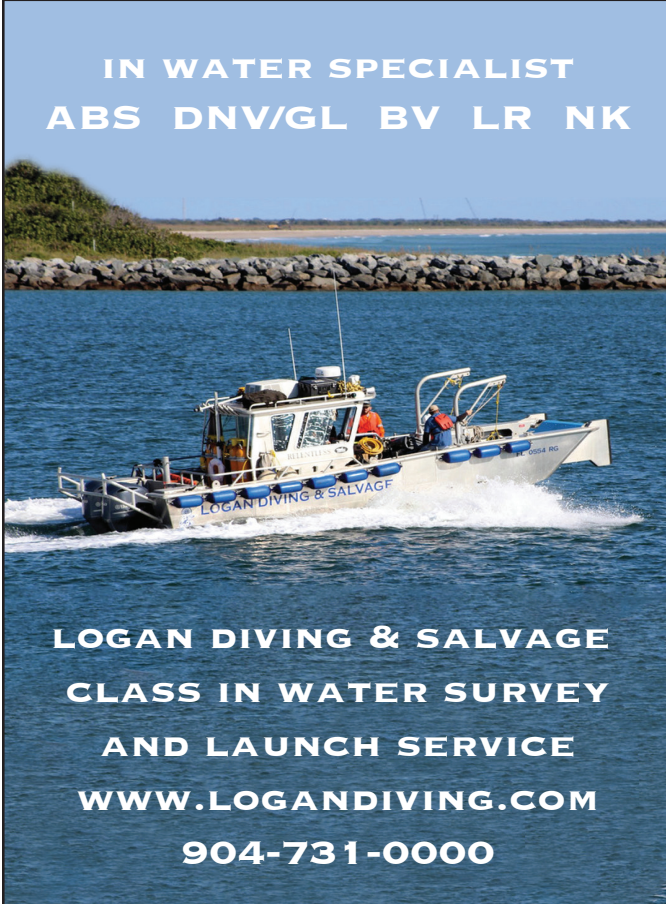
AVAILABLE LABOR PROVIDES ADDITIONAL ADVANTAGES

The high demand for drivers across

the U.S. is only one facet of an industrywide demand for workers, including warehouse staff and logistics professionals.

On all three of those fronts, Northeast Florida is taking big steps toward future-proofing its labor force. Vocational and academic programs supporting both commercial driver's license (CDL) preparation and transportation and logistics degrees are flourishing with the support of private and public support.

These investments are bolstered by Florida's growing population. Pre-COVID, 900 people a day were moving to the state, according to Miller. “People want to live in Florida. So hopefully that that brings in more workforce,” she said.



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INVESTMENTS IN TRAINING DRIVERS AND LOGISTICS EXPERTS BODES WELL

The State of Florida hopes to put more opportunities in the trades as well as trucking within reach for Florida's labor pool. Program development and state grants could hold the key to satisfying Northeast Florida's driver and general labor demands, and in doing so, provide a model for the nation.

Trade schools like J-Tech Institute in Jacksonville offer CDL training as well as a range of programs. Tommy Paul is a commercial truck driving instructor at J-Tech who has been teaching for over ten years. He is seeing new groups, including former office workers and more women, coming through the CDL program. He believes his class sizes will double in the near future.

Florida State College at Jacksonville (FSCJ) is set on preparing the next generation of transportation and logistics workers and leaders by offering a range of certificate and degree programs. FSCJ was



J-Tech Institute offers CDL training as well as a range of additional programs.

named one of the best online bachelor programs in supply chain management and is accredited by the Accreditation Council for Business Schools and Programs (ACBSP). According to FSCJ Professor Susan Amburgey, it is one of the only programs in the country with an in-classroom logistics lab providing hands-on experience in robotics, inventory management and material handling.

A CULTURE OF TRANSPORTATION AND LOGISTICS

As artificial intelligence searches for answers in solving America's supply chain challenges, the State of Florida puts its faith in the essential

truck drivers, warehouse workers and logistics professionals who move the goods.

Florida's logistics trade and trucking schools stress the importance of community as well as hard skills.

"I definitely tell them, and all the other instructors definitely tell them, that we appreciate them coming and appreciate them helping out this industry that we love so much, and that we've spent our whole lives in," Paul said.

If the pandemic's shortages taught us anything, it's how reliant we are on truck drivers. Driver appreciation is a regional tradition and central teaching in FSCJ's curriculum.

"One of the first things that I always tell my students, and I don't care if it's a purchasing class or an inventory class, is 'If you learn anything in my class, the one takeaway I want you to learn is to respect truck drivers,'" Amburgey said.

In the end, hard work and respect may be the variables that crack the code on solving today's capacity challenges. And if that is the case, Florida is poised to lead the way in strengthening America's supply chain. □



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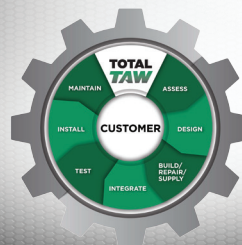
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Dog sculptures made by Kenyan artists using recycled flip-flop parts.

TURNING TRASH INTO TREASURE

Northeast Florida-based nonprofit Ocean Sole Africa Inc. “upcycles” (turning trash into something of value) old flip-flops that have washed up on beaches and waterways in Kenya into brightly-colored gifts and collectibles.

Native artists in Kenya convert the collected sandals into colorful blocks and hand-carve them into

sculptures and home décor. The eye-catching creations resemble everything from animals and fruits to even a car.

The finished items are shipped from Mombasa, Kenya to JAXPORT where they are sold and distributed throughout the U.S. and beyond from Ocean Sole’s warehouse and retail shop in the

coastal city of Ponte Vedra Beach, Florida, just outside of Jacksonville.

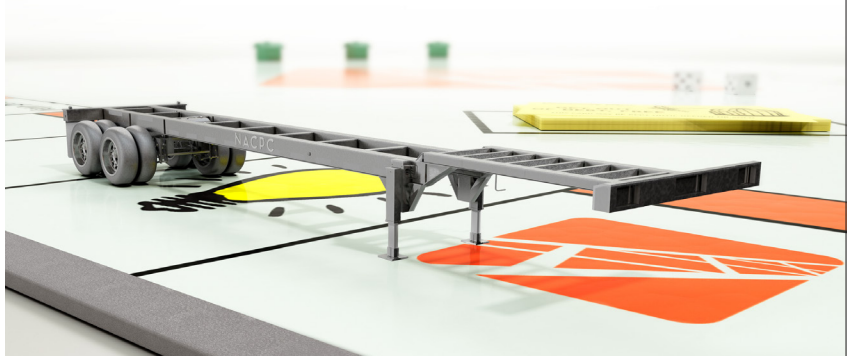
Ocean Sole said the efficiencies Northeast Florida’s transportation network offers international shippers attracted them to the region.

“The location and service of JAXPORT was instrumental in our decision to base ourselves in the 904



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Ocean Sole Africa CEO Erin Smith at the nonprofit's Northeast Florida warehouse.

[Jacksonville] area,” said Ocean Sole Africa CEO Erin Smith. “We continue to thrive with the support of the port making it easy for us to conduct business in the USA.”

Transforming the old flip-flops into art creates steady work for more than 100 Kenyans and impacts more

than 1000 people in the country. Funds from the product sales are invested back into the Kenyan artists, conservation groups, and the local community surrounding their factory outside of Nairobi, Kenya.

The artists’ inspiration for each piece stems from customer requests as

well as the nonprofit’s desire to bring awareness to endangered species. The most popular items to date are the elephant, giraffe and sea turtle.

The art brings smiles to the faces of customers and leaves a lasting impact on the quality of life for the people in Kenya. □

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Eric Ebeling,
ARC CEO

American Roll-On Roll-Off Carrier (ARC), a leading U.S.-flag carrier moving rolling cargo and other equipment for the U.S. government and its agencies, is one of the latest global companies to take advantage of Jacksonville's business benefits.

In July of 2021, ARC relocated its corporate headquarters from New Jersey to St. Johns County, just south of Jacksonville.

"Prior to moving our headquarters, we conducted an extensive study of locations to see where the most

ideal spot for us would be to best serve our customers and business partners as well as support our employees," said ARC CEO Eric Ebeling. "We concluded that



Northeast Florida offers the right business-friendly climate, a great quality of life, and is close to JAXPORT where our ships call throughout the year.”

The Jacksonville metro area is home to more than 100 national or

divisional headquarters, according to JAXUSA Partnership.

ARC provides global logistics and shipping services to the U.S. Government. ARC and its U.S. affiliates own and manage the largest U.S.-flag roll-on roll-off (Ro-Ro) fleet.

This includes providing American-owned, managed, and crewed Ro-Ro shipping and multimodal logistics services committed to the requirements of the Department of Defense, other U.S. Government departments and agencies, and commercial customers.



The global shipping company's fleet of ships call JAXPORT to move military cargo, including heavy vehicles and helicopters. JAXPORT is one of 17 U.S. Strategic Seaports on-call to move military cargo for national defense, foreign humanitarian assistance and disaster relief, and the only port in Florida with this designation.

“Our team is excited to be in Florida and we’re becoming acclimated to the growing community of greater Jacksonville and St. Johns County,” Ebeling said. □



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Whether its maneuvering from their pilot boat to a large cargo ship or leaping onto a ship's rope ladder during rough seas, harbor pilots are trained to expect the unexpected.

As expert guides of the shipping channel, they possess intricate knowledge of each waterway and local conditions to help steer and direct vessels to berth.

"Last year a record 1.4 million containers and over 600,000 vehicles moved through JAXPORT—a result of the expert navigation by the Pilots who bring the ships to and from our berths, and help keep our berths congestion-free which they remain today," said JAXPORT Chief Financial Officer and Chief of Staff Beth McCague.

In recognition of their work keeping cargo moving through the Ports of Jacksonville and Fernandina throughout the pandemic, the U.S. Coast Guard Sector Jacksonville presented the St. Johns Bar Pilots with the U.S. Coast Guard Meritorious Public Service Award in 2021.

"This award recognizes the St. Johns Bar Pilots Association for the incredible work and leadership they provided over the last 18 months," said Capt. Mark Vlaun, U.S. Coast Guard Sector Jacksonville Captain of the Port. "They were able to move almost 3,800 vessels in and out of

this port and did it in a way that was safe, secure and healthy."

"We have great partners here at the Port of Jacksonville," said Capt. Nathan Cook, President of the St. Johns Bar Pilot Association. "There's no challenge we can't overcome with the great teamwork we have here."

The St. Johns Bar Pilot Association is comprised of more than a dozen licensed mariners who have demonstrated exceptional qualities of skill, dedication and commitment to service to the maritime industry. □



U.S. Coast Guard Sector Jacksonville Captain of the Port Mark Vlaun (left) and St. Johns Bar Pilot Association President Captain Nathan Cook.

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