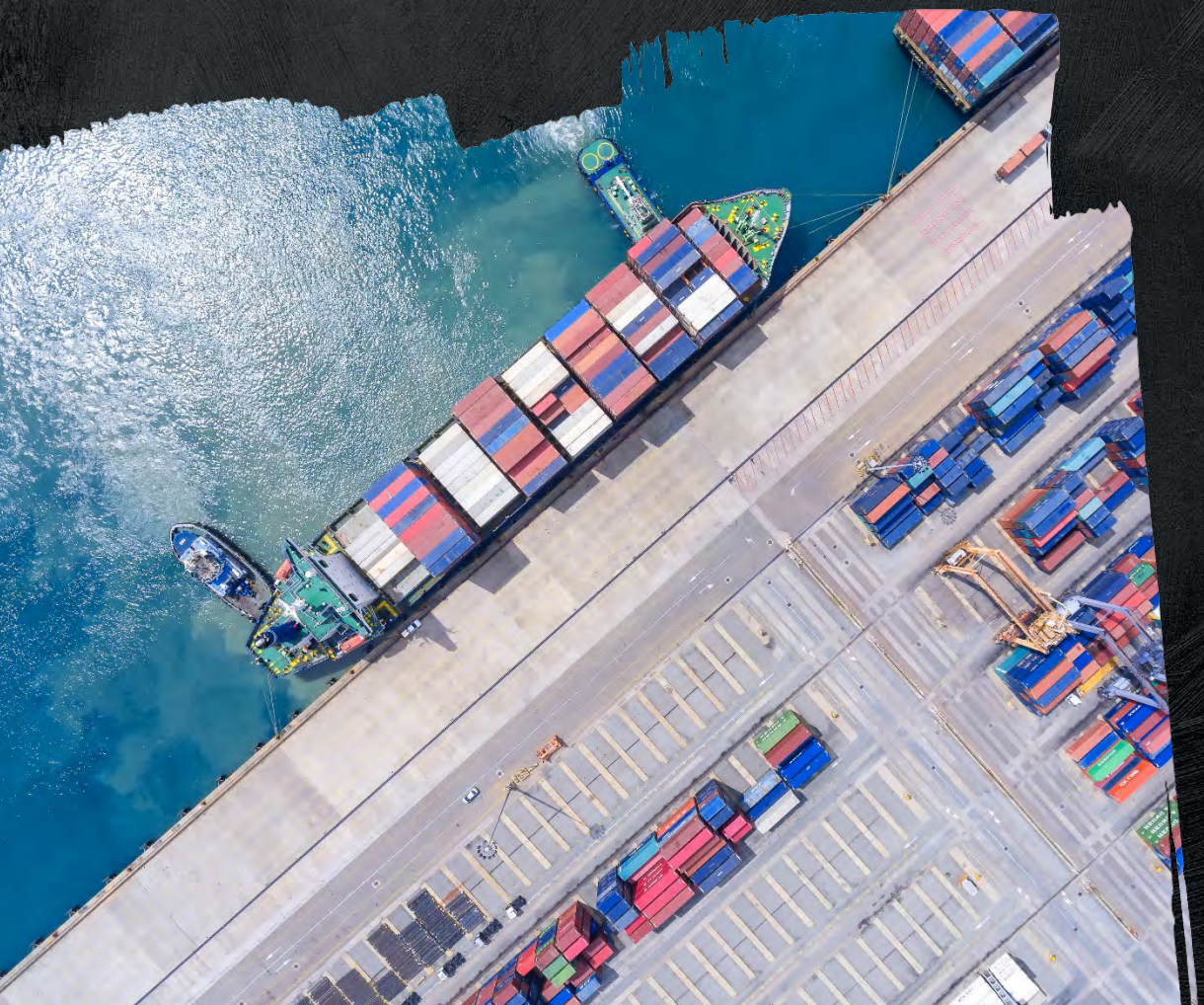
JLL

Seaport

North America | 2017

Port, Airport & Global Infrastructure (PAGI)

JLL Research



Contents

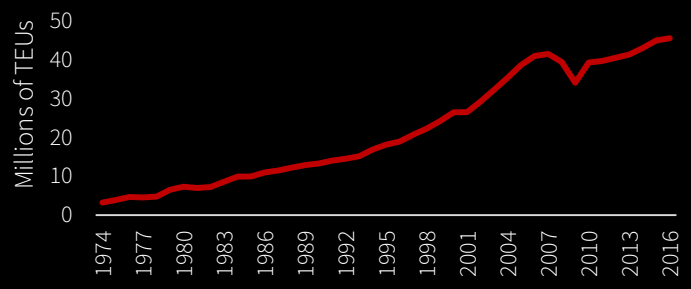
The JLL North America Seaport Outlook provides a distinctive analysis of industrial space that is seaport-centric in gateway real estate markets. Observing the influence of global economic drivers—including trade and cargo flows, socio-economic and political factors, as well as port capacity and infrastructure investment—provides both a macro overview of current trends impacting the domestic sector and detailed information on major seaports. This report explores industrial property fundamentals in a 15-mile radius from seaports, given a minimum building size of 50,000 square feet.

Hello

Thank you for your interest in the JLL Ports Airports and Global Infrastructure (PAGI) 2017 Seaport report. This report is the product of JLL Research and features exclusive insight from port logistics market experts in the United States. As in previous editions, this report is gateway-centric. The focus is not on ports but on the nexus of infrastructure and logistics services that support the flow of freight. The gateway-centric orientation is reflected throughout the analysis and observations sections that precede the individual port gateway synopses making up the report's latter half.

This report covers 14 port gateways in the United States and Canada. Between 1974 and 2016, these ports' container volumes increased from 3.2 million TEUs to 45.6 million TEUs, an average annual growth rate of 6.5 percent. During the residential real estate boom of 2001 to 2006, which coincided with China's formal entry into the World Trade Organization, container volumes grew significantly faster—about 9.1 percent per year. Since 2010, volumes have grown at a 4.9 percent average annual rate, in line with the significantly slower economic growth tailing the Great Recession. From 2010 to 2014, container volume growth was mostly driven by export volumes, and since then by import volumes, coinciding with U.S. employment returning to a midcycle level of about 5 percent.

Total container volumes (in TEUs) in our 2017 PAGI Seaport markets



While the Panama Canal is now complete, offering the third lane and shorter travel times, challenges remain. Since not all the East Coast ports are prepared to receive the Neopanamax vessels, there could be a possible holdback from the shipping companies to utilize the Canal fully. Until all these infrastructure improvement construction projects are complete and other ports dredge their channels, the full capacity of the Canal will not be realized in the near term.

Slower container volume growth in North America has coincided with slower North American and global economic growth. As the European economy continues to recover, along with the U.S. economy continuing to expand at a 2–2.5 percent pace, developed economy imports have picked up. This is particularly evident in the performance of Asian ports, which are export gateways for consumer and industrial goods sent to both Europe and North America. Improving exports in Asia has rekindled exports of raw materials from South America, Australia, Africa and Canada. Given that central banks in most economies are more concerned about economic growth risk than inflation risk, continued moderate global economic growth with low inflation will likely continue for the foreseeable future. This bodes well for container volume growth at the ports highlighted in this report.

While imported container volumes have recovered, we've witnessed an uptick in demand for the industrial real estate needed to support their consolidation and distribution throughout the United States .JLL Research shows that as vacancy rates in all port gateways are near historically low levels, current market conditions are more favorable to the landlords.

Some of the industrial real estate demand comes from importers shifting their logistics operations to increase the amount of transloading or cross-docking they conduct near ports. Cross-dock services and transload services both include handling the product and delivery to multiple destinations on different trucks or containers than the inbound shipment. The international containers shipped on vessels are 20 or 40 feet long while domestic containers are 53 feet long. Repackaging the contents of three 40-foot international containers into two 53-foot domestic containers can reduce the cost of sending merchandise to regional warehouses or stores across the country.

Based on conversations with importers, there seem to be two main reasons for increasing the amount of transloading and cross-docking near ports. The first is that e-commerce is gaining share of retail sales. Competition in e-commerce sales is based on delivery charges and order-to-delivery time. In order to compete, retailers need to hold more inventory in more locations. It makes sense to transload near the port—it speeds up strategic stock replenishment around the country.

The second reason for increased demand for transloading facilities is the advent of larger vessels. Ever since the first container vessel "a converted bulk ship" set sail, ocean carriers have been designing and deploying larger and larger ships. These ships have expanded in capacity from less than 2,000 TEUs per vessel in the 1950s to close to 22,000 TEUs per vessel currently.

U.S. ports have been upgrading navigation channels and waterside infrastructure to service today's vessels. However, inland road and rail infrastructure capacity has not increased in tandem, resulting in congestion. This may not be improved any time soon. Therefore, it makes sense to conduct more logistics operations closer to ports. This is likely to be further enhanced by autonomous vehicles being deployed to move cargo around port gateways. These vehicles can operate during night hours but are likely to be electric to reduce emissions and noise pollution. Until significantly better batteries are available, autonomous electric vehicles to dray heavy freight will have a limited range.

Against the positive trends we are seeing in the port gateways, concerns about factors that would slow or reverse globalization of the world economy abound. In addition to political threats such as efforts to renegotiate trade agreements, there are technological threats including 3D printing, which could conceivably reduce international trade of manufactured goods. Automation of production has been ongoing since the beginning of the Industrial Revolution and is likely to complement manufactured goods trade rather than replace it for the foreseeable future.

It makes sense to review and, if necessary, renegotiate trade agreements. Many of them were developed decades ago when the United States was a different economy in many respects, both demographically and technologically. Trade agreements need to support the 21st- century U.S. economy and reflect the repurposing of U.S. infrastructure, which in many cases was originally developed over a century ago. In particular, it would help the United States if trade agreements expanded to free agricultural, high-end capital goods and energy/petrochemical exports from the barriers imposed by many countries around the world. These are sectors in which the United States has a comparative and often competitive advantage. Growing exports would reduce the U.S. trade deficit and increase employment opportunities, which would therefore increase tax revenues and reduce the public-sector budget deficits.

It is worth keeping a close eye on exports. With the U.S. dollar beginning to weaken as the rest of the world economy continues to recover, and with the potential for the United States to invest in infrastructure that would help exports, real estate investors should include this in their investment strategies. Along those lines, a region with high potential is the U.S. Gulf Coast and Southeast, as discussed on pages seven and eight.

– Dr. Walter Kemmsies

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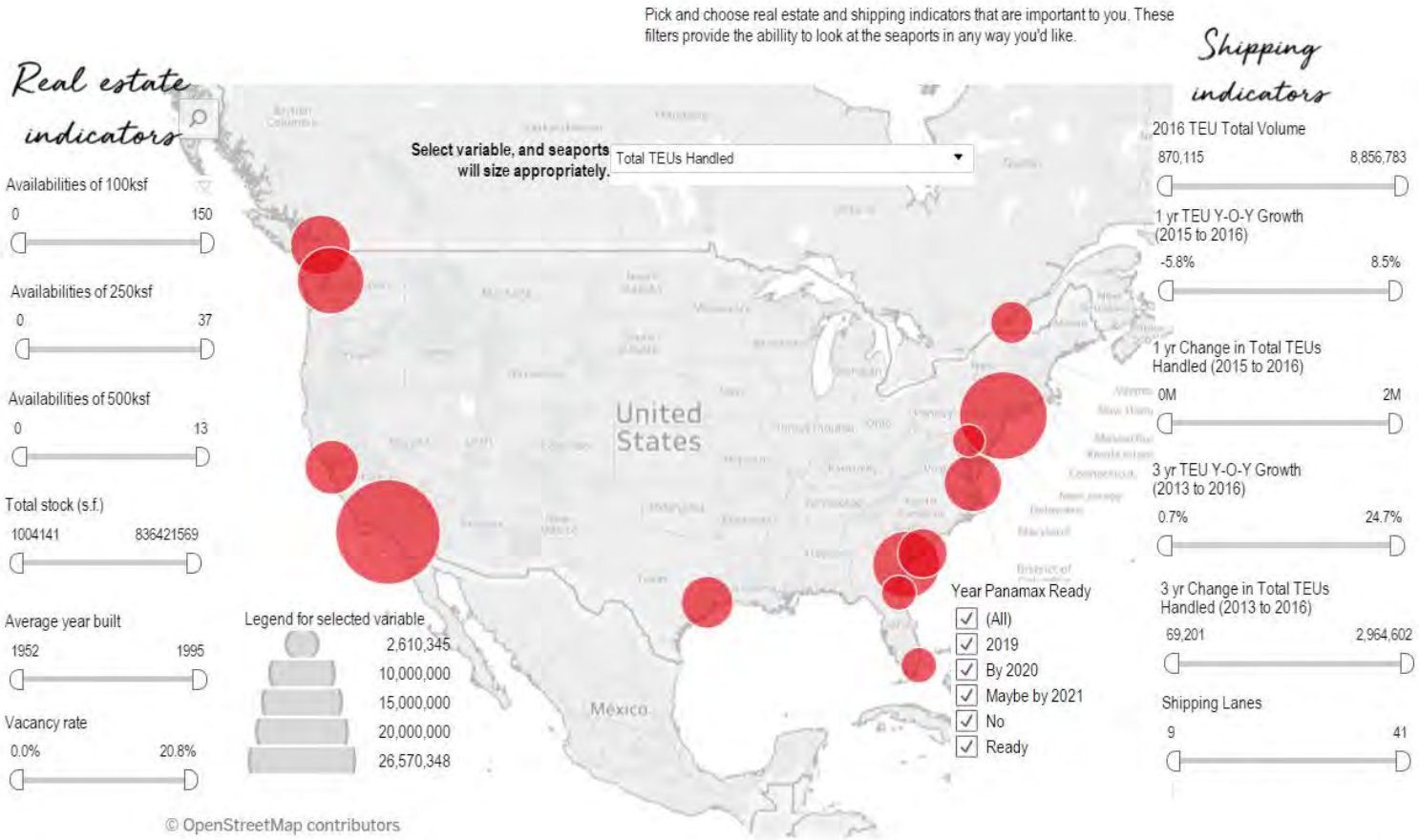
PAGI *dashboard*

A personalized view. Expansive filtering options enable you to focus on what's important.



Click here to access the new JLL PAGI Seaport Report 2017 dashboard.

U.S. ports are complex operations, impacted by a seemingly unending variety of factors. And most shipping requirements are dramatically different, from industry to industry, region to region and even port to port. To get a personalized view, we have collected and combined a huge number of data points that impact ports, both real estate indicators and shipping indicators. We put all of these data points into an interactive dashboard and set up customized filtering options for you and your needs. Do you need available space of at least 500,000 s.f.? You can filter for that. Do you want to look at ports with at least 20 shipping lanes? You can filter for that, too. Do you want to look at three-year total change in TEUs handled by each port? Guess what. You can do that.

The first tab of the dashboard is your home base, with all indicators, real estate and shipping, in one spot. The second tab allows you to compare a specific real estate indicator against another specific shipping indicator. The other tabs explore the various data points in more depth, including availabilities, current shipping and historic TEUs. Pick and filter the indicators to create your story. Analyze the ports in the best way possible for you.

Top *five* trends to watch

1 *Gulf Coast ports on the winners list*

West Coast ports losing share to East and Gulf Coast ports. Has the opening of the expanded Panama Canal further shifted these TEU volumes?

2 *Mergers & alliances*

M&A lead to uncertainty and a changing landscape in the shipping industry.

3 *Bigger ships*

Ships ahoy! Larger ships calling on U.S. ports, passing through the new Panama Canal.

4 *Autonomous trucking*

Next-day deliveries and autonomous vehicles to take trucking industry to new heights.

5 *Rail*

Rail needs to be nimble as competition from other transportation modes intensifies.

1 Trade wars: Gulf Coast on the *winners* list

Gulf Coast ports show an increase in TEU volumes, but this is a fraction of the U.S. overall trade.

The decline in oil prices has had a reverse effect on the downstream sector, fueling a boom in the petrochemical sector. In recent years, the refining and processing of oil and gas into chemicals, plastics and other products has helped increase port volumes and industrial real estate demand along the Gulf Coast.

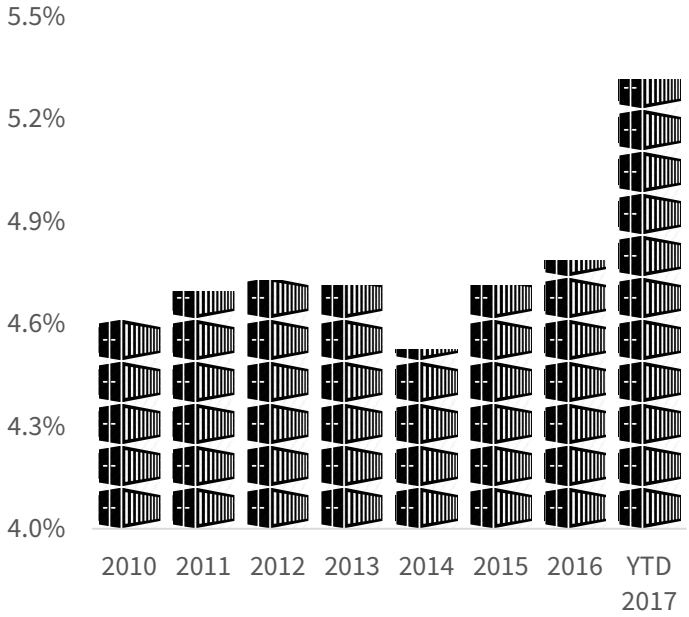
In Port Houston specifically its TEU volumes as a percentage of the total U.S. TEU volumes increased from 4.6 percent in 2010 to 5.2 percent in early 2017. Despite the continued weakness in the energy sector, the overall Houston industrial market continues to be strong. The market has been averaging 2.3 million square feet of total net absorption over the past 10 years. Comparing availability of industrial real estate across all PAGI markets, Houston showed the largest decline in year-over-year industrial real estate availability—a drop of 6.3 percent. Overall asking rents in the market are up by 36.5 percent since 2010, making it the second highest rent growth market after Oakland, where rents increased by 39.4 percent.

Locally, strong population growth, expanding distribution networks and sustained downstream demand are propelling a new era for Houston's industrial market. Capitalizing on this petrochemical boom, production plants are expanding along the Houston Ship Channel. Katoen Natie is currently completing construction of a 1.4 million-square-foot plastics packaging and distribution facility.

At Port Houston, an estimated 250,000 TEUs in new exports will be created by *2019* as newly delivered petrochemical projects ramp up production.

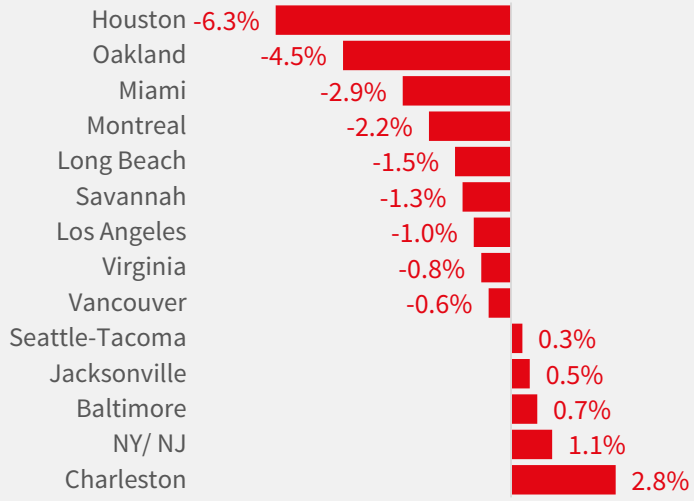
Winners, at least in the short term will be the Gulf Coast markets in the downstream sector, as they benefit the most from the upswing in petrochemical investment. We anticipate Panama Canal to benefit the Gulf Coast ports in the near term more than the East Coast ports, to the detriment of West Coast ports.

Houston TEU volume as % of total U.S. TEU volume



Source: JLL Research and individual seaports

% Change in real estate availability 2016 vs. 2015



Source: JLL Research

2 *Mergers and alliances lead to uncertainty and a changing landscape in the shipping industry*

As of April 1, 2017, the industry shifted moving from the previous four shipping alliances to three leading alliances. Combined, these alliances have affected nearly 90.0 percent of the global trade routes. These alliances help carriers stay competitive, reduce costs and cut overcapacity by sharing vessels or reducing multiple ships on the same route, thereby benefiting from economies of scale.

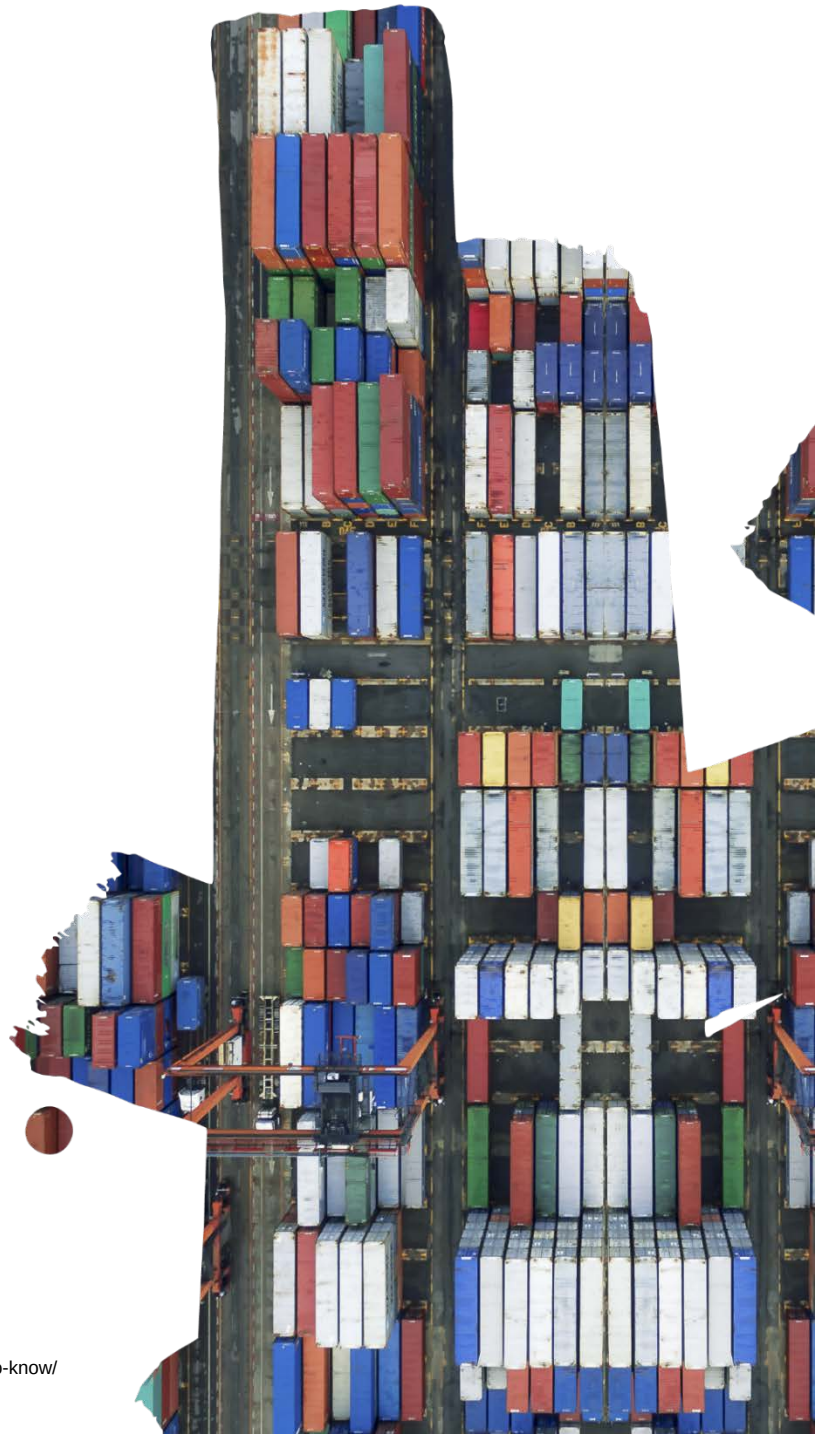
The new trio, explained below, represents 77.0 percent of container capacity globally and 96.0 percent of East-West trade.[1]

1. The 2M Alliance includes Maersk and MSC and currently controls nearly a third of the container capacity globally.
2. In opposition to the 2M dominance, the "Ocean" Alliance was created by bringing together CMA CGM, China COSCO Holdings, Evergreen and OOCL. The Ocean Alliance represents 26.0 percent of container capacity globally, with 41.3 percent of the trans-Pacific trade lane.
3. The last alliance is the "THE" Alliance consisting of Hapag-Lloyd, K Line, MOL, NYK and Yang Ming. Coming in at the smallest amount of control, THE Alliance holds 16.0 percent of the container capacity globally.[2]

Similar to the alliance transition, multiple major players in the industry have experienced mergers, acquisitions and bankruptcies in the last year—causing disruption to services for clients. Some prominent examples include: Hapag-Lloyd merged with UASC, China COSCO Holdings Co launched, CMA CGM purchased APL, Maersk announced plans to acquire Hamburg Sud, Hanjin filed bankruptcy and Japan's top three lines (K Line, MOL and NYK) plan to join. In the coming months, with multiple mergers and acquisitions occurring, the alliances' control will shift, and vessel sharing will reorganize travel routes.

From an industrial tenant's perspective, in the short term these alliances bring uncertainty and disruption of services. In the longer run though these alliances could benefit tenants, as the mergers may bring about a broader set of services offered by the shipping companies.

"In the latest wave of mergers, a deal between Cosco Shipping Holdings and OOCL will make them the world's third-largest container liner."

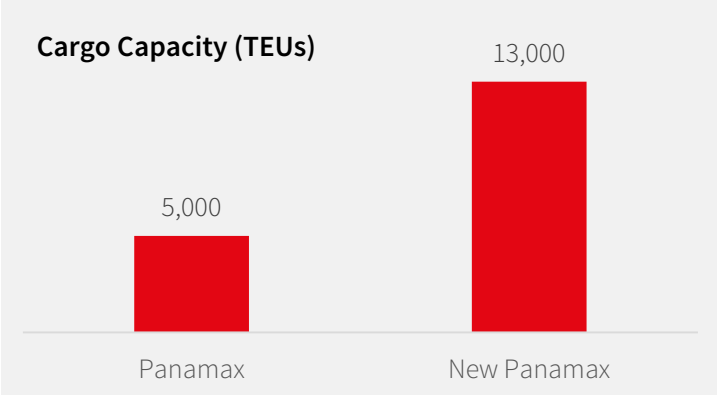


[1] http://www.icontainers.com/us/2017/03/21/new-shipping-alliances-what-you-need-to-know/
[2] https://www.flexport.com/blog/what-are-ocean-alliances/

3 *Ships ahoy! Larger ships calling on U.S. ports, passing through the new Panama Canal*

As larger vessels call at the U.S. ports, additional funds are needed on the "connectors" (port infrastructure) to move cargo profitably.

The ocean freight industry has undergone multiple changes and transitions in 2016. Ocean carriers have been planning on having fewer ships in the water by progressing to larger sized ships instead. In advance of the opening of the Panama Canal, ocean carriers began ordering larger vessels and deploying them across all cargo types. To accommodate these larger vessels, U.S. ports have led efforts to dredge channels, provide deeper berths and remove any air draft restrictions—like the raising of the Bayonne Bridge in New York and the Gerald Desmond Bridge in Long Beach. However, given that the United States has over two dozen prominent ports, it wasn't until earlier this year that most ports were ready to handle these bigger ships. Going forward, with larger vessels calling on ports, shipping liners are likely to reduce the number of port calls.



	Panamax	New Panamax
Length	965 ft	1,200 ft
Width	106 ft	160.7 ft
Draught	41.2 ft	49.9 ft

**Maximum dimensions based on current Panama Canal locks*
Source: http://maritime-connector.com/wiki/panamax/

4 *Next-day deliveries and autonomous vehicles to take trucking industry to new heights*

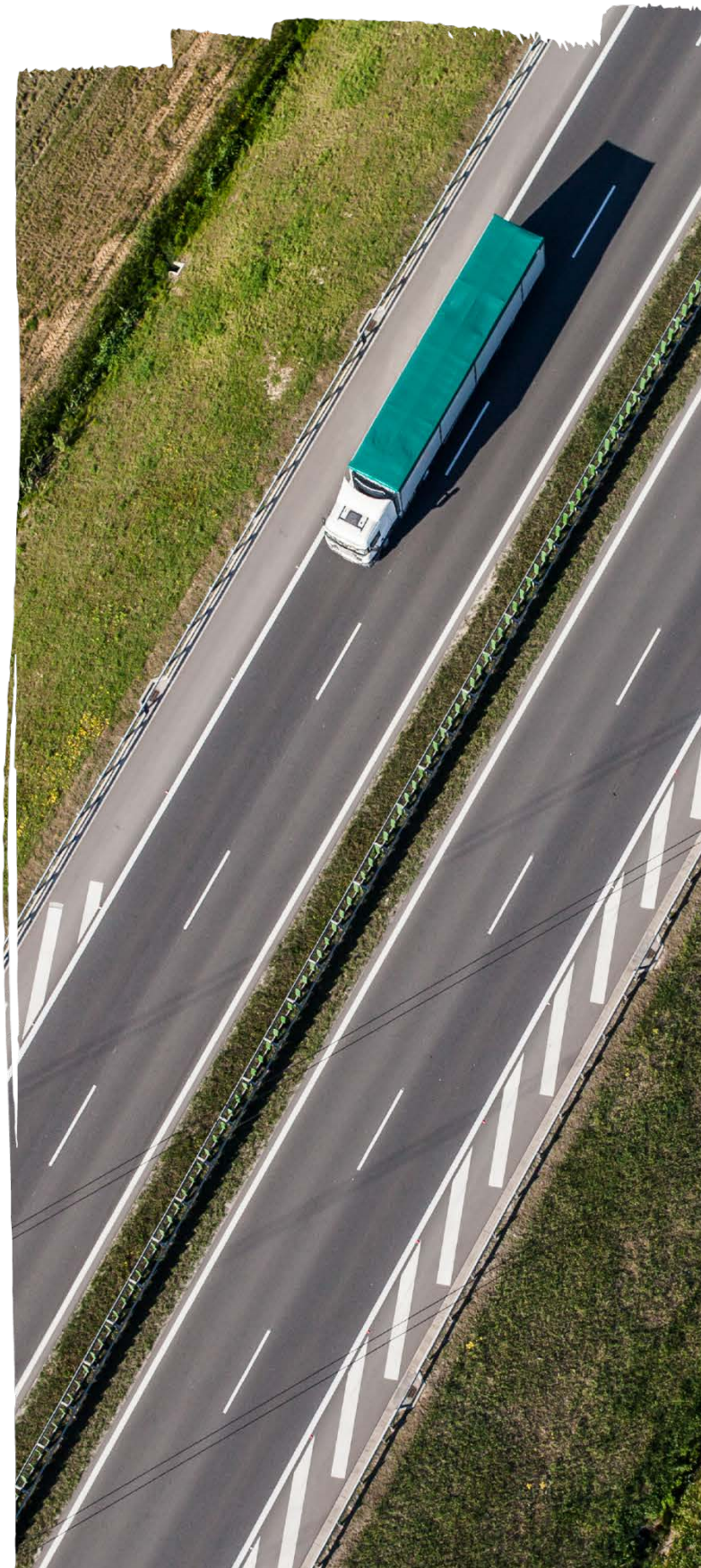
Today's distribution network needs more levels of connectivity within the supply chain complex as companies try to meet customer service demands. No longer is a single mega-site distribution center feasible as companies are transitioning to smaller-sized facilities to be closer to consumers. Urbanization is driving e-commerce business, and dependence on trucking to meet these needs is critical.

In the current technologically advanced and competitive world, the trucking industry is seeing a shift to utilizing technology to make the movement and tracking of cargo more efficient. One way that technology is transforming the industry is through the creation and implementation of autonomous trucks. In 2016, Uber's Otto division launched its self-driving truck. Even though this allows the truck to be driver-free, the truck is mainly for the highway system where the truck does not have to deal with pedestrians and four-way stops. Since the truck can be driver-free, these trucks will not be restricted by the current hours-of-service rule that limits the hours a driver can be on the road. Multiple Silicon Valley technology companies are in the process of creating similar self-driving trucks.

Labor shortage is a growing concern, not just for the warehousing sector but in the related trucking and port sectors.

With a majority of drivers nearing their retirement age, and limited new entrants in this sector, truck driver shortages remain a concern. New trends include the arrival of Uber Freight: through this, drivers have the freedom to choose when and how long they want to drive. Innovative solutions like these might provide temporary relief to the trucking sector, but for how long?

The trucking industry is also experiencing high amounts of congestion on the roads. With an increase of congestion, delivery times have increased, which ultimately increases operating costs. This provides an opportunity for other intermodal sectors like rail to become a new growth catalyst to transfer the burden of some of this traffic to other modes of transportation. There is an increase in partnerships between rail and trucking companies since rail movements involve dray at both ends.

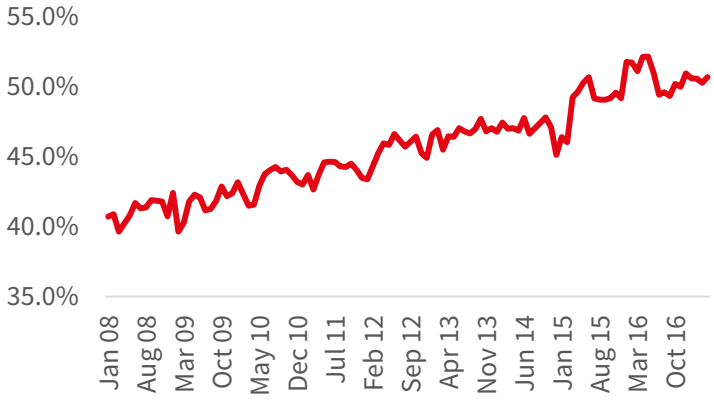


5 *Rail needs to be nimble as competition from other transportation modes intensifies*

The rail industry is expected to grow and revenues to rise. Because rail is seen as a less expensive alternative to trucking, shippers look to rail to carry large amounts of cargo quickly. Due to the large cargo volumes entering the United States via the mega-ships, rail infrastructure must be able to operate efficiently, keeping profitability numbers high. To meet this expected increase in demand from the mega-ships, ports are investing in infrastructure improvements. For example, the Port of Baltimore is hoping to raise the Howard Street Tunnel to allow double-stacked trains to pass through versus the current single-stacked train. These double-stacked trains can potentially drastically increase cargo capacity and efficiency.

Coal transportation is no longer bread-and-butter for rail companies. They are diversifying by moving away from the traditional bulky cargo to be more nimble. Railcar volumes have been recovering since the trough levels were at the worst point of the 2007–2009 recession, led by intermodal volumes—trailers and containers. Most types of freight hauled by rail, such as agricultural commodities, industrial commodities and vehicles, have grown very slowly in the last 10 years. Coal, which used to represent about 50.0 percent of total rail volumes, has declined significantly as the biggest user. Electric power generation companies have been switching to natural gas as its cost declined significantly due to technological advances in hydraulic fracturing. The bright spot for railroads in the last 10 years has been intermodal volumes, which now account for slightly over half of all railcar volumes, compared to 40.0 percent 10 years ago.

Intermodal's share of total railcar loads



Seaport real estate trends

The game of ports: West vs. East

Even before the completion of the Panama Canal expansion, West Coast ports were losing share to East and Gulf Coast ports. Has the opening of the expanded Panama Canal further shifted these TEU volumes?

In 2016, of the 14 ports tracked in JLL's PAGI report, nearly 50.0 percent reported record highs in annual TEU volumes. Seattle-Tacoma, Long Beach and Montreal are the only ports yet to witness the peaks seen in 2007–2008. Comparing TEU volumes from 2013, West Coast ports have shown the slowest growth rate in the United States with Long Beach, Seattle-Tacoma, Vancouver and Oakland showing growth rates under 5.0 percent. On the contrary, the Southeastern and Mid-Atlantic ports all grew by nearly 20.0 percent, growth attributed to opening of the expanded Panama Canal and increase in trade with Asia.

Over the past 10 years, the gap between each coast's shares of total U.S. TEU volumes has been declining.

As the landscape of the global shipping industry moves with bankruptcies, mergers and alliances, more supply chain routes are expected to move to the East and Gulf Coast ports. Additionally, with larger vessels now calling on ports, the frequency of port calls will likely drop.

While competition among ports remains fierce, the trans-Pacific trade lane remains the largest in the United States by overall volume. In 2016, West Coast ports handled 53.8 percent of total U.S. TEUs, a larger share of overall volumes. Of this, nearly 73.3 percent is from California alone—from the ports of Oakland, Los Angeles and Long Beach. Recent years have been stormy for the California ports with factors like labor strikes and the opening of the expanded Panama Canal, but from a logistics perspective, the rise of e-commerce and logistics companies has not shown any signs of a slowdown. Markets with the least vacant industrial space continue to be the California markets of Los Angeles, East Bay and Orange County, all reporting a vacancy of under 2.0 percent.

Of West Coast's total TEU volume, California handles

73.3%

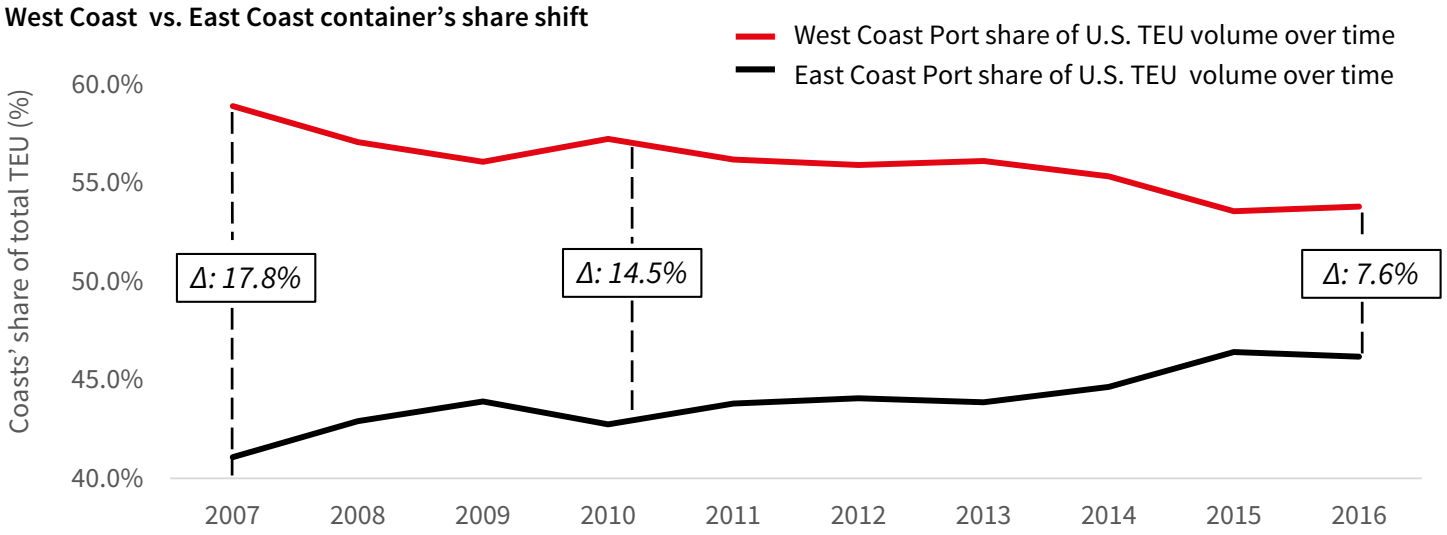
Of North America's total TEU volume, West Coast's share is

53.8%

Total U.S. TEUs in 2016 is

45.6 million

West Coast vs. East Coast container's share shift



West Coast Ports include: Long Beach, Los Angeles, Oakland, Seattle-Tacoma and Vancouver

East Coast Ports include: Baltimore, Charleston, Houston, Jacksonville, Miami, New York/New Jersey, Savannah, Virginia and Montreal

Source: JLL Research and individual seaports

Inside industrial real estate market's boom

Real estate markets strong across the United States, occupancy levels are over 90.0 percent in all markets.

So far in 2017, port-centric submarkets across all cities have seen robust growth and increasing industrial real estate occupancy levels. The majority of U.S. containerized trade is still handled in the "four corners" of the country by the Ports of New York/New Jersey, LA–Long Beach, Savannah and Seattle-Tacoma. Over the last two years, East Coast ports of New York/New Jersey and Jacksonville and the West Coast ports of Oakland and Long Beach have seen the largest decline in vacancy rates, over 2.0 percent. Ports of LA, Long Beach and Seattle-Tacoma have the highest occupancy rates as compared to other ports. But that's not all; these tight real estate markets are also commanding the highest rents for warehouse and distribution spaces, some inching toward $10.00 per square foot, triple net.

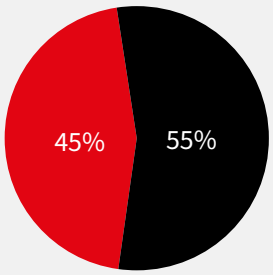
In JLL PAGI markets, nearly 25.4 million square feet is currently under construction. Of this, nearly 65.0 percent is on the U.S. East and Gulf Coast ports. Compared to 2015, the construction activity levels have doubled, showing an increase in demand for warehouse and distribution space.

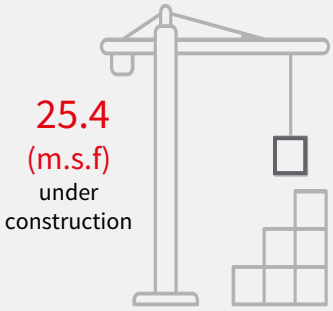
However, despite this increase in construction activity, comparing market sizes from 2015, we have seen a minimal increase in the overall real estate footprint of the port submarkets. This obviously comes as no surprise. To accommodate for functional real estate some of the older buildings are being torn down by the port authorities. As an example, the New York/New Jersey Port Authority has significantly reduced the number of on-site buildings to create more space for on-dock container storage, coming from the bigger vessels. In recent years, the Port Authority has demolished more than 2.9 million square feet, representing nearly 3.0 percent of the port submarket total inventory.

East Coast has a slight upper hand in immediate market size

West Coast Ports include: Long Beach, Los Angeles, Oakland, Seattle-Tacoma and Vancouver

East Coast Ports include: Baltimore, Charleston, Houston, Jacksonville, Miami, New York/New Jersey, Savannah, Virginia and Montreal

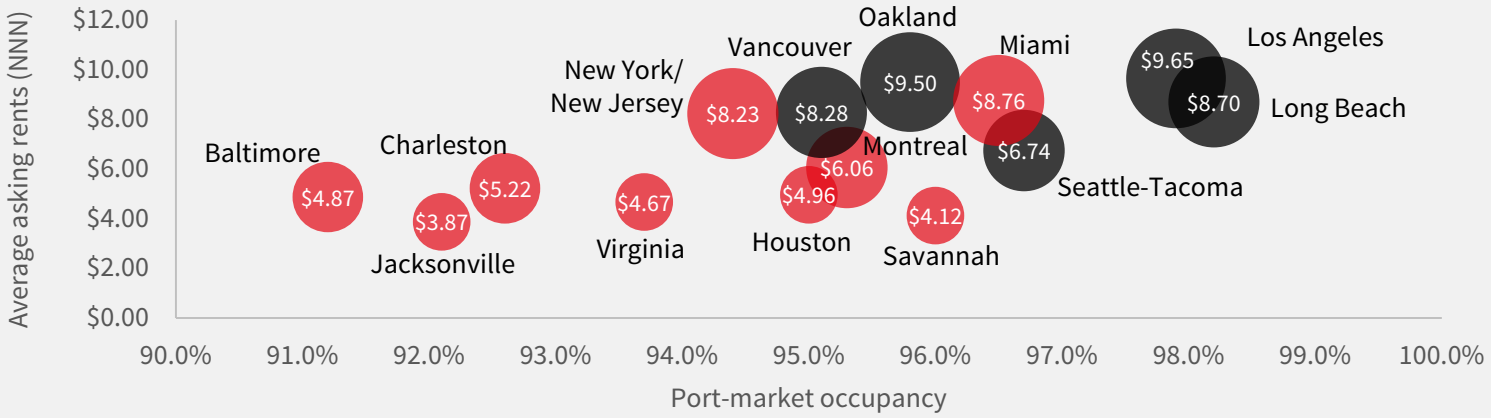




2x amount of U.S. construction in 2016 than in 2015

65% of total U.S. construction is in the East and Gulf Coast

Average asking rents (NNN) vs. port-market occupancy



Source: JLL Research and individual seaports

A closer look at the "first mile" near the ports

A closer look at the "first mile" —and the urgent need for infrastructure improvements to support cargo coming from mega-ships.

With the Panama Canal expansion now operational for more than a year and the U.S. ports becoming equipped to handle mega-ships, there is an influx of trucks used when the mega-ships arrive at the port. This sudden increase in cargo from one vessel is leading to congestion around ports. There is added pressure on these big ocean liners to load and unload cargo as quickly as possible at each port to remain profitable.

Some ports are investing in infrastructure improvements but still have hurdles to overcome.

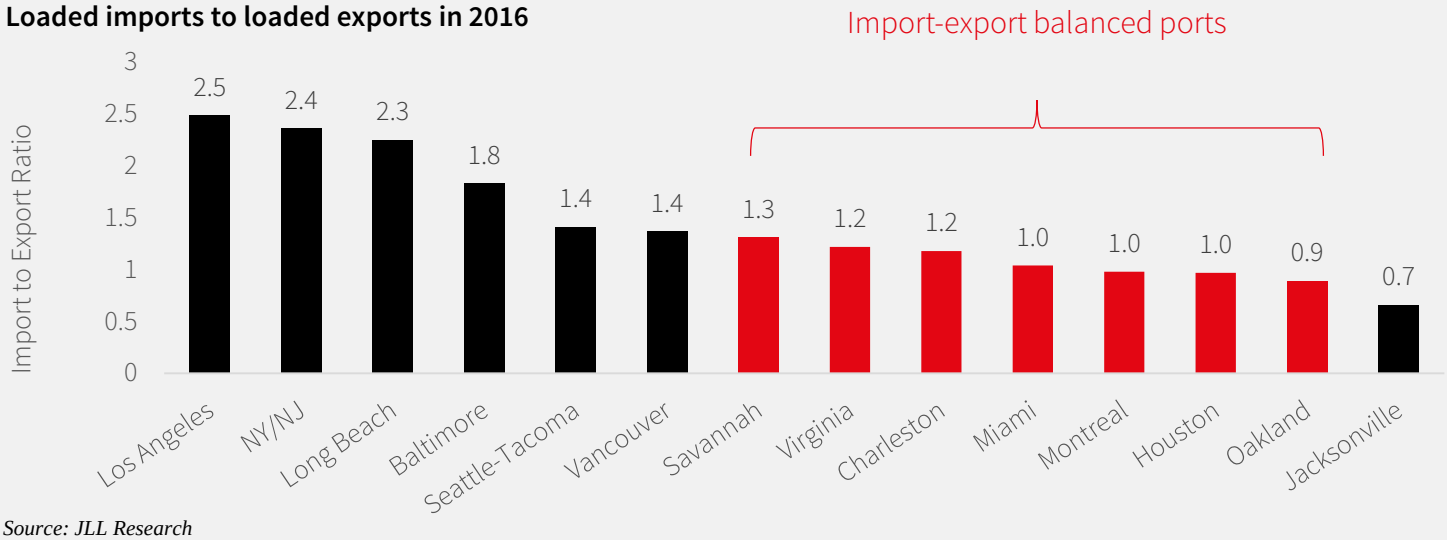
Shipper efficiency is of importance to meet speed-to-market demands. In 2007–2008 there was a concern of worsening port traffic congestion; in the intervening years, there were few planning efforts focused on reducing congestion when the volumes regained their previous peak level. Some ports have made an effort but have been hampered by changing industry regulations (FMCSA HOS rules) and practices (such as supplying chassis) and efforts by environmental lobbyists.

From an industrial real estate perspective, areas surrounding ports must have the infrastructure to support the increased cargo flow from the new ships. Given the high occupancy levels, big-box availability (over 500,000 square feet) in most port submarkets is close to none. Moreover, given the lack of available buildable industrial-zoned land, users seeking warehouse space closer to the ports will be forced to expand their search to other submarkets.

Looking at loaded import to export ratios, a well-balanced, successful port will have a ratio close to 1.0. Miami, Montreal, Houston and Oakland all are very close to 1.0, signifying balance of cargo flowing through the ports.

The ports of New York/New Jersey, Los Angeles and Long Beach serve larger consumer markets, hence the imbalance. Port gateways with balanced container flows mean there is demand for both import-and export-oriented industrial real estate. As import-heavy ports only drive demand for the import-oriented industrial real estate. Having balanced flows is important as ocean carriers prefer to call at ports where they can carry containers loaded with goods for import and export. This makes more financial sense as opposed to ferrying empty containers back to import destinations, which is a deadweight cost.

Loaded imports to loaded exports in 2016



Source: JLL Research

Getting to the “last mile”

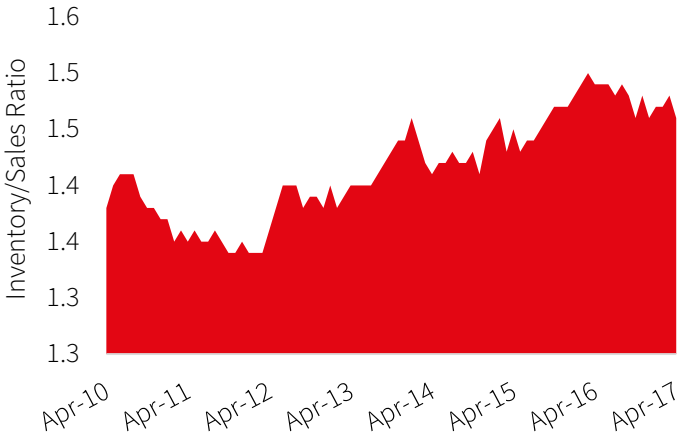
Getting to the last mile —Retail and e-commerce have reorganized supply chain networks.

Historically, we’ve seen Asia be the dominant player in U.S. trade flow patterns, as most of the North American and European imports originate there. As population and on-demand services increase, we expect these trade flow patterns to be more volatile and fragmented. There is an increasing need for logistics buildings closer to population centers. The rise of e-commerce in recent years has been the biggest trendsetter in this arena, reorganizing the supply chain network to meet last-mile deliveries.

There is an increased demand and need for smaller shipments to expedite the shipping process. With e-commerce companies holding more goods in warehouses to service the last mile, the inventory to sales ratio is also on the rise. Getting products across the “first mile” to the “last mile” is an important portion of today’s supply chain. What’s more, planning the location of an industrial facility in the “first mile” and the “last mile” given the surrounding traffic congestion is critical.

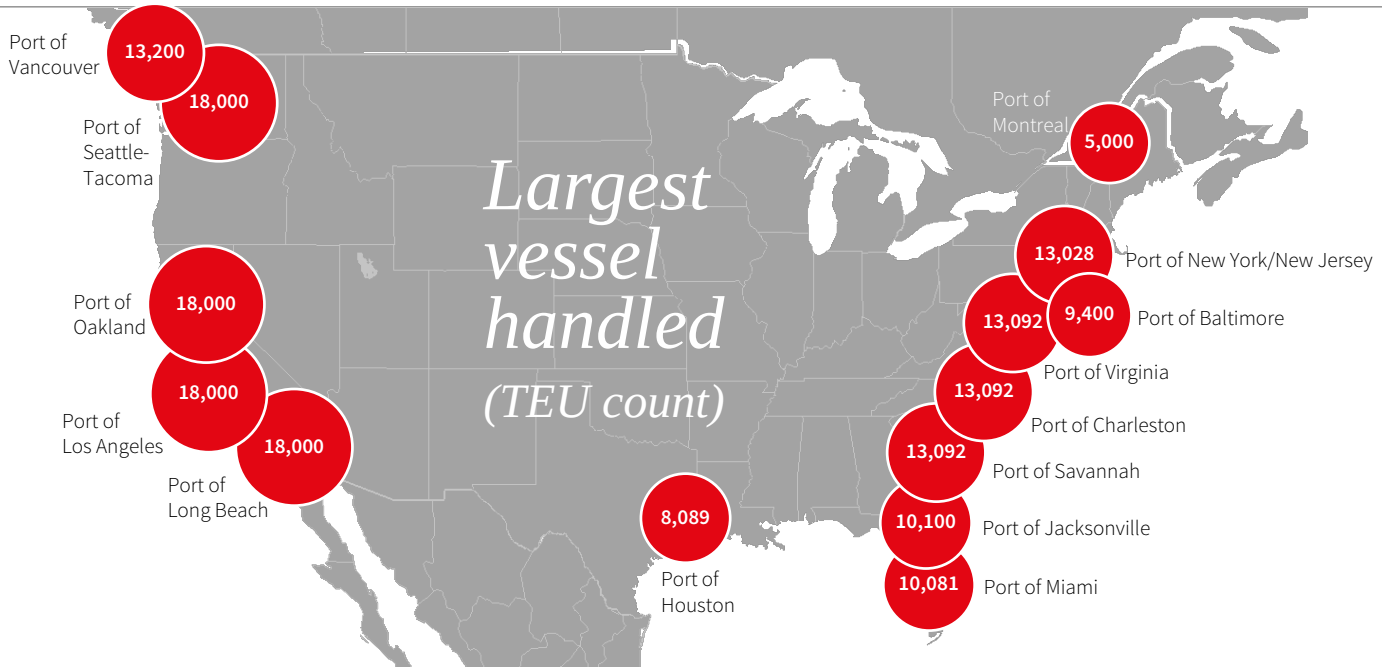
Leading 3PLs (third-party logistics) and other logistics and distribution companies will be the dominant players in the last-mile delivery and reverse logistics infrastructures given their scale and networks. Meanwhile, regional and local logistics carriers will be able to provide a competitive advantage to clients just by lowering operating costs. As freight volumes increase, shifting between modes of transportation is likely as customers demand faster delivery times.

Inventory to sales ratio adjusted since 2010



Source: JLL Research; Census Bureau

Expanded Panama Canal turns one!



Source: JLL Research and individual seaports

Expansion completed, Gulf and East Coast port TEU volumes reach record highs.

After almost a decade and over $5 billion spent, the Panama Canal Expansion Program celebrated its first anniversary on June 26. The new lane of traffic with increased depth and width of the canal lanes and locks is accommodating bigger ships coming from Asia to the U.S. East Coast. Shipping companies today are deploying larger vessels, "mega-ships," through the Canal. As per the Panama Canal Authority, the Canal is averaging six daily Neopanamax transits.

At the end of 2016 the East and Gulf Coast ports of Baltimore, Charleston, Houston, Jacksonville, Miami and Virginia all reported record high TEUs thanks in part to the new expanded Panama Canal. Comparing 2016 volumes with 2013, TEU volumes at the Southeast ports of Savannah and Charleston and the Mid-Atlantic ports of Baltimore and Virginia show nearly 20.0 percent in TEU volume growth, the highest jump of all JLL tracked major ports. With increasing population in the Sunbelt region, there is a demand for imported goods coming from Asia.

Ports keeping up, infrastructure improvements under way.

In anticipation of the opening of the Canal, U.S. East Coast ports have been investing to accommodate these larger ships. Port Miami spent $1.3 billion to deepen shipping channels, strengthen docks, build a roadway tunnel connecting the port to the interstate and build railroad tracks to link the port to the Florida East Coast rail yard. Similarly, Savannah is also deepening its shipping channel in a project costing $706 million and expected to be completed by January 2022. Charleston is undergoing a similar project to deepen the entrance and inner harbor. Likewise, a billion-dollar project raising the Bayonne Bridge recently reached navigational clearance at the Port of New York and New Jersey. Over the next five years, East Coast ports will complete these infrastructure improvements at their ports and make additional improvements to their supply chain network.

Bumpy road (canal) ahead for ships.

While the Canal is now complete, offering the third lane and shorter travel times, challenges remain. Since not all the East Coast ports are prepared to receive the Neopanamax vessels, there could be a possible holdback from the shipping companies to utilize the Canal fully. Until all these infrastructure improvement construction project are complete and other ports dredge their channels, the full capacity of the Canal will not be realized in the near term.

What could a revision in NAFTA mean for the logistics market?

Undoubtedly, trade agreements tend to have some impact on supply chain networks and the logistics sector, as the two are closely connected. Open borders provide flexibility to corporations as goods flow freely across borders. Over the years, corporations have taken advantage of the economies of scale by locating assembly and manufacturing facilities across national boundaries.

On the supply chain side, trans-border data indicates that the majority of trade between the United States and Mexico remains land-based, either trucked or railed. The exception is the trade of bulk energy, mineral products or chemicals/fertilizers.

Should NAFTA renegotiations lead to a reduction of trade between the United States and Mexico, particularly of manufactured products, the largest impact would likely be lower truck and rail volumes. Exports originating in the United States and destined for Mexico are mostly concentrated in land-based modes. Maritime's share of total U.S.-bound imports of autos, consumer products and industrial/manufacturing products represents only a small share of total volumes. Impact at Mexico's maritime ports could materialize in the receipt of energy, agriculture and chemical products.

Some questions remain unanswered. Will the reduced trade impact investment in industrial properties? If the United States withdraws from NAFTA, will companies look to shift their logistics network closer to U.S. population centers?

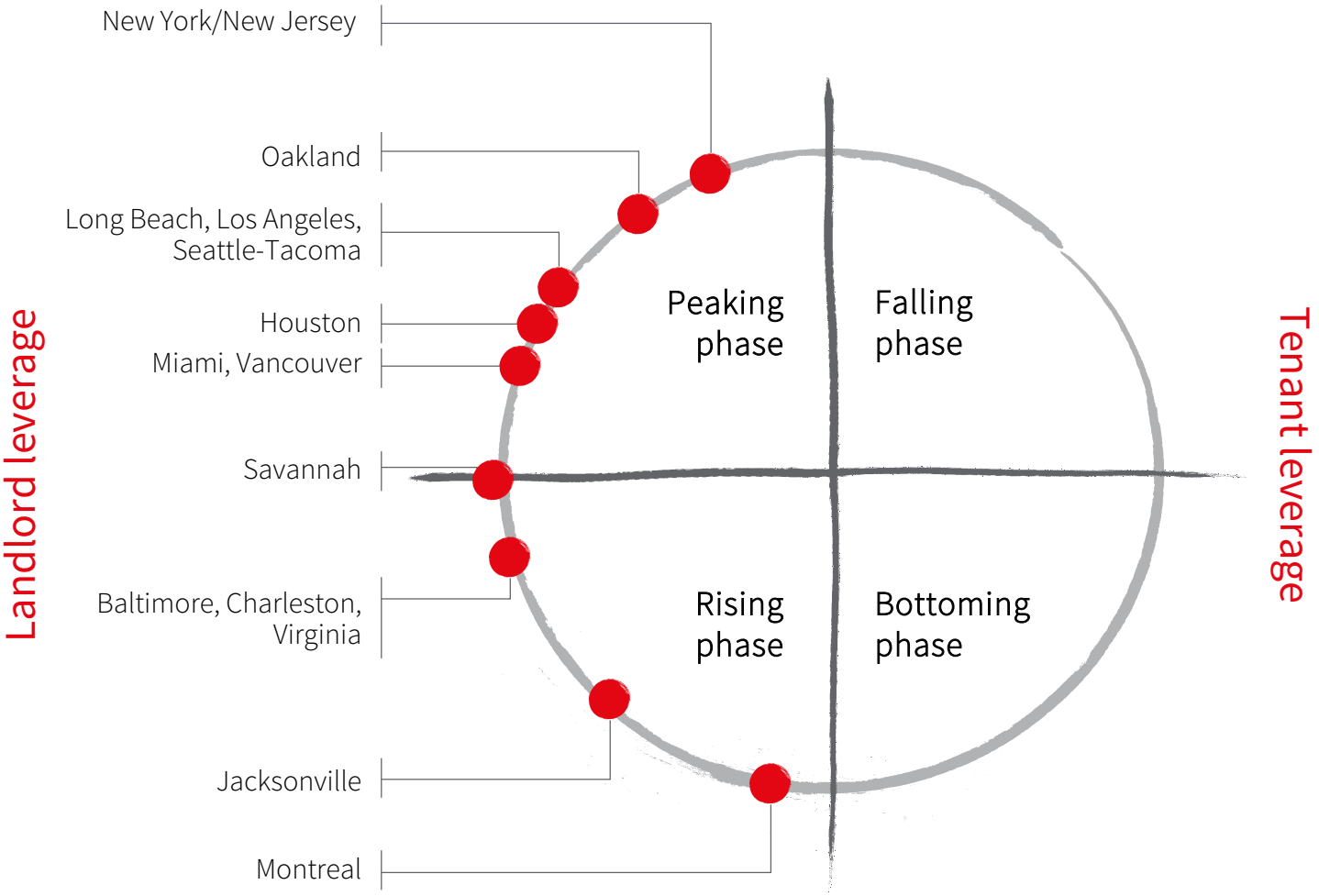
Over the decades since NAFTA's inception, a significant amount of logistics and manufacturing infrastructure has been developed in both countries to support export and import flows between the two nations. If sufficiently high tariffs are imposed on imports from Mexico, then consumers will be forced to pay higher prices or turn to domestic sources.

Given that the major industrial warehouse and distribution centers exist near large population centers, it is likely these markets would be the first to pick up domestic business if import business dropped off. These big logistics markets like Dallas, Northern California and Los Angeles have substantial organic demand that can potentially offset any trade imbalances with Mexico. On the other hand, tier 2 logistics markets like Phoenix, San Diego, San Antonio and Kansas City might be the most exposed to risk if trade with Mexico declined.

Looking ahead

It is unlikely that anything of impact will occur in the industrial real estate sector in next few months. Given the questions surrounding U.S. trade policy, the consequences are yet to be realized. How aggressively each side approaches formal negotiations will play a part. A presidential election in Mexico also looms in July 2018. We suspect this uncertainty will create longer decision cycles as companies wait to see what tariffs will be in the United States. In the near term, this might take some momentum out the industrial estate market.

Seaport property clock



The JLL seaport property clock illustrates where each port market sits within its real estate cycle. Markets generally move clockwise around the dial, with those markets on the left side generally facing more landlord-favorable environments, whereas those on the right experience generally tenant-favorable conditions.

Select top North American seaports and property market indicators

	2016 volumes (TEUs)	2016 annual change	YTD 2017 TEUs*	Immediate market size (m.s.f.)	Current vacancy	2016 net absorption (m.s.f.)	YTD 2017 net absorption (m.s.f.)	Average asking rents (NNN)	Container terminal operators
Port of Baltimore	870,115	3.50%	218,685	92.4	8.8%	1.2	1.7	$4.87	Baltern; Mid-Atlantic Terminal; Ports America; Maryland International Terminals, Inc.
Port of Charleston	1,996,275	1.20%	553,248	23.0	7.4%	0.9	0.6	$5.22	South Carolina State Port Authority
Port Houston	2,182,720	2.40%	607,462	54.7	4.7%	2.2	1.6	$6.06	Port of Houston Authority
Port of Jacksonville	986,279	7.80%	255,656	69.6	7.9%	0.8	-0.5	$3.87	Jetport; Ceres Terminals Inc.; Coastal Maritime; Marine Terminal Corp; SSA Marine (SSA Cooper LLC); APM; Global Stevedoring/ICS Logistics; TraPac Marine Terminal
Port of Long Beach	6,775,171	-5.80%	2,144,394	199.0	1.8%	1.3	0.8	$8.70	Total Terminals International; International Transportation Services (ITS); Long Beach Container Terminal, Inc.; Pacific Maritime Services; SSAT Long Beach LLC; SSA Terminals
Port of Los Angeles	8,856,783	8.50%	2,240,544	133.4	2.2%	1.0	1.1	$10.08	China Shipping North America; Yang Ming Marine Transport; TraPac, Inc.; Yusen Terminals, Inc.; Everport Terminal Services; Eagle Marine Services, Ltd.; APM Terminals Pacific; California United Terminals
Port Miami	1,030,758	1.30%	260,932	108.0	4.9%	2.5	0.3	$8.28	Seaboard Marine; South Florida Container Terminal; Port of Miami Terminal Operating Company (POMTOC)
Port of Montreal	1,447,566	0.10%	360,122	245.0	5.0%	1.9	2.0	$4.96	Montreal Gateway Terminals Partnership; Termont Montreal; Empire Stevedoring Co. Ltd.
Port of New York/ New Jersey	6,251,953	-1.90%	1,533,004	302.8	4.5%	5.7	-1.1	$8.23	APM Terminals; Global Terminal; Maher Terminals; New York Container Terminal; Port Newark Container Terminal: Red Hook Container Terminal
Port of Oakland	2,369,631	4.00%	568,208	85.7	4.2%	1	-0.4	$9.50	Stevedoring Services of American Terminals, Inc. (SSA); Everport Marine Services, Inc.; TraPac Inc.
Port of Savannah	3,644,521	-2.50%	973,780	36.2	4.0%	1.3	0.6	$4.12	Georgia Port Authority
Port of Seattle-Tacoma	3,615,752	2.40%	740,764	165.4	3.3%	4.4	1.1	$6.74	Ports America Group; SSA Terminals; Port of Tacoma; Total Terminals International, LLC; Alaska Marine Lines; Port of Seattle; APM Terminals; West Coast Terminal & Stevedoring; Washington United Terminal; TOTE
Port of Vancouver	2,929,585	-4.10%	740,239	89.9	3.5%	1.9	0.2	$8.76	DP World Vancouver; GCT Canada Limited Partnership; Fraser Surrey Docks LP
Port of Virginia	2,655,707	4.20%	228,517	35.7	6.3%	-0.6	0.2	$4.67	Virginia International Terminals; APM Terminals

**YTD 2017 TEUs: January through March Source: JLL Research*

Local seaports

Port of Baltimore

Port of Baltimore looks toward expansion and capital investment to accommodate rising volumes

Capital investments

- After being named by the *Journal of Commerce* as the fastest-growing port of the East Coast, the Port of Baltimore looks to its second attempt at a $155 million FASTLANE grant for the Howard Street Tunnel. The project will raise the clearance of the tunnel, which will allow CSX to integrate the Seagirt Intermodal into their double-stack container network.
- In March 2017, the Maryland Port Administration acquired a $90 million industrial portfolio adjacent to the Seagirt Terminal to secure land for the rapidly growing port. Two of the fully occupied warehouses in the portfolio will be demolished.

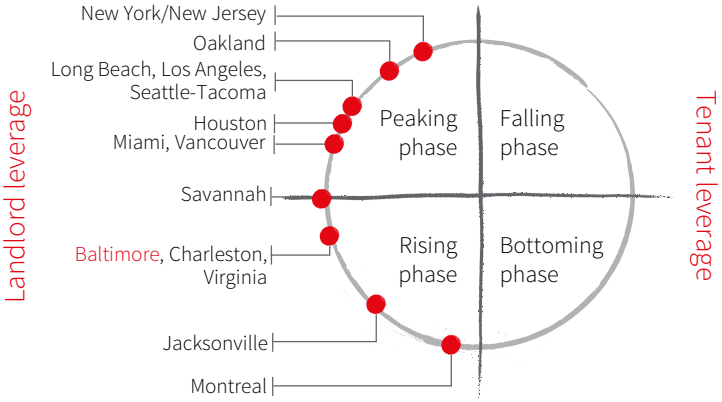
Market conditions

- Tenant demand has increased significantly in the port-centric northern submarkets. Big-box users related to e-commerce, 3PLs and food/beverage continue to lease space at rates not seen historically.
- The increasingly land-constrained Baltimore City East submarket remains a hot spot for Class A speculative developments as developers like Duke Realty and Chesapeake Real Estate Group remain bullish on leasing.
- Despite leverage seemingly reaching an inflection point in most submarkets, a robust port-centric tenant pipeline is expected to chip away at functional availabilities during the year.

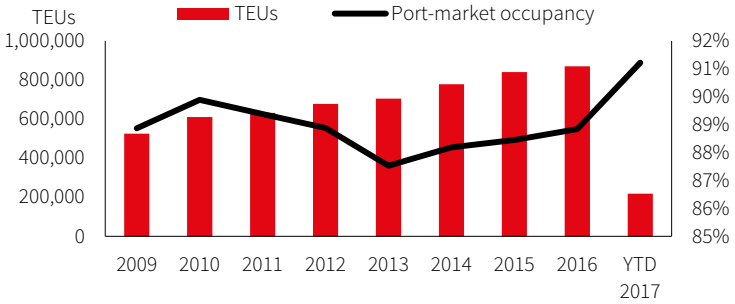
Development

- Tradepoint Atlantic, Principio Business Park and Eastgate Business Park account for 87.0 percent of the construction pipeline, of which 96.9 percent comes from blocks over 500,000 square feet. Non-traditional users, such as manufacturers and RORO users, continue to target the rapidly growing 3,100 AC Sparrows Point redevelopment, looking to capture multimodal opportunities.

Seaport property clock



TEUs vs. port-market occupancy



Port vital facts

YTD 2017 volume:	218,685 TEUs (as of March 2017)
2016 volume:	870,115 TEUs
Main routes:	Chesapeake Bay
Trading partners:	China, Netherlands, Japan, Brazil, South Korea, Canada
Cranes/Post-Panamax cranes:	30 | 4
Current channel depth:	50 feet (at MLW)
Berths:	29
Container terminals:	2 | Seagirt, Dundalk
Post-Panamax ready:	Yes
Class I Rail Operators:	CSX Transportation, Norfolk Southern

Port of Baltimore

Real estate indicators

Immediate market size (m.s.f.)	Current vacancy	Total availability	Average asking rents (NNN)
92.4	8.8%	15.2%	$4.87

2016 net absorption (m.s.f.)	YTD 2017 net absorption (m.s.f.)	YTD 2017 absorption as % of stock	Under construction (m.s.f.)
1.2	1.7	1.8%	3.1

Forecast
(12 months)

Vacancy ∨

Rents ∧

TEUs ∧

For more information, contact: Michael LaPaglia | michael.lapaglia@am.jll.com

Port of Charleston

Large-scale investments prepare South Carolina for the era of large ships

Capital investments

- The Port of Charleston welcomed the largest ship ever to visit the East Coast ports, the COSCO Development, which can hold 13,000 TEUs. To prepare for bigger ships, the port has two 155-foot-tall cranes, which can extend 40 feet higher than its existing cranes, enabling workers to handle 14,000 TEU ships.
- Charleston Harbor's much anticipated deepening project is expected to begin in 2017. The plan will deepen the harbor to 52 feet, making it the deepest harbor on the East Coast. The new depth means the Port of Charleston will be able to accommodate post-Panamax ships without tidal restriction.
- The Wando Welch Terminal is undergoing a $44 million renovation project to strengthen the wharf and prepare for larger ships and equipment. The new Hugh K. Leatherman Sr. Terminal will boost capacity by 50.0 percent. The anticipated opening date for the terminal's first phase is 2019.

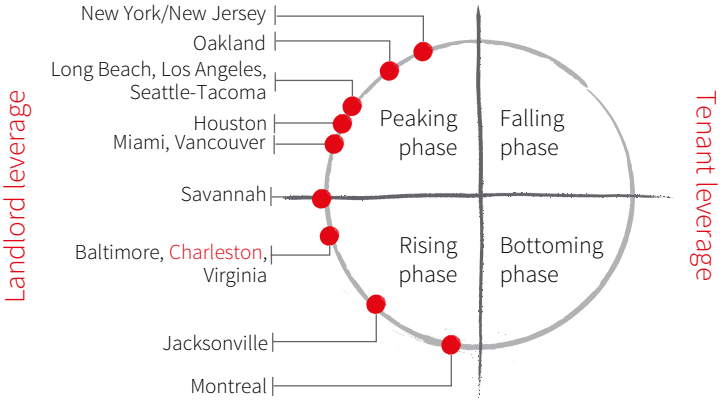
Market conditions

- Increased occupancy has led to rising rental rates as the Charleston market becomes decidedly landlord favorable. Expansions from local companies, such as Mercedes-Benz, and the port's expanded capabilities have attracted supplies and other industry to the area.

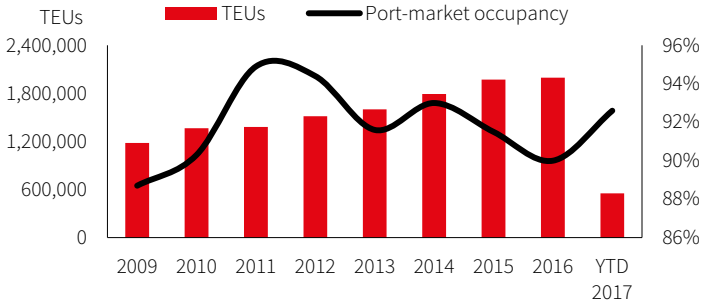
Development

- High levels of industrial spec construction correspond with immense growth in Charleston. Strong demand for industrial space continues to push leasing rates up.
- South Carolina's Inland Port Greer handled a record-setting 103,639 rail lifts in 2016. Due to the large growth in the intermodal sector, the state is constructing Inland Port Dillon to help support the growing intermodal cargo volume.

Seaport property clock



TEUs vs. port-market occupancy



Port vital facts

YTD 2017 volume:	553,248 TEUs (as of March 2017)
2016 volume:	1,996,275 TEUs
Main routes:	Cooper & Wando Rivers via Charleston Harbor
Trading partners:	Germany, China, United Kingdom, Japan, India, South Korea, Netherlands, France
Cranes/Post-Panamax cranes:	28 | 28
Current channel depth:	45 feet (at MLW)
Berths:	7
Container terminals:	2 | Wando Welch, North Charleston
Post-Panamax ready:	Yes
Class I Rail Operators:	CSX Transportation, Norfolk Southern

Port of Charleston

Real estate indicators

Immediate market size (m.s.f.)	Current vacancy	Total availability	Average asking rents (NNN)
23.0	7.4%	12.0%	$5.22

2016 net absorption (m.s.f.)	YTD 2017 net absorption (m.s.f.)	YTD 2017 absorption as % of stock	Under construction (m.s.f.)
0.9	0.6	3.0%	0.3

Forecast
(12 months)

Vacancy ∨

Rents ∧

TEUs ∧

For more information, contact: Ashley Rogers | ashley.rogers@am.jll.com

Port Houston

Industrial developments evolve and expand to meet demands of major port-area users

Capital investments

- Port Houston expects to invest $333.0 million in capital projects over 2017 and 2018, including adding Post-Panamax cranes where needed.
- Bayport Wharf #2, the fourth wharf at the terminal, is currently under construction, and Barbours Cut Wharf #2 reconstruction is progressing rapidly.
- Additional funds will be used on projects to advance infrastructure and technology, as well as routine maintenance, security and container yard development.

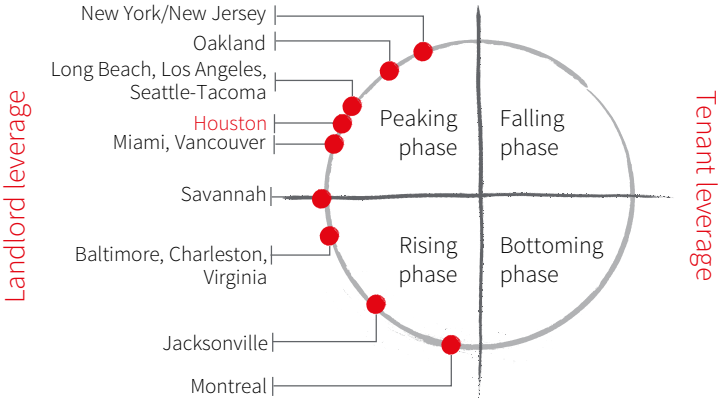
Market conditions

- The Port Houston area continues to exhibit strong market fundamentals with significant deal volume and net absorption in 2017.
- Much of the overall market activity is driven by the strength of the downstream sector and resulting petrochemical boom, which provides strategic advantages to the submarket.
- Resins/plastics and chemicals/minerals account for 46.7 percent of Port Houston's exported TEUs.
- An estimated 250,000 TEUs in new exports will be created by 2019 as newly delivered petrochemical projects ramp up production.

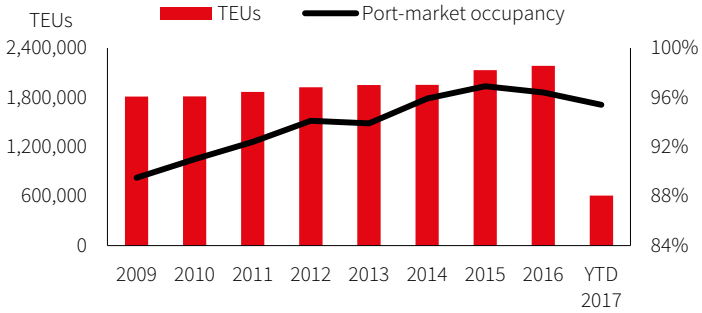
Development

- Projects recently completed include 1.0 million square feet for Ikea and 960,000 square feet for Katoen Natie; projects soon to break ground include 750,000 square feet for Ravago Americas and 500,000 square feet for Vinmar.
- While not traditionally a big-box market, Houston is evolving as large industrial users seek to capitalize on the region's shipping and distribution networks.

Seaport property clock



TEUs vs. port-market occupancy



Port vital facts

YTD 2017 volume:	606,662 TEUs (as of March 2017)
2016 volume:	2,182,720 TEUs
Main routes:	Gulf of Mexico
Trading partners:	Mexico, China, Brazil, Germany, Netherlands, Japan, South Korea, Saudi Arabia, Venezuela
Cranes/Post-Panamax cranes:	41 | 13
Current channel depth:	45 feet
Berths:	30
Container terminals:	2 | Barbours Cut and Bayport
Post-Panamax ready:	Yes
Class I Rail Operators:	Union Pacific, BNSF, Kansas City Southern

Port Houston

Real estate indicators

Immediate market size (m.s.f.)	Current vacancy	Total availability	Average asking rents (NNN)
54.7	4.6%	7.7%	$6.06

2016 net absorption (m.s.f.)	YTD 2017 net absorption (m.s.f.)	YTD 2017 absorption as % of stock	Under construction (m.s.f.)
2.2	1.6	3.0%	1.3

Forecast
(12 months)

Vacancy ∨

Rents ∧

TEUs ∧

For more information, contact: Rachel Alexander | rachel.alexander@am.jll.com

Port of Jacksonville

Recent developments around JAXPORT and its major servicers can have broad impacts on related real estate

Capital investments

- The port is interested in dredging the St. Johns River to 47 feet to accommodate the new post-Panamax carriers. However, the $766 million project has been in the approvals process for many years now and still has no established completion schedule.
- JAXPORT's new intermodal container transfer facility at Dames Point recently became operational. The facility allows for the direct transfer of up to 200 containers per day between vessels and trains.
- Three new $38 million 100-gauge cranes became operational, which can lift up to 65 tons and reach 22 containers across.

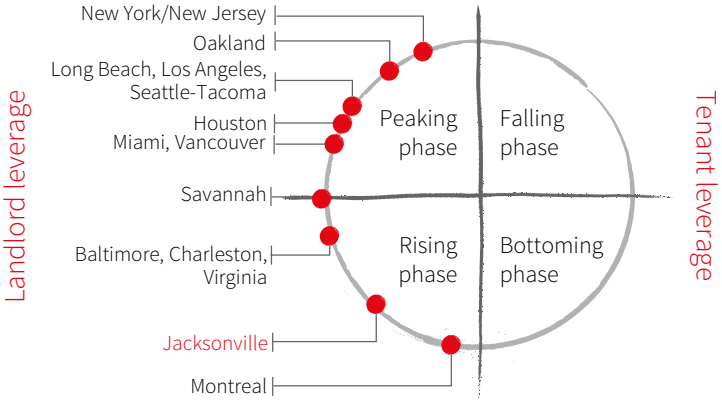
Market conditions

- The industrial climate, especially within the vicinity of the port, remains hot. In 2016, occupancy in port-related properties reached a post-recession high amid record TEU volume.
- The port-centric market got off to a rocky start in 2017, with negative 500,000 square feet of absorption, but the market is expected to rebound over the course of the year given known demand for product in the area and a record TEU pace.
- Asking rates have also been on the rise, increasing 5.2 percent to $3.87 per square foot (NNN), which is above both the three-and five-year averages.

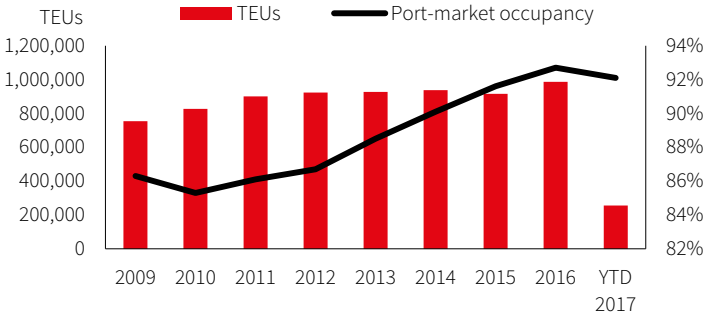
Development

- JAXPORT CEO Brian Taylor left the company in March, replaced by senior director of government affairs Eric Green in an acting capacity. The port is seeking to continue infrastructure upgrades.
- The majority of new construction in the overall market is occurring within the port-centric market. There is currently 2.6 million square feet under development, with an additional 7.0 million square feet proposed, some directly at JAXPORT.

Seaport property clock



TEUs vs. port-market occupancy



Port vital facts

YTD 2017 volume:	255,656 TEUs (as of March 2017)
2016 volume:	986,279 TEUs
Main routes:	21-mile stretch of the St. Johns River
Trading partners:	Puerto Rico, China, Japan, Finland, Brazil, Saudi Arabia, Venezuela, Netherlands, Vietnam, Turkey
Cranes/Post-Panamax cranes:	18 | 2
Current channel depth:	36-40 feet
Berths:	13 | Tallyrand-6, Dames Point-4, Blount Island-3
Container terminals:	3 | Tallyrand, Blount Island, Dames Point
Post-Panamax ready:	No
Class I Rail Operators:	CSX Transportation, Norfolk Southern

Port of Jacksonville

Real estate indicators

Immediate market size (m.s.f.)	Current vacancy	Total availability	Average asking rents (NNN)
69.6	7.9%	9.7%	$3.87

2016 net absorption (m.s.f.)	YTD 2017 net absorption (m.s.f.)	YTD 2017 absorption as % of stock	Under construction (m.s.f.)
0.8	-0.5	-0.7%	2.6

Forecast
(12 months)

Vacancy ∨

Rents ∧

TEUs ∧

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Port of Long Beach

Growing e-commerce and logistics users drive demand, resulting in steeper rents

Capital investments

- The port plans to invest more than $3.0 billion over the next 10 years on capital projects. Ongoing major projects include the Gerald Desmond Bridge (GDB) replacement, Middle Harbor redevelopment (Piers D/E/F), dredging projects, port-wide rail program, and facility and general infrastructure improvement programs (water, street, sewer, stormwater CIP).
- The Middle Harbor project is an approximately $1.3 billion modernization program scheduled for completion in 2019. The project adds on-dock rail capacity and shore-side electrical power and will dredge deeper channels to accommodate the newest generation of 20,000+TEU container ships.
- The Gerald Desmond Bridge replacement project is fully under construction. The new bridge will be higher to provide clearance for new and future larger vessels and wider to improve traffic flow and safety.

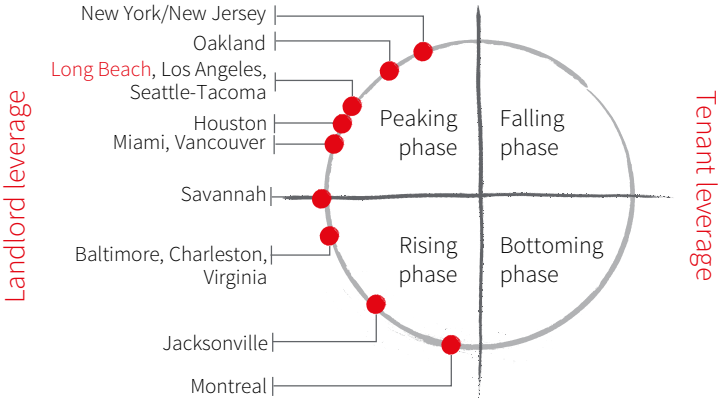
Market conditions

- The industrial market has never been tighter around the port area. Demand stays extremely high with tenants and buyers in fierce competition for space.
- Although all industry sectors are attracted to the very desirable location, logistics and distribution leasing activity are driving the market.
- These market conditions have allowed landlords to continuously push rents higher. Lease rates and sale prices are at all-time highs with an average 3–6 percent rent growth annually.

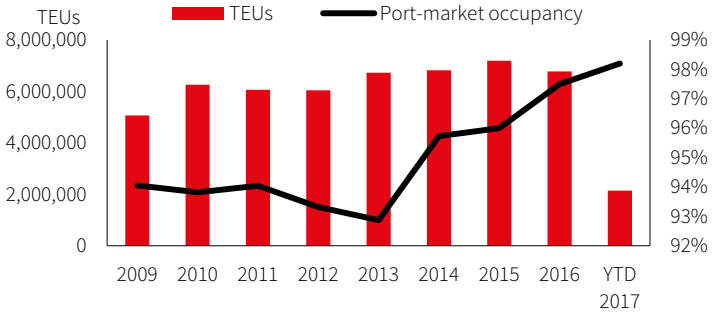
Development

- Currently, there are seven projects under construction totaling 1.3 million square feet. Four of the seven projects are in Santa Fe Springs. The 200,000-square-foot project in Long Beach is preleased.

Seaport property clock



TEUs vs. port-market occupancy



Port vital facts

YTD 2017 volume:	2,144,394 TEUs (as of March 2017)
2016 volume:	6,775,171 TEUs
Main routes:	San Pedro Bay
Trading partners:	China, South Korea, Japan
Cranes/Post-Panamax cranes:	66 Post-Panamax cranes
Current channel depth:	76 feet (main channel)
Berths:	80
Container terminals:	6
Post-Panamax ready:	Yes
Class I Rail Operators:	Union Pacific, BNSF

Port of Long Beach

Real estate indicators

Immediate market size (m.s.f.)	Current vacancy	Total availability	Average asking rents (NNN)
199.0	1.8%	4.6%	$8.70

2016 net absorption (m.s.f.)	YTD 2017 net absorption (m.s.f.)	YTD 2017 absorption as % of stock	Under construction (m.s.f.)
1.3	0.8	0.4%	1.3

Forecast
(12 months)

Vacancy >

Rents ^

TEUs ^

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Port of Los Angeles

Tenants continue to compete for space as rents set new record highs

Capital investments

- The port's planned $2.6 billion investment in capital improvements over the next 10 years will ensure its continued ability to provide superior cargo terminals, rail and warehouse infrastructure and attract top business tenants from around the world. TraPac is expanding through a $510 million program that will extend its wharves to 4,600 linear feet, deepen water depth at Berths 144–147, install new cranes, upgrade and electrify backlands, make road and gate improvements, and build a new on-dock rail facility. Construction of the on-dock rail is substantially complete, and the final phase of the backland improvements is expected to be completed in 2017.
- Construction is under way for Yusen Terminals Inc.'s (YTI) $49 million project to deepen and improve terminal facilities, allowing the terminal operator to accommodate next-generation vessels and increase cargo volume.

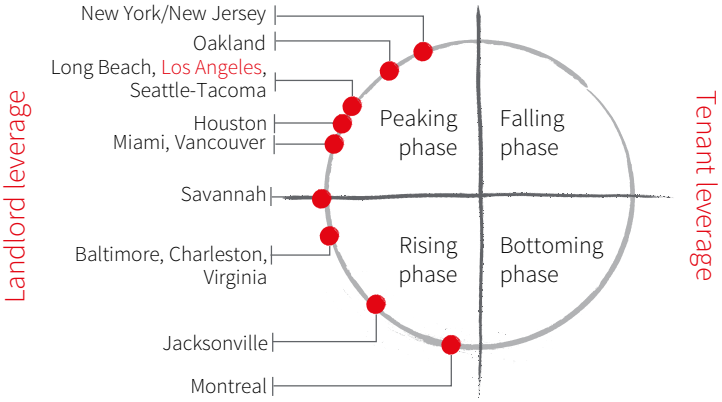
Market conditions

- Positive momentum continued through Q1 2017. Vacancy went up 30 basis points, but this was due to 1.4 million square feet of new product delivered to the market. Even with the increase in development, demand continues to outstrip supply.
- Rents continue to rise as the market remains landlord favorable. Year-over-year rents have gone up by 11.6 percent.

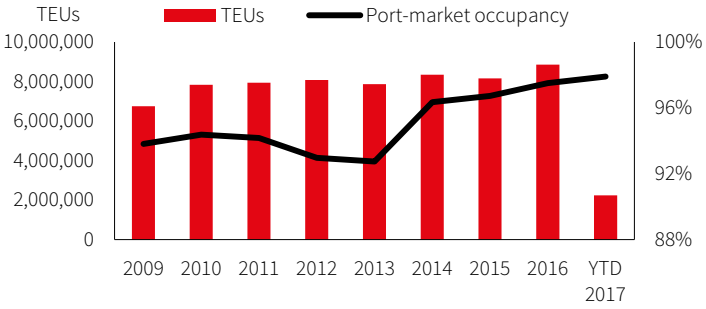
Development

- Currently, there are only three projects totaling 631,827 square feet under way in the Los Angeles Port area. Two of the three projects are preleased. Continued high demand from tenants and users coupled with limited available space has pushed speculative development in the Los Angeles industrial market.

Seaport property clock



TEUs vs. port-market occupancy



Port vital facts

YTD 2017 volume:	2,240,544 TEUs (as of March 2017)
2016 volume:	8,856,783 TEUs
Main routes:	San Pedro Bay
Trading partners:	China/Hong Kong, Japan, South Korea
Cranes/Post-Panamax cranes:	79 | 69
Current channel depth:	53 feet (main channel)
Berths:	57 (30 from the container terminals)
Container terminals:	8
Post-Panamax ready:	Yes
Class I Rail Operators:	Union Pacific, BNSF

Port of Los Angeles

Real estate indicators

Immediate market size (m.s.f.)	Current vacancy	Total availability	Average asking rents (NNN)
133.4	2.2%	3.5%	$10.08

2016 net absorption (m.s.f.)	YTD 2017 net absorption (m.s.f.)	YTD 2017 absorption as % of stock	Under construction (m.s.f.)
1.0	1.1	0.7%	0.6

Forecast
(12 months)

Vacancy >

Rents ^

TEUs ^

For more information, contact: Teresa Petrosyan | teresa.petrosyan@am.jill.com

Port Miami

TEU volume has increased by more than 28.0 percent since 2010

Capital investments

- In 2016, Port Miami completed its $1.0 billion capital improvement plan, which included dredging its harbor to meet the 50- to 52-foot water depth to accommodate today's modern vessels. Miami is now one of a handful of "Big Ship Ready" ports on the eastern seaboard.
- In addition, Port Miami is developing plans for an off-dock container yard that would alleviate the tightening capacity of its existing terminals. The proposed project site is today a 400-acre waste facility. This project aims to serve the e-commerce giants investing in the area such as Amazon and other major retailers in the region.
- Port Miami looks to build a $100 million terminal for Norwegian Cruise Line by 2020. This capital improvement project would combine two existing terminals (B and C) into a single one, allowing for the berthing of two 5,000 passenger ships.

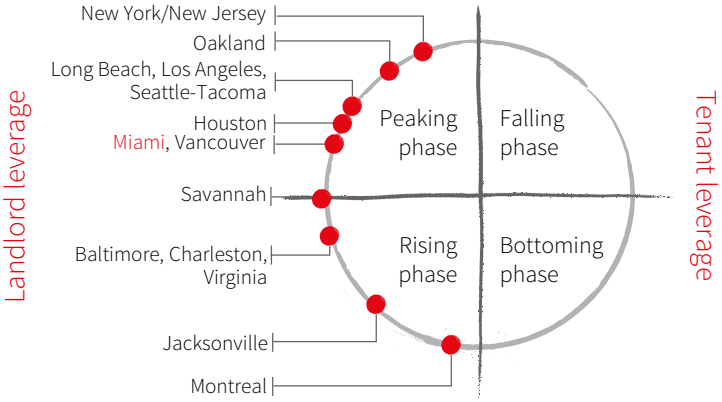
Market conditions

- Similar to 2015, annual TEU volume surpassed the 1.0 million mark last year. This represented a year-over-year increase of more than 2.0 percent. At the same time, the market recorded 50 basis points in occupancy increases, which is currently at 95.1 percent.
- The quarter concluded with over 350,000 square feet of positive absorption, coming mostly from submarkets with close proximity to the port (less than 15 miles). Additionally, rents have increased by 1.0 percent in the last year to $8.28 per square feet.

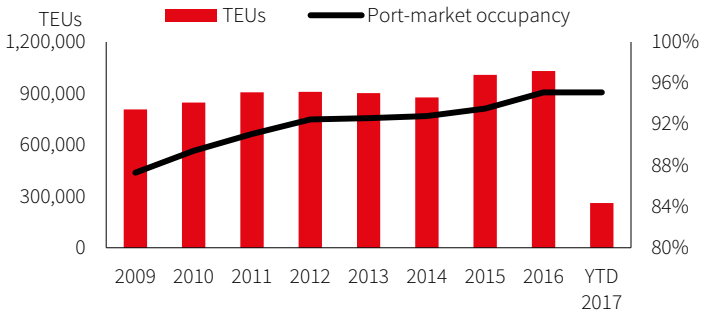
Development

- Construction remains a prime driver for the greater Miami's industrial market, as it increased by more than 23.0 percent year-over-year to 2.2 million square feet. Despite a robust pipeline, development is relatively in line with absorption rates; albeit, still slightly below tenant demand.

Seaport property clock



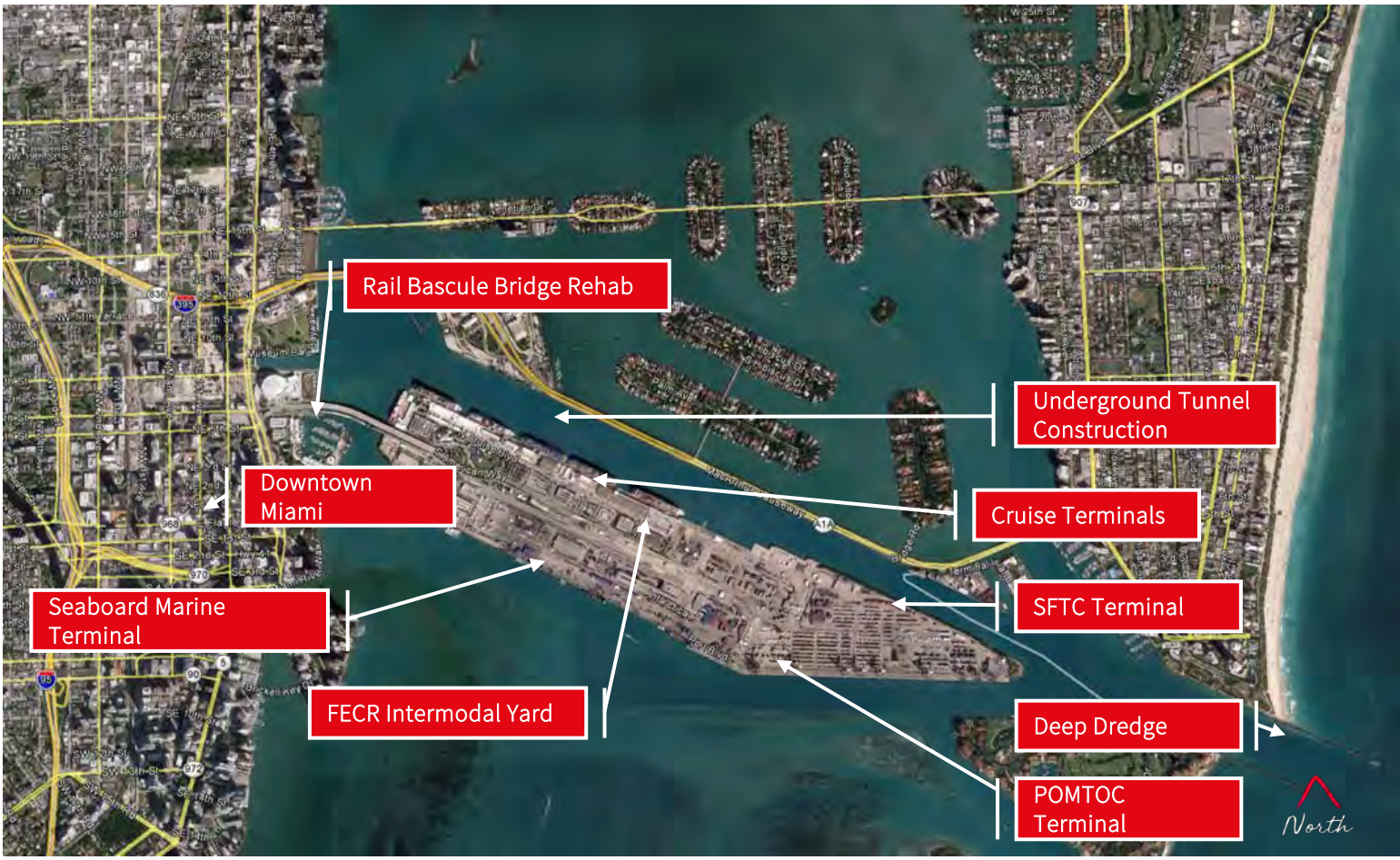
TEUs vs. port-market occupancy



Port vital facts

YTD 2017 volume:	260,932 TEUs (as of March 2017)
2016 volume:	1,030,758 TEUs
Main routes:	Main Ship Channel, Fisherman's Channel,
Trading partners:	China, Dominican Republic, Honduras, Guatemala, Costa Rica, Nicaragua, El Salvador
Cranes/Post-Panamax cranes:	12 | 2
Current channel depth:	50–52 feet
Berths:	64
Container terminals:	3 | Seaboard Marine, South Florida Container, Port of Miami Terminal Operating Company
Post-Panamax ready:	Yes
Class I Rail Operators:	(FEC has connections to Class I lines)

Port Miami



Real estate indicators

Immediate market size (m.s.f.)	Current vacancy	Total availability	Average asking rents (NNN)
108.0	4.9%	10.1%	$8.28

2016 net absorption (m.s.f.)	YTD 2017 net absorption (m.s.f.)	YTD 2017 absorption as % of stock	Under construction (m.s.f.)
2.5	0.3	-0.2%	2.2

Forecast
(12 months)

Vacancy ∨

Rents ∧

TEUs ∧

For more information, contact: Erik Rodriguez | erik.rodriguez@am.jll.com

Port of Montreal

Significant capital investment setting the stage for future growth

Capital investments

- In November 2016, the new Viau Terminal was announced. The total investment of the terminal is CDN$197 million and will increase capacity by 600,000 TEUs, bringing the port's total capacity to 2.1 million annually.
- After submitting its project description for the Contrecoeur Port Terminal Expansion Project to the Canadian Environmental Assessment Agency in December 2015, the Montreal Port Authority (MPA) is expected to submit an impact study in the spring of 2017. The new Contrecoeur container terminal will add a further 1.15 million TEUs, bringing the Port of Montreal's total capacity to 3.25 million TEUs.

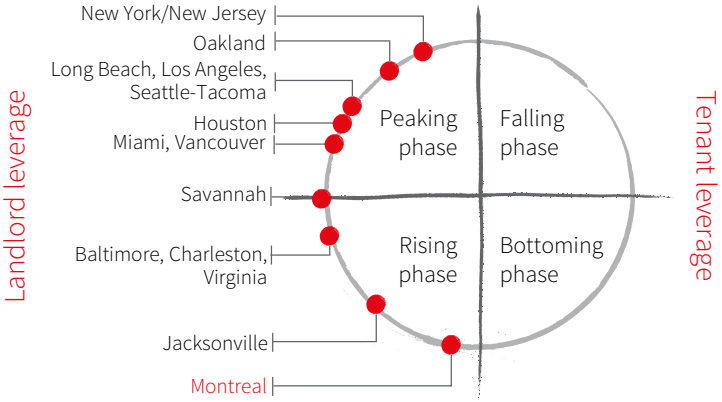
Market conditions

- There is strong demand for industrial space in proximity to the port. For example, only four industrial spaces in excess of 100,000 square feet are available within a five-mile (8 km) radius.
- Even though leasing activity remains high in the East End, where the Port of Montreal is located, asking net rents remain among the lowest in the Greater Montreal Area (GMA) at $5.38 per square feet. This is mostly due to the age of the industrial stock within the submarket, where the average year of construction is 1963.

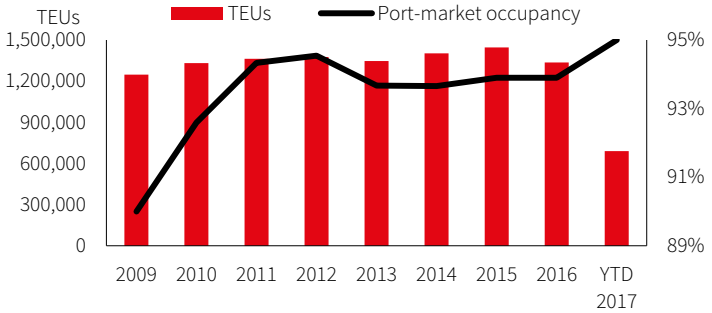
Development

- Out of the 1.5 million square feet under construction in the GMA, only Lumenpulse's 118,000-square-foot facility in Longueuil is within a five-mile radius of the port.
- The MPA has shown support for the development of the "Cité de la Logistique," a logistics zone adjacent to the port's new Viau Terminal. Recently, developers have bought up to 103.3 acres of land.

Seaport property clock



TEUs vs. port-market occupancy



Port vital facts

YTD 2017 volume:	689,710 TEUs (as of April 2017)
2016 volume:	1,336,318 TEUs
Main routes:	St. Lawrence River
Trading partners:	Over 140 countries across the globe
Cranes/Post-Panamax cranes:	12 | 5
Current channel depth:	37 feet
Berths:	68
Container terminals:	5 | Cast, Racine (MGT), Maisonneuve (Termont), Viau (Termont), Bickerdike
Post-Panamax ready:	Yes
Class I Rail Operators:	Canadian National, Canadian Pacific

Port of Montreal

Real estate indicators

Immediate market size (m.s.f.)	Current vacancy	Total availability	Average asking rents (NNN)
245.0	5.0%	6.5%	$4.96

2016 net absorption (m.s.f.)	YTD 2017 net absorption (m.s.f.)	YTD 2017 absorption as % of stock	Under construction (m.s.f.)
1.9	2.0	0.8%	0.4

Forecast
(12 months)

Vacancy ∨

Rents ∧

TEUs ∧

For more information, contact: Dimitri (Jimmy) Mouhteros | dimitri.mouhteros@am.jll.com

Port of New York/New Jersey

Limited speculative activity and intense demand drives port vacancy lower

Capital investments

- After many years of planning and construction, the project to raise the roadway of Bayonne Bridge is nearly complete. Navigational clearance under the bridge is now 215 feet, which will allow Post-Panamax-sized vessels to call on the port's main terminals.
- To prepare for these larger vessels, and thereby the increased number of TEUs in the port at any given time, the Port Authority continues to demolish buildings located on the terminals. To date, 2.9 million square feet of industrial space has been demolished to accommodate larger TEU counts.

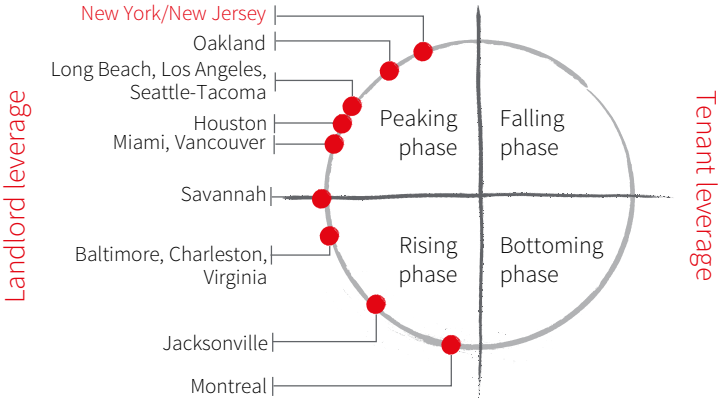
Market conditions

- Over the past year, rents increased at a dramatic rate, as vacancy fell to new cycle lows. Demand for industrial space remained iron-clad as users looked for space near both the port and the population base of the New York metro area.
- Displacement from demolitions continues to elevate demand for space in an already tight market.

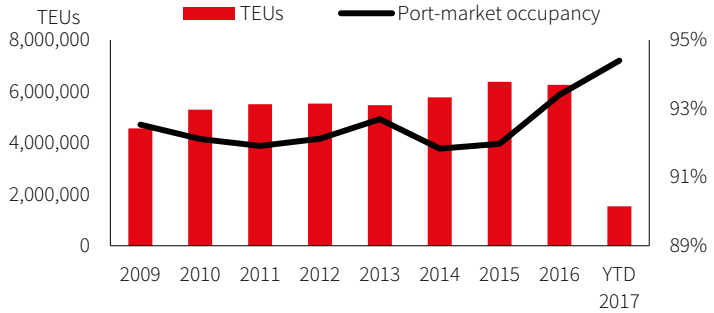
Development

- Despite tremendous leasing velocity over the last 24 months and all-time-low vacancy rates, new development has remained subdued. The lack of development around Port Newark/Elizabeth has been more a result of limited developable plots of land and less a function of market dynamics.
- However, several notable sites are close to breaking ground and could begin development shortly. Bridge Development Partners recently acquired land from a joint venture of Summit Associates and Blackrock. Bridge Development plans to kick off construction later this year. Similarly, Prologis can begin construction on a 418,000-square-foot facility in Elizabeth adjacent to Port Newark/Elizabeth.

Seaport property clock



TEUs vs. port-market occupancy



Port vital facts

YTD 2017 volume:	1,533,004 TEUs (as of March 2017)
2016 volume:	6,251,953 TEUs
Main routes:	Kill Van Kull, Newark Bay, Upper New York Bay
Trading partners:	China, India, Italy, Germany, Brazil
Cranes/Post-Panamax cranes:	61 | 47
Current channel depth:	37–50 feet
Berths:	32
Container terminals:	6
Post-Panamax ready:	Yes
Class I Rail Operators:	CSX, Norfolk Southern, Canadian Pacific

Port of New York/New Jersey

Real estate indicators

Immediate market size (m.s.f.)	Current vacancy	Total availability	Average asking rents (NNN)
302.8	4.5%	8.5%	$8.23

2016 net absorption (m.s.f.)	YTD 2017 net absorption (m.s.f.)	YTD 2017 absorption as % of stock	Under construction (m.s.f.)
5.7	-1.1	-0.4%	4.5

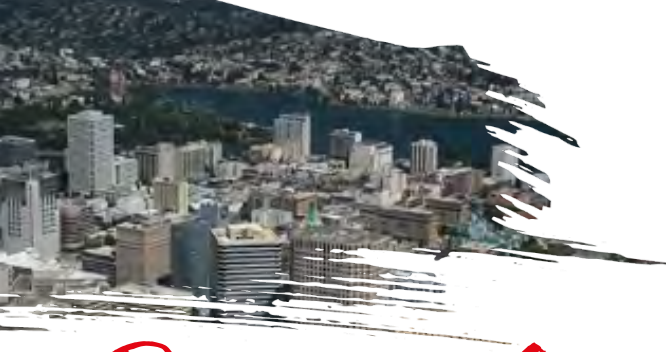
Forecast
(12 months)

Vacancy ∨

Rents ∧

TEUs ∧

For more information, contact: Ignatius Armenia | ignatius.armenia@am.jll.com



Port of Oakland

Logistics demand accelerating industrial warehouse absorption

Capital investments

- The Cool Port project is currently under construction, which will add 370,000 square feet of cold storage space to the port. The Port of Oakland finalized a long-term ground lease with Lineage Logistics/Dreisbach Enterprises for the operation of the temperature-controlled logistics facility.
- The port, in partnership with SSA Marine, is raising the height of cranes 27 feet at the Oakland International Container Terminal (OITC). The $14 million project is part of an overall effort to strengthen the Port of Oakland's competitiveness by providing the infrastructure to accommodate bigger vessels.
- The Port of Oakland Commissioners approved a 20-year contract to purchase 11,000 MWh annually, 35.0 percent of the renewable energy it needs by 2030 to meet California's requirements under Senate Bill 350.

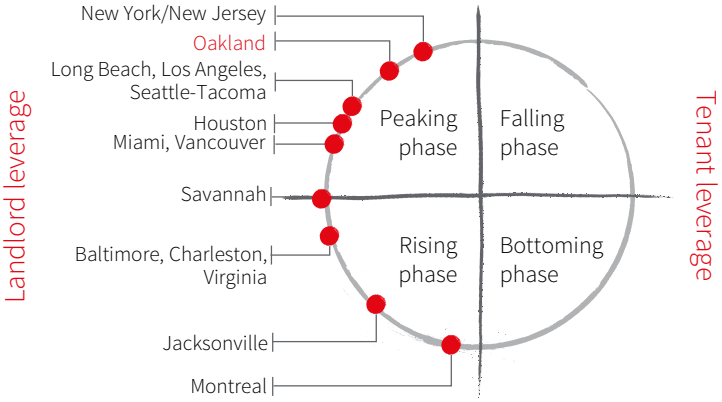
Market conditions

- The immediate industrial market consists of approximately 85.7 million square feet of product, with vacancy sitting at 4.2 percent.
- As available space tightens and demand remains strong, rental rates continue to increase and are currently averaging $9.50 (NNN).
- Tenant demand is at a record high with 6.5 million square feet of active tenant requirements targeting the East Bay, where the logistics and distribution industry is the most active in leasing activity.

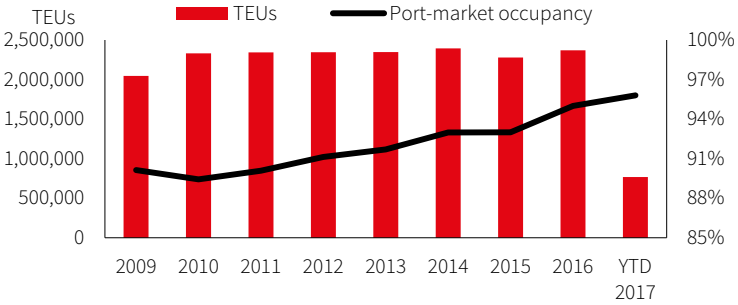
Development

- Centerpoint Properties' Seaport Logistics Complex and Prologis's Oakland Trade and Logistics Center will add +/-1.0 million square feet and 677,800 square feet of new warehouse space, respectively. The redevelopment of the Oakland Army Base will provide additional port-centric industrial product and a new intermodal terminal by mid-2017.

Seaport property clock



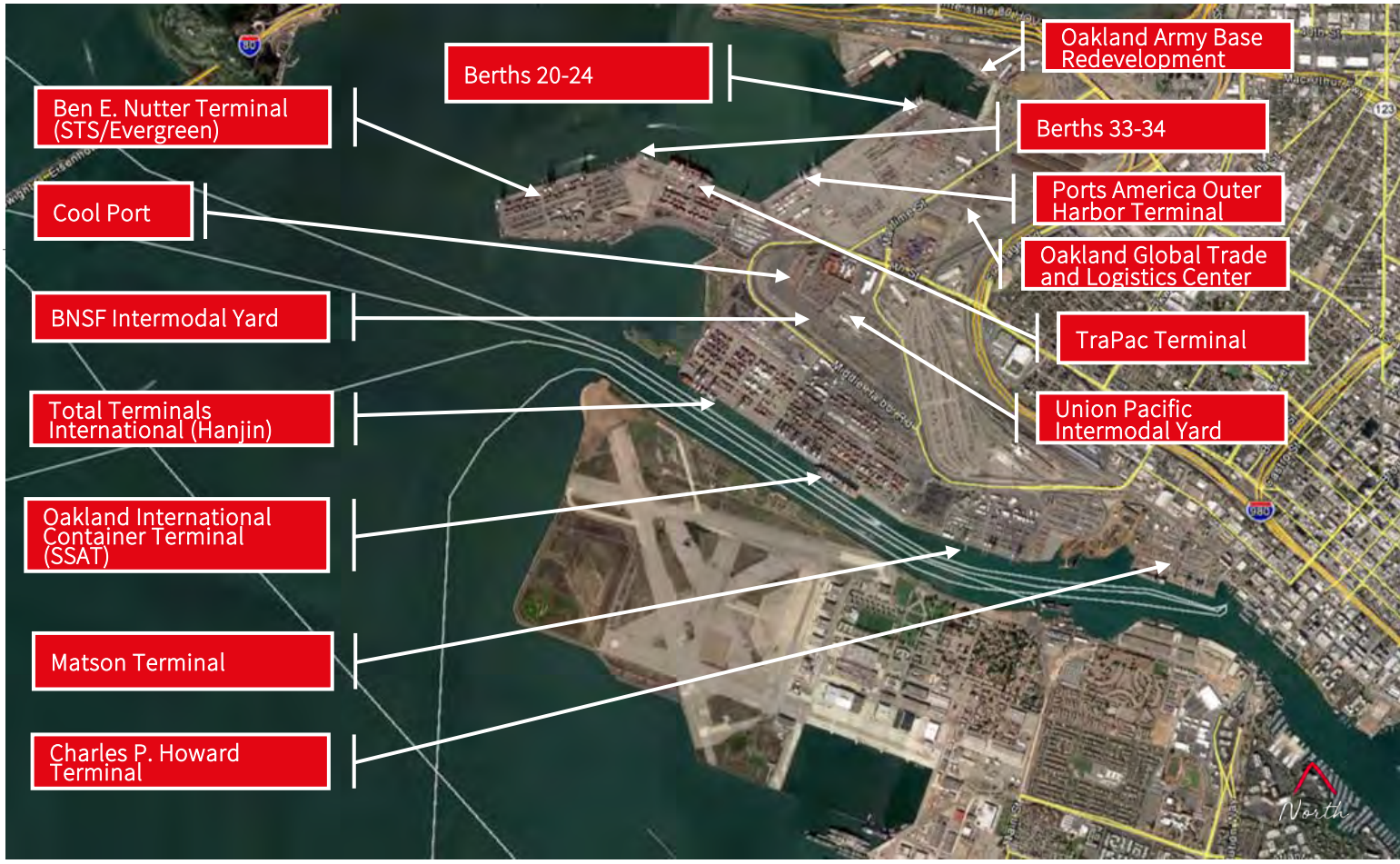
TEUs vs. port-market occupancy



Port vital facts

YTD 2017 volume:	767,176 TEUs (as of March 2017)
2016 volume:	2,369,631 TEUs
Main routes:	Asia Pacific
Trading partners:	China, Taiwan, Japan
Cranes/Post-Panamax cranes:	33 | 30
Current channel depth:	50 feet (at MLW)
Berths:	18 (deep-water)
Container terminals:	8 | Ports America, STS/Evergreen, SSAT
Post-Panamax ready:	Yes
Class I Rail Operators:	BNSF, Union Pacific

Port of Oakland



Real estate indicators

Immediate market size (m.s.f.)	Current vacancy	Total availability	Average asking rents (NNN)
85.7	4.2%	5.0%	$9.50

2016 net absorption (m.s.f.)	YTD 2017 net absorption (m.s.f.)	YTD 2017 absorption as % of stock	Under construction (m.s.f.)
1.0	-0.4	-0.3%	0.3

Forecast
(12 months)

Vacancy ^

Rents >

TEUs ^

For more information, contact: Crystal Tseng | crystal.tseng@am.jll.com

Port of Savannah

Development is heating up in efforts to alleviate the supply crunch

Capital investments

- The dredging process for the Savannah Harbor Expansion Project, deepening the Savannah River from 42 to 49 feet, is nearly 60 percent complete. Completion is expected by 2021.
- In May, the Port of Savannah welcomed the COSCO *Development*, the largest ship to call on the U.S. East Coast with a capacity of 13,092 TEUs. This introduces a shift to larger, more cost-effective ships made possible by SHEP and the Panama Canal expansion.

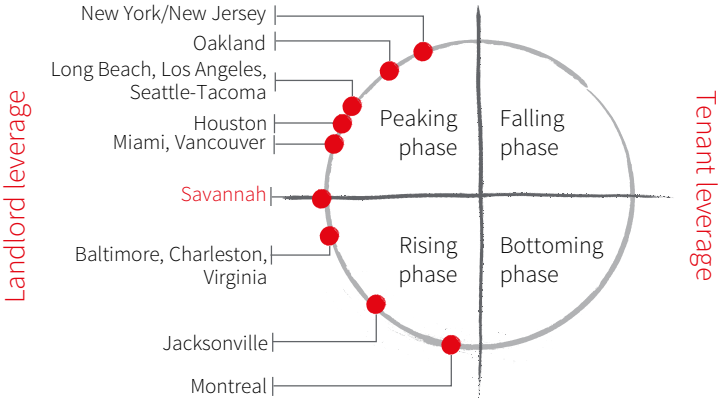
Market conditions

- Savannah's market-wide vacancy has slightly increased from last year to 4.0 percent.
- Leasing volume has slowly declined over the past few years, as a lack of available supply has constrained tenant movement. Securing space, especially in the newly delivered Class A buildings, is becoming highly competitive and companies have to act fast to secure their space. The average time an availability will stay on the market has dropped to seven months, down six months from this time last year.

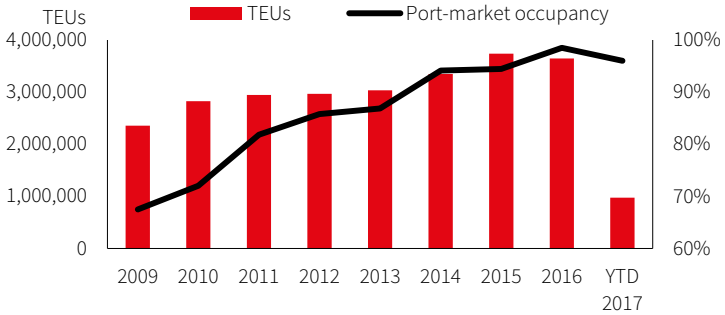
Development

- The development pipeline is strong, with nearly 1.4 million square feet of new supply delivered in 2016 and another 1.4 million square feet currently under construction. In the first quarter, a 499,200-square-foot speculative warehouse delivered in Interstate 95 Logistics Center and was leased the month after delivery. Shaw Industries recently leased a 1.0 million-square-foot build-to-suit in CRG's Northport Commerce Center. In the Greater Savannah market, development shows no sign of slowing down, with over 5 million square feet planned in the pipeline.

Seaport property clock



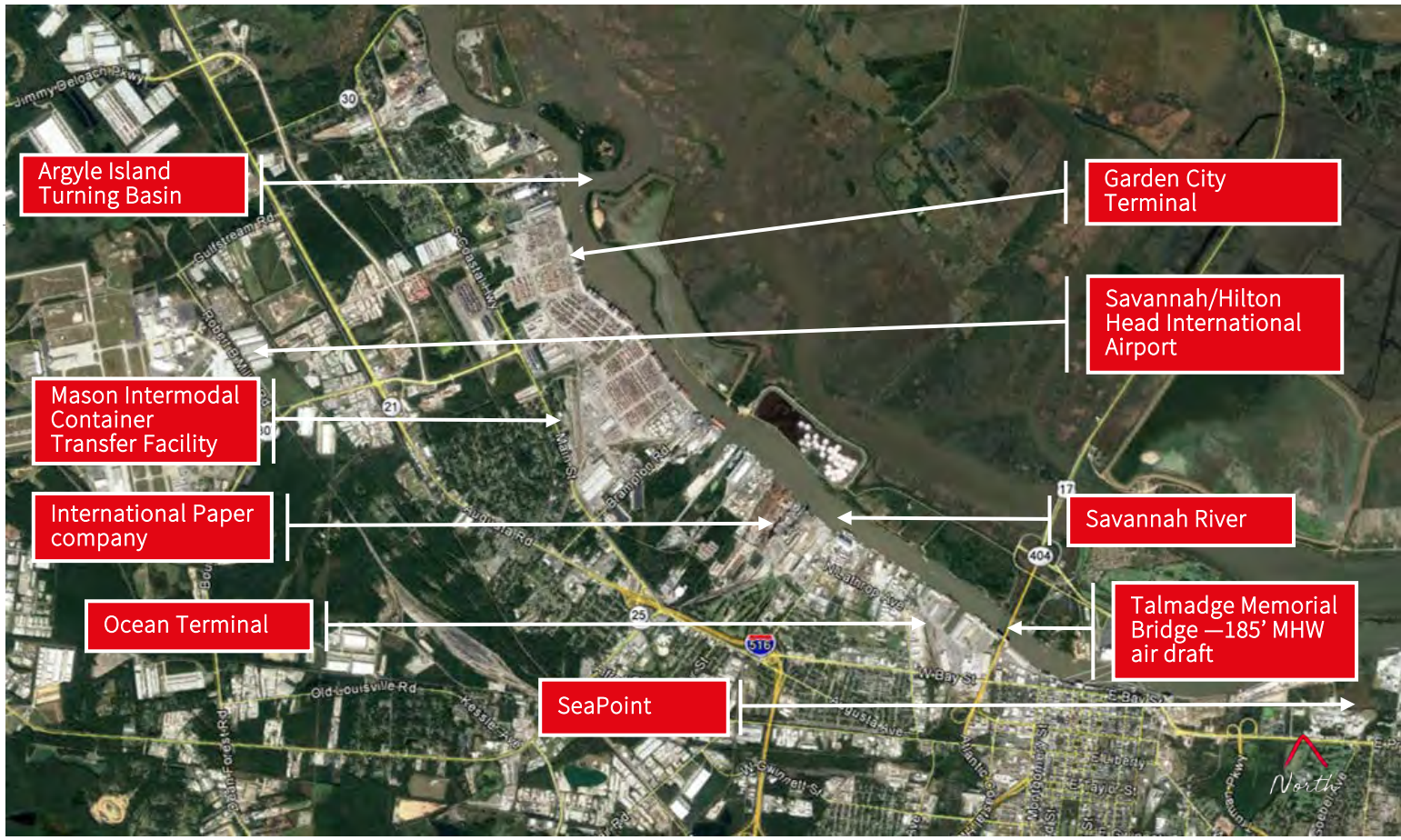
TEUs vs. port-market occupancy



Port vital facts

YTD 2017 volume:	973,780 TEUs (as of March 2017)
2016 volume:	3,644,521 TEUs
Main routes:	Savannah River
Trading partners:	NE Asia, Mediterranean, SE Asia, N Europe
Cranes/Post-Panamax cranes:	33 | 26
Current channel depth:	42 feet (at MLW)
Berths:	18
Container terminals:	2 | Garden City & Ocean
Post-Panamax ready:	No (2018 is the estimate)
Class I Rail Operators:	CSX Transportation, Norfolk Southern

Port of Savannah



Real estate indicators

Immediate market size (m.s.f.)	Current vacancy	Total availability	Average asking rents (NNN)
36.2	4.0%	9.0%	$4.12

2016 net absorption (m.s.f.)	YTD 2017 net absorption (m.s.f.)	YTD 2017 absorption as % of stock	Under construction (m.s.f.)
1.3	0.6	1.8%	1.4

Forecast
(12 months)

Vacancy ^

Rents >

TEUs ^

For more information, contact: Harriet Westlake | harriet.westlake@am.jll.com

Port of Seattle-Tacoma

NWSA activity continues to increase, with container volumes up 10 percent year-over-year

Capital investments

- Mediterranean Shipping Company acquired 80 percent interest in Total Terminals International (TTI), which operates Terminal 46 at the Port of Seattle. Hyundai Merchant Marine owns the other 20 percent of TTI.
- Terminal 5 and Pier 4 are currently being reconfigured to be able to handle the larger ships entering the trans-Pacific trades.
- NW Seaport Alliance plans to invest $141 million in upgrading Husky Terminal in the South Harbor. This enhancement will allow for two 18,000-TEU ships to dock at the same time.

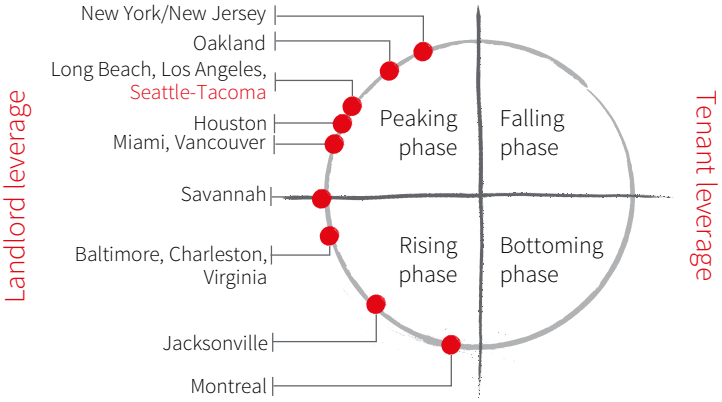
Market conditions

- Industrial vacancy in the immediate vicinity of the port is 3.3 percent. Both Kent Valley and Pierce County continue to experience strong occupancy gains, with low vacancy and strong tenant demand.
- Strong leasing velocity continues, and the appetite among big-box users for quality space in close proximity to Seattle will drive more development activity.
- Supply is limited, and demand is incredibly strong. As such, vacancy will continue to decline, and prospective tenants will compete for quality space.
- Rents have been increasing for the past 24 months, and landlords continue to have leverage on terms and rates.

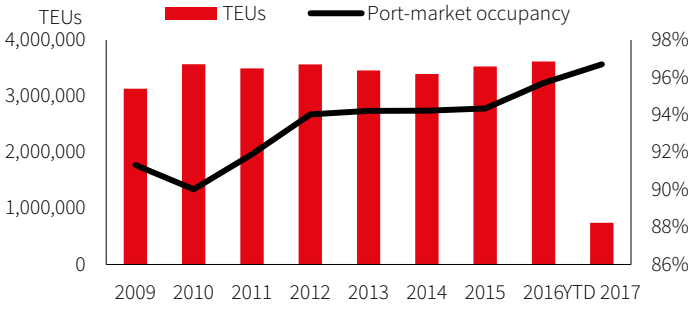
Development

- Prologis's Park Tacoma, two buildings totaling 994,000 near the Port of Tacoma and a 590,000-square-foot three-story warehouse near the Port of Seattle are currently under construction.
- Both IPT and DCT broke ground on 1.0 million-square-foot projects in Tacoma that are expected to deliver by the first quarter of 2018.

Seaport property clock



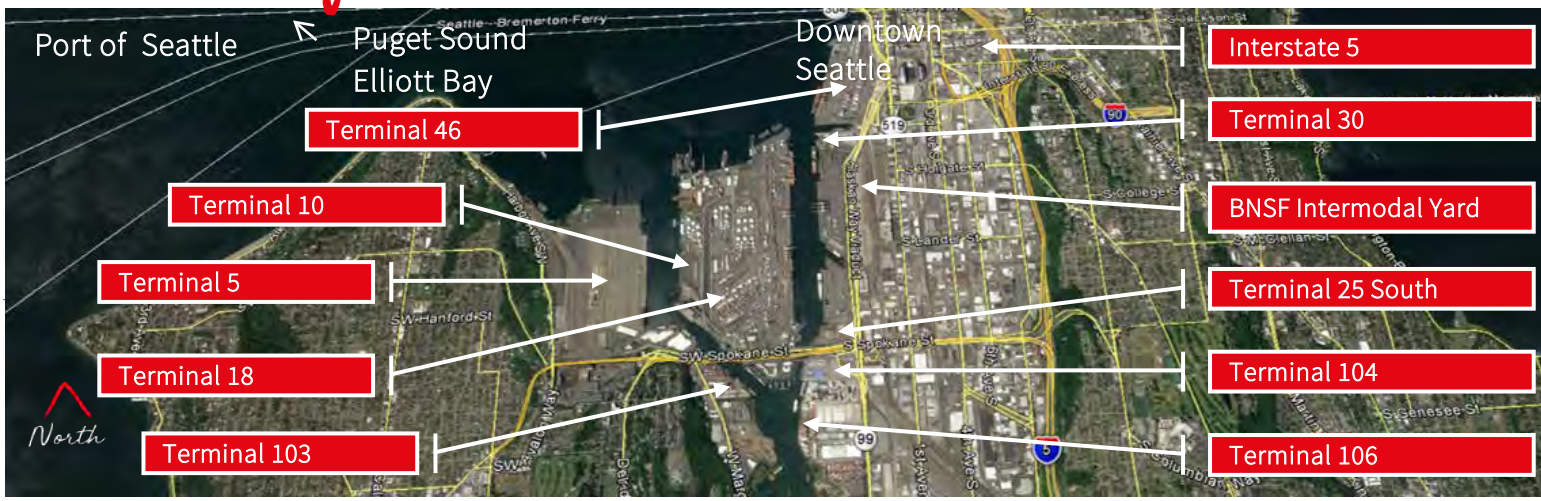
TEUs vs. port-market occupancy



Port vital facts

YTD 2017 volume:	740,764 TEUs (as of March 2017)
2016 volume:	3,615,752 TEUs
Main routes:	Puget Sound
Trading partners:	China, Japan, Korea, Taiwan, Vietnam, Canada
Cranes/Post-Panamax cranes:	47 | 43
Current channel depth:	50 feet (at MLLW)
Berths:	23
Container terminals:	10
Post-Panamax ready:	Yes
Class I Rail Operators:	BNSF, Union Pacific

Port of Seattle-Tacoma



Real estate indicators

Immediate market size (m.s.f.)	Current vacancy	Total availability	Average asking rents (NNN)
165.4	3.3%	5.1%	$6.74

2016 net absorption (m.s.f.)	YTD 2017 net absorption (m.s.f.)	YTD 2017 absorption as % of stock	Under construction (m.s.f.)
4.4	1.1	0.6%	5.7

Forecast
(12 months)

Vacancy ∨

Rents ∧

TEUs ∧

For more information, contact: Yeon Soo Lee | yeonsoo.lee@am.jll.com

Port of Vancouver

Logistics space in proximity to the port continues to be in extremely high demand

Capital investments

- The proposed Centerm Expansion Project is designed to increase TEU volume for the Centerm container terminal and to provide improved access to the south shore area. The container terminal can presently handle 900,000 TEUs annually, but if the project is complete it could handle up to 1.5 million TEUs. Scheduled to be complete in 2020, the project is currently undergoing a review process.
- The Roberts Bank Terminal 2 Project is a proposed three-berth marine terminal at Roberts Bank in Delta. From an investment of over CDN$2 billion, the project would provide up to 2.4 million in additional TEU capacity. Currently being reviewed by an independent review panel, the project could start construction in 2018 and be complete within a five to six years timeline.

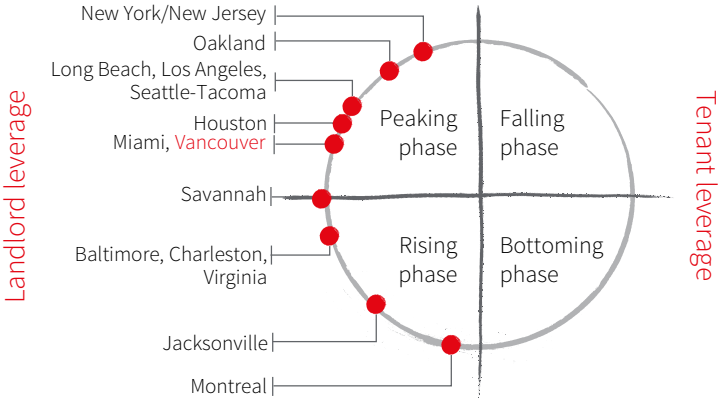
Market conditions

- The majority of containers going through the Port of Vancouver are handled at the DeltaPort terminal in Delta. Because of this, logistics space in the surrounding industrial market of Delta and along the South Fraser Perimeter Road are in high demand. In 2016 for example, the two largest lease deals in Delta were from logistics-based companies (SCI Logistics and CJ Corp.).
- There is currently no existing logistics space over 100,000 square feet available for lease in Delta..

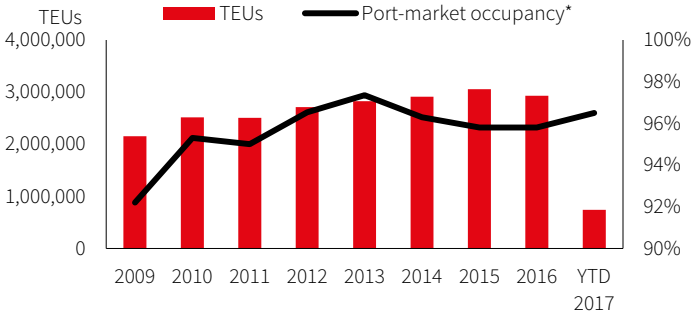
Development

- Adjacent to DeltaPort is the Deltaport Logistics Centre, a 300-acre parcel of land that is under development. The first phase includes three speculative buildings (totaling 1,089,580 square feet) being developed by GWL Realty Advisors.
- In Delta, GWL Realty Advisors is also building a distribution space on 9410 River Road that will consist of 289,000 square feet.

Seaport property clock



TEUs vs. port-market occupancy



Port vital facts

YTD 2017 volume:	704,239 TEUs (as of March 2017)
2016 volume:	2,929,585 TEUs
Main routes:	Burrard Inlet, Roberts Bank, Fraser River
Trading partners:	China, Hong Kong, Japan, Korea, Singapore, Taiwan, Indonesia, Brazil, India, United States
Cranes/Post-Panamax cranes:	26 | 20
Current channel depth:	65+ feet
Berths:	60
Container terminals:	4 | Centerm, GCT Deltaport, Fraser Surrey Docks, Vanterm
Post-Panamax ready:	Yes
Class I Rail Operators:	Canadian National, Canadian Pacific, BNSF

Port of Vancouver

Real estate indicators

Immediate market size (m.s.f.)	Current vacancy	Total availability	Average asking rents (NNN)
89.9	3.5%	3.3%	$8.76

2016 net absorption (m.s.f.)	YTD 2017 net absorption (m.s.f.)	YTD 2017 absorption as % of stock	Under construction (m.s.f.)
1.9	0.2	0.3%	0.9

Forecast
(12 months)

Vacancy ∨

Rents ∧

TEUs ∧

For more information, contact: Ben Wedge | ben.wedge@am.jll.com

Port of Virginia

Very large users will have to build, but spec development welcomed last year is slow to lease

Capital investments

- The Virginia Port Authority (VPA) has begun the first phase of a three-year expansion program at Virginia International Gateway (VIG) and Norfolk International Terminals (NIT), which will add capacity to handle 1,000,000 more containers annually—a 40 percent increase.
- State-issued bonds provide $350 million to improve NIT, while VPA's lease of VIG from Alinda Capital Partners allows $320 million of work there. Public-private partnerships are funding transportation improvements that will increase both road and rail capacity between Northern and Midwestern markets and Virginia's ports.

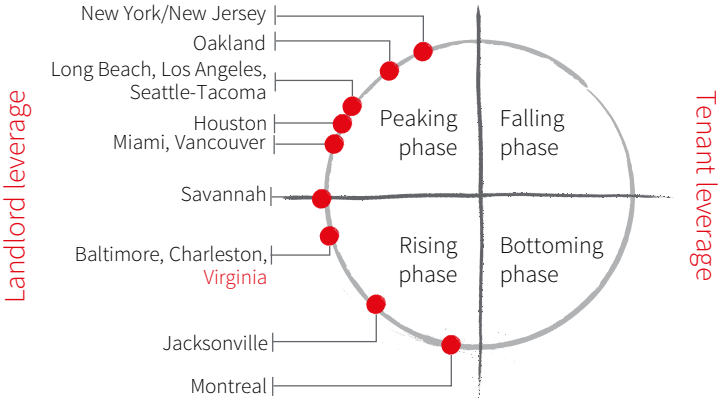
Market conditions

- Users seeking blocks in excess of 600,000 square feet are considering Hampton Roads alongside Savannah, Charleston and the inland cities they serve for logistics needs, but with no large blocks, their options are restricted to build-to-suits.
- Low inventory and record-breaking port activity convinced two developers to construct 500,000 square feet of Class A spec product delivering later this year, but both projects have yet to see a signed lease.
- Certification as an exchange port, effective last September, further strengthens the port's appeal to coffee producers and shippers, with a 173,000-square-foot build-to-suit for Peet's about to break ground.

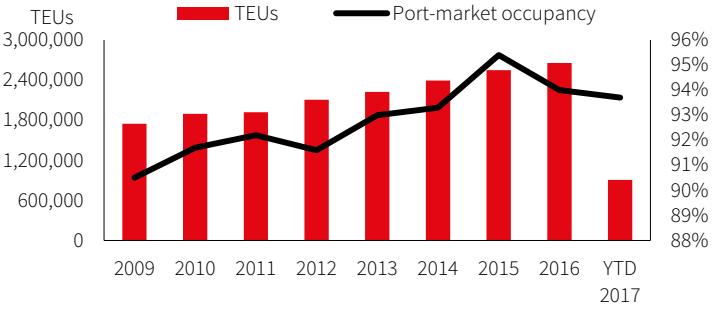
Development

- Pannatoni entered the market by purchasing an existing warehouse and constructing a spec project in Suffolk. CenterPoint's Suffolk pad-ready sites offer the most opportunities for build-to-suit, but other landowners have put forth proposals with similar response times as well.

Seaport property clock



TEUs vs. port-market occupancy



Port vital facts

YTD 2017 volume:	906,236 TEUs (as of April 2017)
2016 volume:	2,655,705 TEUs
Main routes:	James River, Chesapeake Bay, Atlantic Ocean
Trading partners:	Northern Europe, Northeast Asia, South America, Mediterranean
Cranes/Post-Panamax cranes:	30 | 27
Current channel depth:	50 feet (at MLW), authorized to 55 feet
Berths:	7
Container terminals:	4 | NIT, NNMT, APMT, PMT
Post-Panamax ready:	Yes
Class I Rail Operators:	CSX Transportation, Norfolk Southern

Port of Virginia

Real estate indicators

Immediate market size (m.s.f.)	Current vacancy	Total availability	Average asking rents (NNN)
35.7	6.3%	7.7%	$4.67

2016 net absorption (m.s.f.)	YTD 2017 net absorption (m.s.f.)	YTD 2017 absorption as % of stock	Under construction (m.s.f.)
-0.6	0.2	0.5%	0.3

Forecast
(12 months)

Vacancy >

Rents ^

TEUs ^

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Ports to watch

Port of Altamira

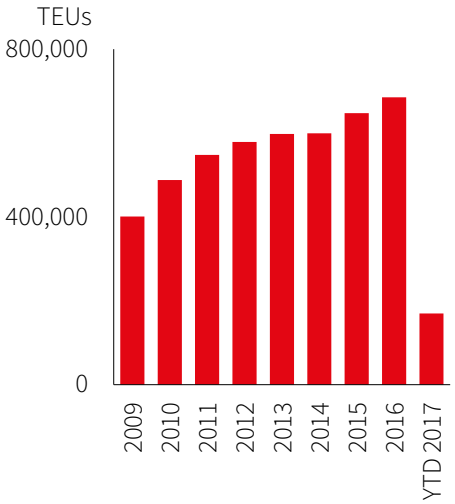
Port vital facts

Cranes/ Post-Panamax cranes:	23 I 4
Current channel depth:	40+ feet
Berths:	17 in operation/ potential for 90 in future
Container terminals:	2 I Altamira Terminal Portuaria, Infrastructura Portuaria Mexicana S.A. DE C.V.,

Market overview

- This northernmost Gulf Coast port of Mexico, Port of Altamira, was recognized as the fastest-growing port in North America in 2015 by the *Journal of Commerce*, in combined outbound and inbound container trade growth.
- In the last two years, the total trade volumes at Port of Altamira consistently crossed the 600,000 TEUs mark, showing an annual average increase of 6.9 percent. In 2015 the port volume grew by over 8.0 percent.
- 11 shipping lines are servicing the port. North America, Europe and South America are the biggest trade partners, with more than 50.0 percent of trade traffic flowing through these continents.

TEUs annual volume



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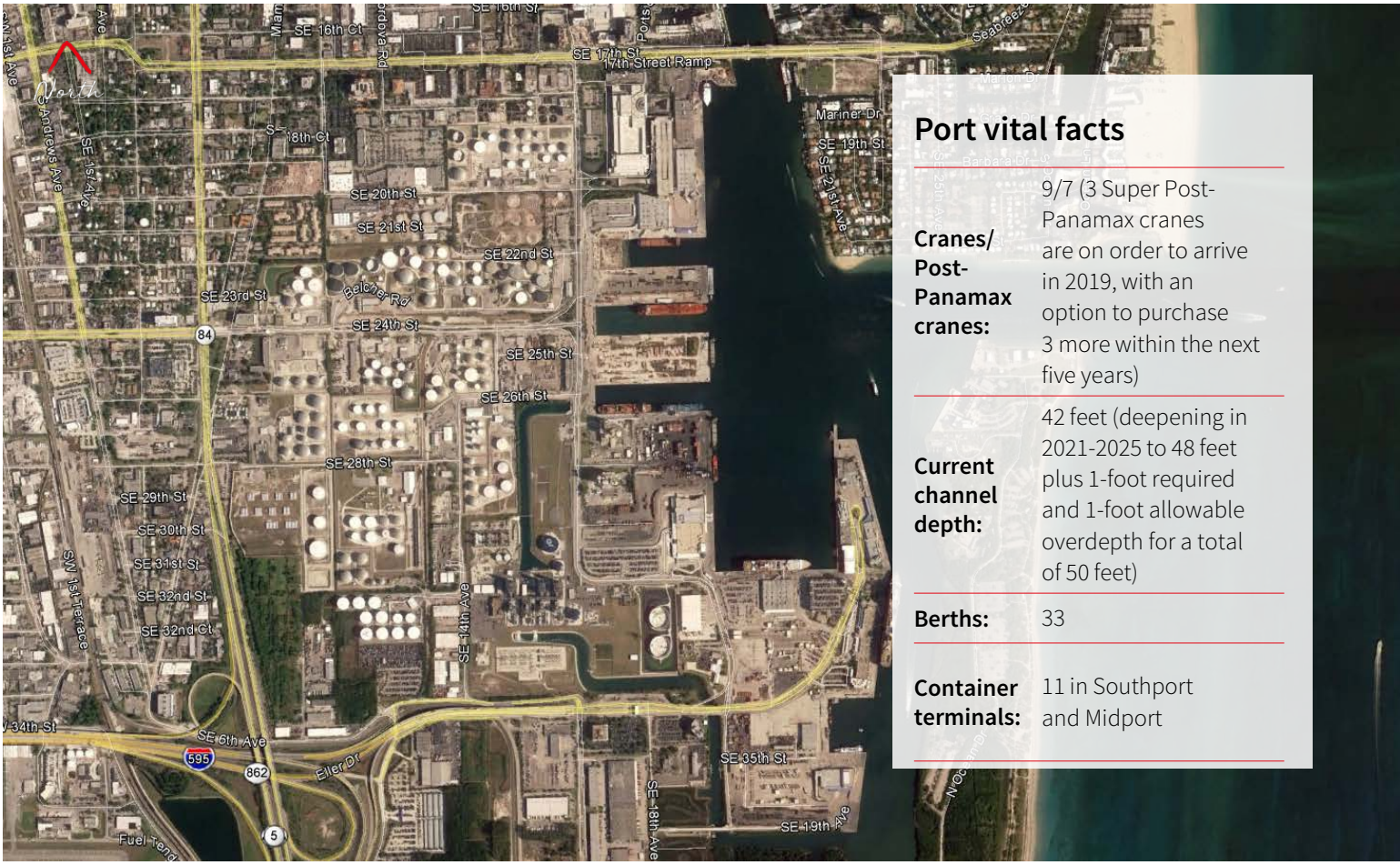
Port Everglades



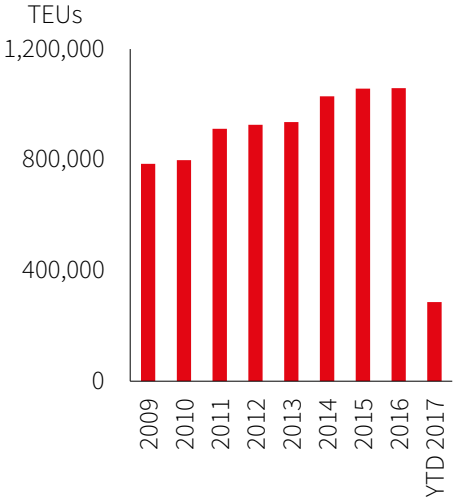
Port vital facts

Cranes/ Post-Panamax cranes:	9/7 (3 Super Post-Panamax cranes are on order to arrive in 2019, with an option to purchase 3 more within the next five years)
Current channel depth:	42 feet (deepening in 2021-2025 to 48 feet plus 1-foot required and 1-foot allowable overdepth for a total of 50 feet)
Berths:	33
Container terminals:	11 in Southport and Midport

Market overview

- A new, state-of-the-art Logistics Center will be built through a public-private partnership on a prime 16.7-acre site adjacent to the port's containerized cargo terminals. The new location, directly west of the current site, will have Foreign-Trade Zone status, and is ideally situated within the port with direct access to the interstate highway system and the Florida East Coast Railway's 43-acre Intermodal Container Transfer Facility (ICTF). Estimated completion is April 2019.
- The immediate market has seen net rents increase by more than 4.0 percent quarter-over-quarter to $8.21 per square feet, and overall vacancy has decreased by 30 basis points during the same time span. Additionally, TEU volume in the port has increased by almost 35.0 percent in the last seven years.

TEUs annual volume



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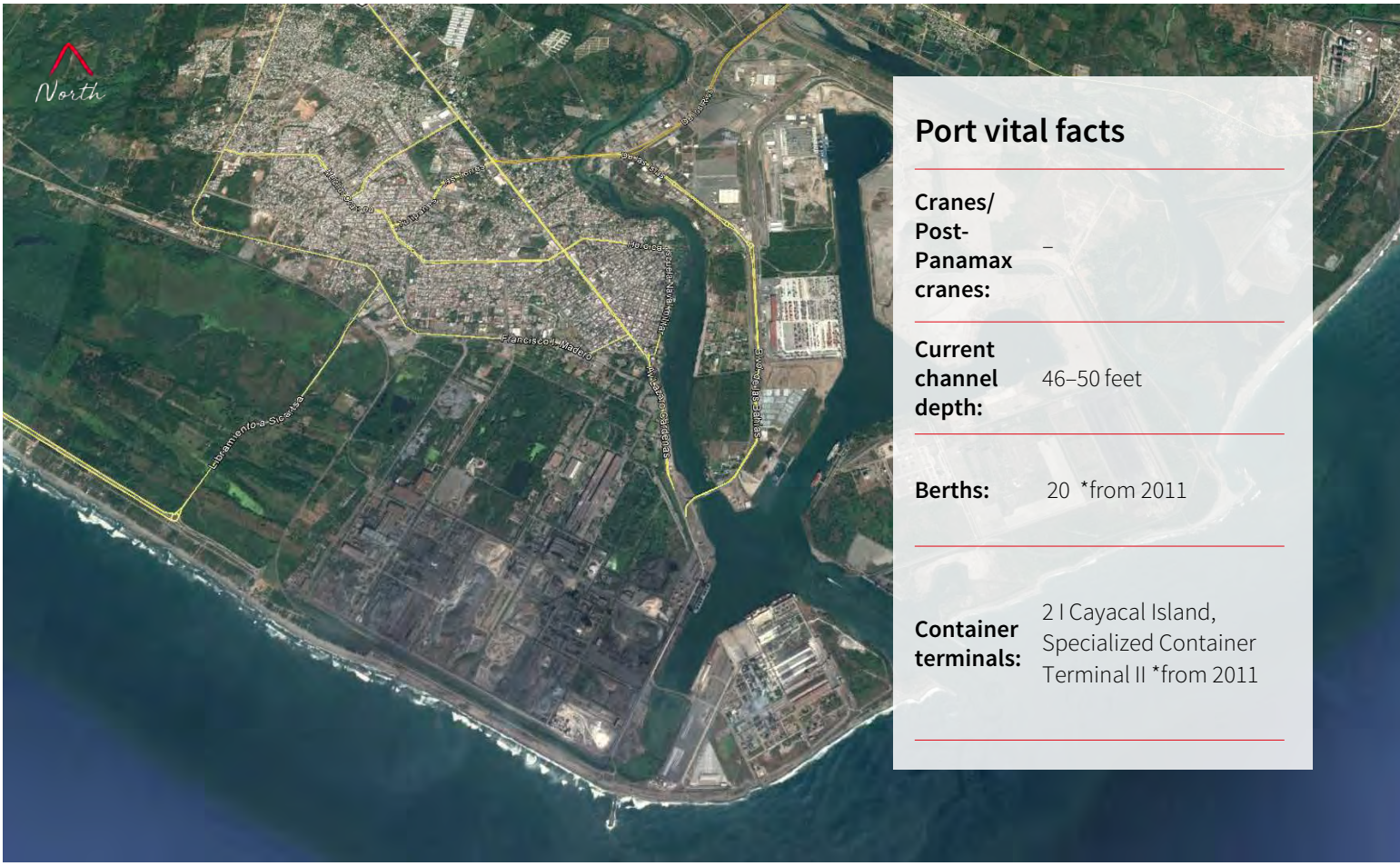
Port of Lazaro Cardenas



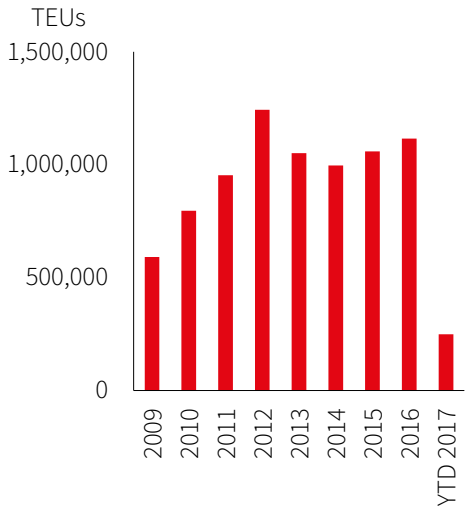
Port vital facts

Cranes/ Post-Panamax cranes:	–
Current channel depth:	46–50 feet
Berths:	20 *from 2011
Container terminals:	2 I Cayacal Island, Specialized Container Terminal II *from 2011

Market overview

- Located 200 miles south of Port Manzanillo on the Pacific Coast, the Port of Lazaro Cardenas (like the Port of Manzanillo) primary gateway market connecting Mexico to international trade. The port is the second busiest port in the country and is servicing over 26 international ocean carriers.
- Compared to the Gulf Coast ports, the Pacific Coast ports have responded well to Trans-Pacific trade. In April 2017, a new $525 million, semi-automated terminal operated by APM Terminals was launched at Port of Lazaro Cardenas. Overall, APM has invested $900 million in the Lazaro Cardenas terminal. The terminal is expected to have links to the U.S. rail network via intermodal rail.

TEUs annual volume



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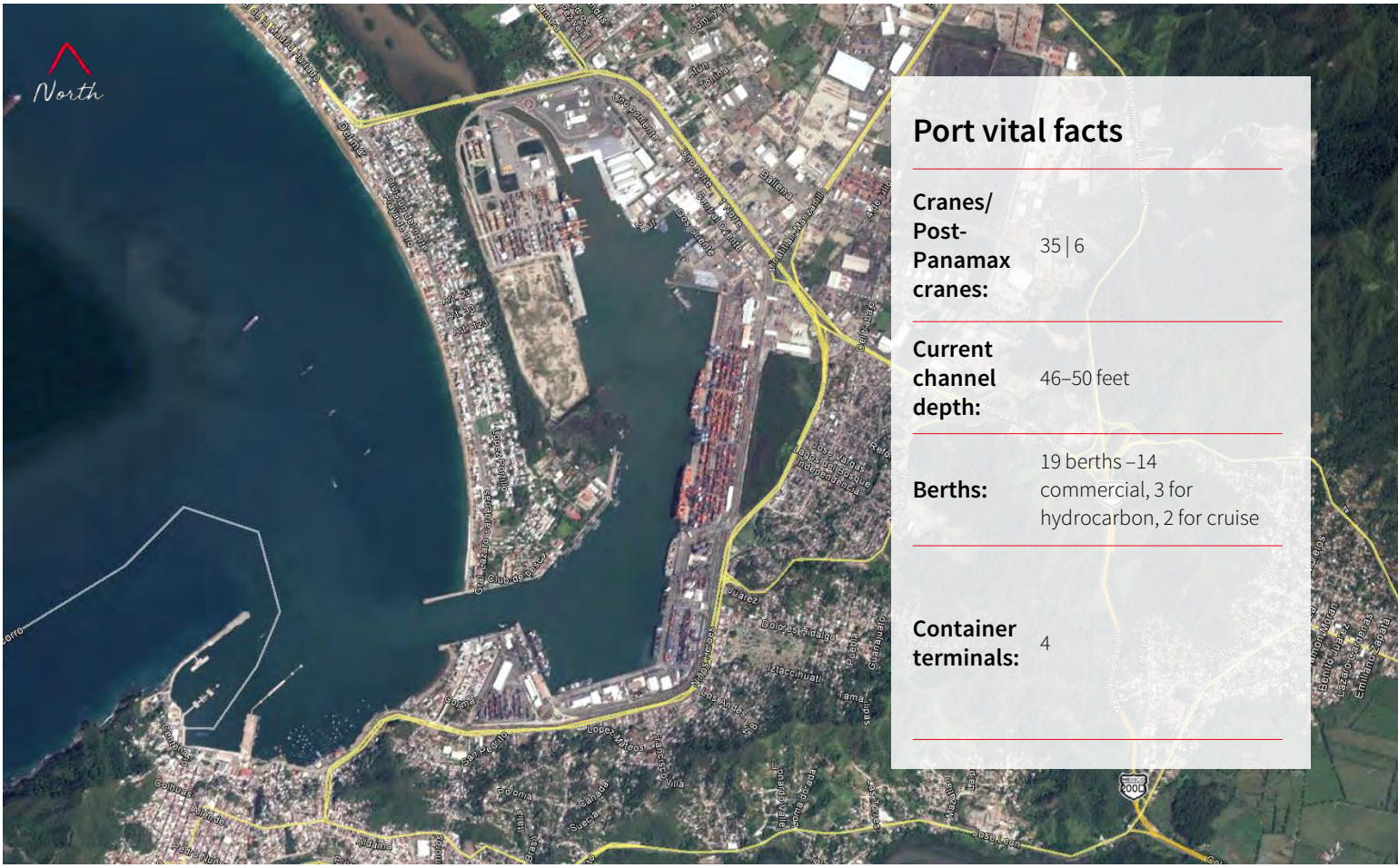
Port of Manzanillo



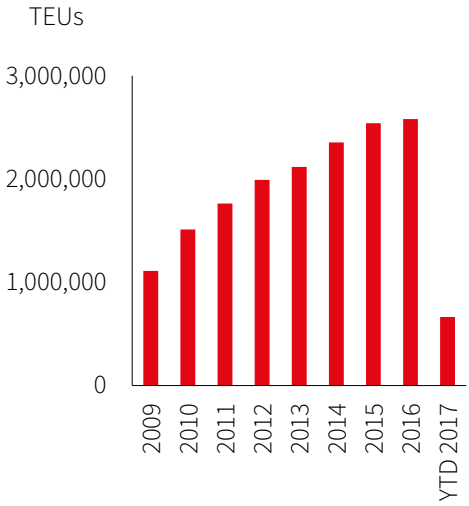
Port vital facts

Cranes/ Post-Panamax cranes:	35 | 6
Current channel depth:	46–50 feet
Berths:	19 berths –14 commercial, 3 for hydrocarbon, 2 for cruise
Container terminals:	4

Market overview

- Port of Manzanillo is Mexico's largest and busiest container port. In capital developments, the port is planning on a new rail tunnel, which will have 24-hour access to the port and is expected to be open by year-end 2017. The new rail tunnel, once completed, is anticipated to double the container volume flow of cargo coming through the rail.
- In addition to the tunnel, Contecon Manzanillo is investing in the expansion of its terminal. The project is expected to be completed in three phases, with the final phase concluding in 2025, which is expected to increase the port's capacity to 4 million TEUs.
- Another notable development project is at the SSA Terminal. SSA Mexico is spending $50 million to expand capacity by 30.0 percent. The terminal will add a new berth and increase the terminal area to 82 acres.

TEUs annual volume



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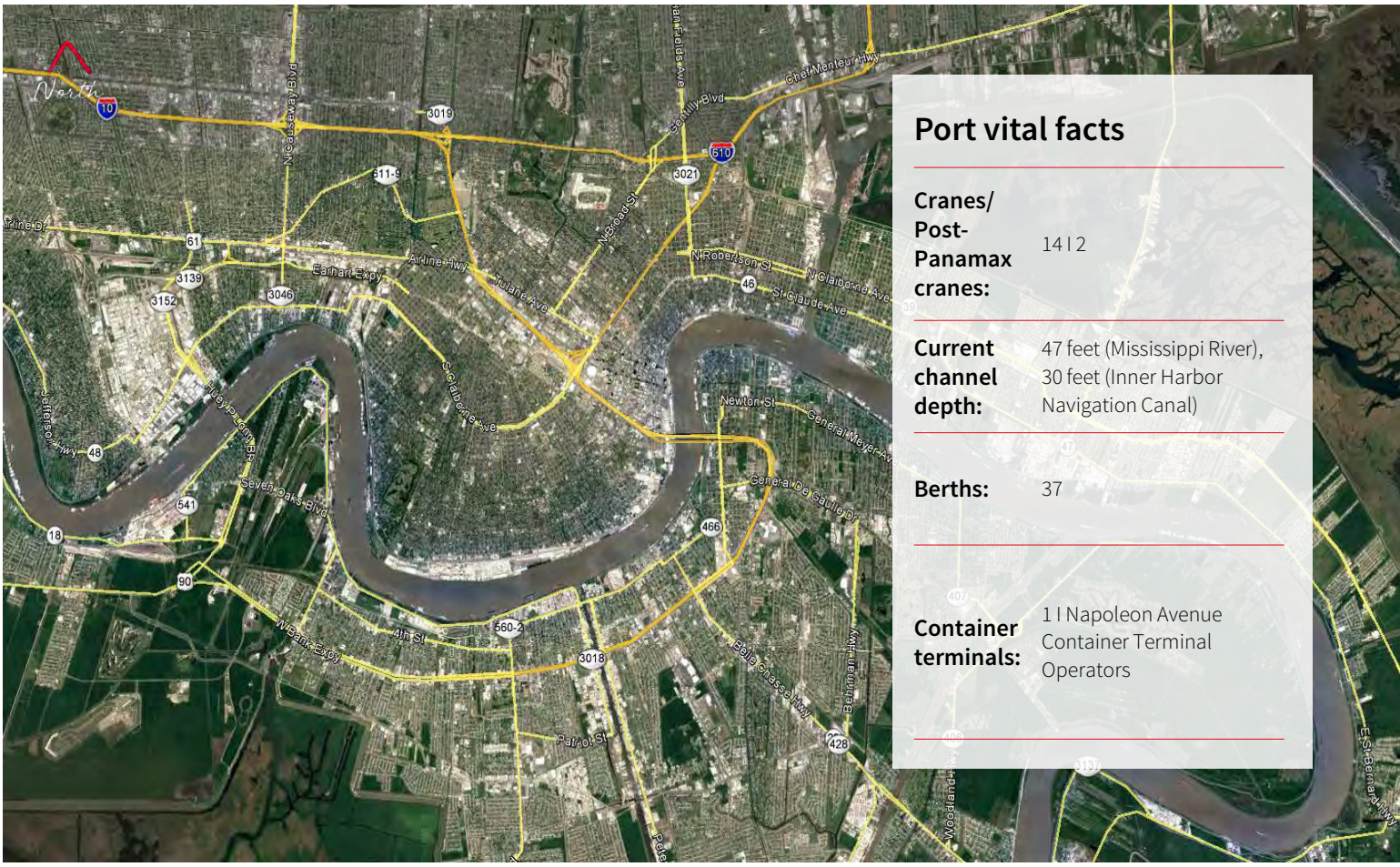
Port of New Orleans



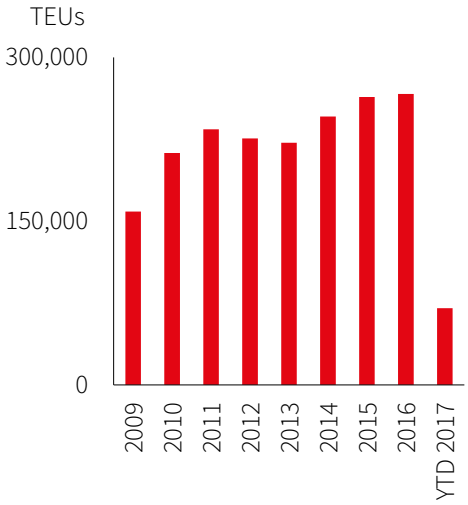
Port vital facts

Cranes/ Post-Panamax cranes:	14 I 2
Current channel depth:	47 feet (Mississippi River), 30 feet (Inner Harbor Navigation Canal)
Berths:	37
Container terminals:	1 I Napoleon Avenue Container Terminal Operators

Market overview

- Port of New Orleans is one of the busiest ports in the Gulf Coast, especially with the Panama Canal expansion. Second in volume to Houston, the New Orleans port has invested millions in the new Mississippi River Intermodal Terminal, increasing capacity, efficiency and overall safety in cargo movement. The new terminal, opened in March 2016, is able to move 160,000 TEUs by rail annually.
- In the first quarter of 2017, CMA CGM started two new weekly direct container services from the port to South America and Asia. The large container carrier, CMA CGA, began relations in New Orleans in 2009 and already operates two other weekly services out of the port. In addition to the port's proficiency, the port has a 1,000-acre industrial park with multiple types of industrial properties that are available for lease.

TEUs annual volume



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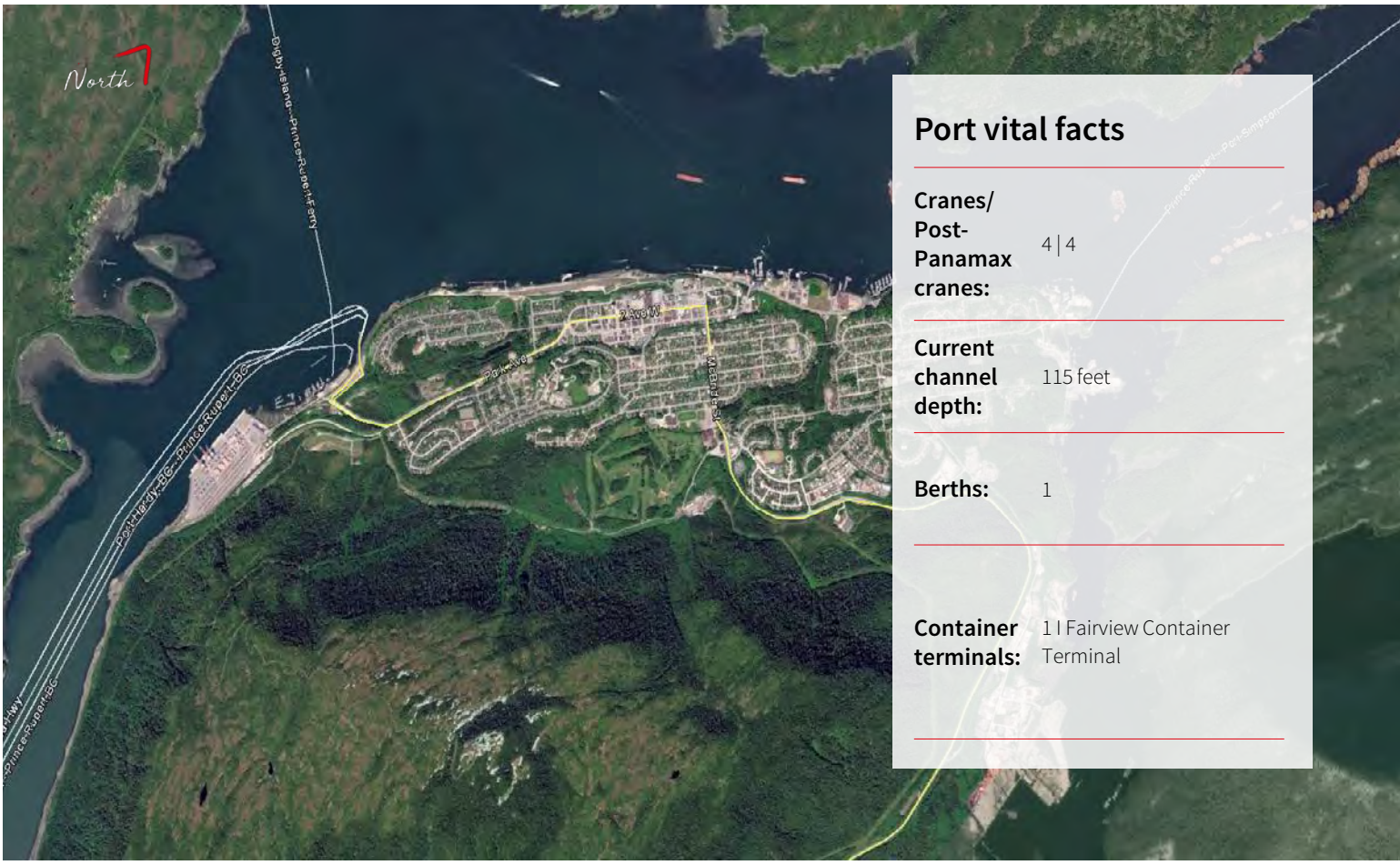
Port of Prince Rupert



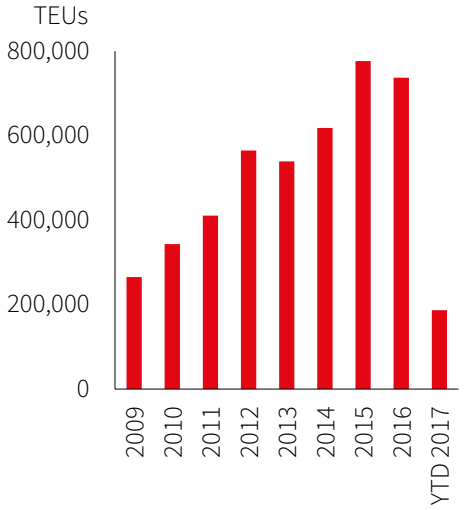
Port vital facts

Cranes/ Post-Panamax cranes:	4 | 4
Current channel depth:	115 feet
Berths:	1
Container terminals:	1 I Fairview Container Terminal

Market overview

- Prince Rupert is located on an island with surrounding mountainous topography, which puts extreme constraints on industrial land availability.
- Industrial inventory and new developments are characterized by typically being built-to-suit, with the majority being occupied by port users.
- Phase 1 of the Fairview Container Terminal is under construction and is expected to be complete by the third quarter of 2017. The expansion will add a second deep-water berth, four cranes, a large container handling yard and additional rail track. [1] This expansion will allow container handling capacity to increase from 850,000 to 1.3 million TEUs annually.

TEUs annual volume



[1] *Vancouver Sun*

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Port of Veracruz

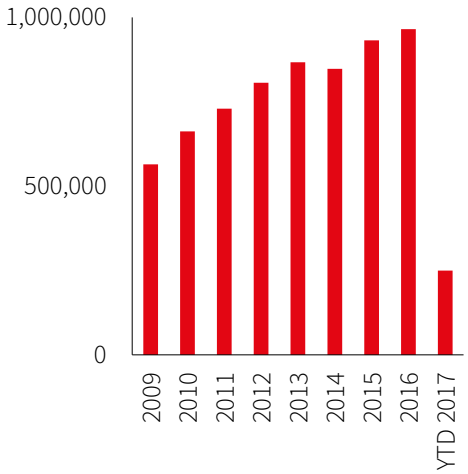
Port vital facts

Cranes/ Post-Panamax cranes:	–
Current channel depth:	31–35 feet
Berths:	11
Container terminals:	Yes

Market overview

- Mexico's third-largest port is located in the heart of the Veracruz city. It is one of the largest importers and exporters of cars among other Mexico ports. Based on the geography, both the Ports of Veracruz and Altamira are strategically positioned to serve the Mexico City industrial market. With a strong base of auto manufacturing companies located close to Mexico City, this makes the port well positioned to succeed in the Gulf Coast.
- The port is deepening the access channel and the turning basin, with plans to build five new terminals on the reclaimed land. This project is expected to be completed by mid-2018. The port expects to increase the capacity of the port by five times to 900,000 TEUs by 2030.

TEUs annual volume



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