Florida Freight Advisory Committee Meeting

October 19, 2021



Call to Order



Roll Call

Name	Organization Represented	
John Abrams	Loves Travel Stops	
Joe Arbona	Genesee Wyoming Railroad	
Aubrey Brown	CSX	
Gene Conrad	Lakeland Linder International Airport	
William Crowe	Canaveral Port Authority	
Jaha Cummings	City of Punta Gorda	
Kevin Daugherty	Brooksville – Tampa Bay Regional Airport	
Laura DiBella	Florida Harbor Pilots Association	
John Dohm	Florida TransAtlantic Holdings	
Lauren Farrell	Space Florida	
Patrick Feeney	Kenan Advantage Group	
Bruce Lyon	Winter Haven Economic Development Council	
Terri Malone	Escambia County	
Robert Midgett	Walmart	
Carol Obermeier	Southwest Florida International Airport (RSW)	
Seckin Ozkul	University of South Florida (USF)	
Samuel Pearson	UPS	
Nick Primrose	Jacksonville Port Authority (JAXPORT)	
Mike Rubin	Florida Ports Council	
Tori Rumenik	Florida Fruit and Vegetable Association	
Andre Samuel	Enterprise Florida Inc	
Gregory Stuart	Broward Metropolitan Planning Organization	
Alexander Trauger	MetroPlan Orlando	
Kevin Walford	Miami-Dade Transportation Planning Organization	
Barbara Wilson	RailUSA, LLC	
Desiree Ann Wood	REAL Women in Trucking, Inc.	



Approval of Meeting Minutes



Welcome & Housekeeping

Theme: Inspiring Innovation

- Using CAV Technology in Freight Projects
- Changes to the PHFS
- Designing Flexibility for Evolving Technology into Infrastructure
- Using Optimization to Enhance Freight Efficiency





Using CAV Technology in Freight Projects

October 19, 2021

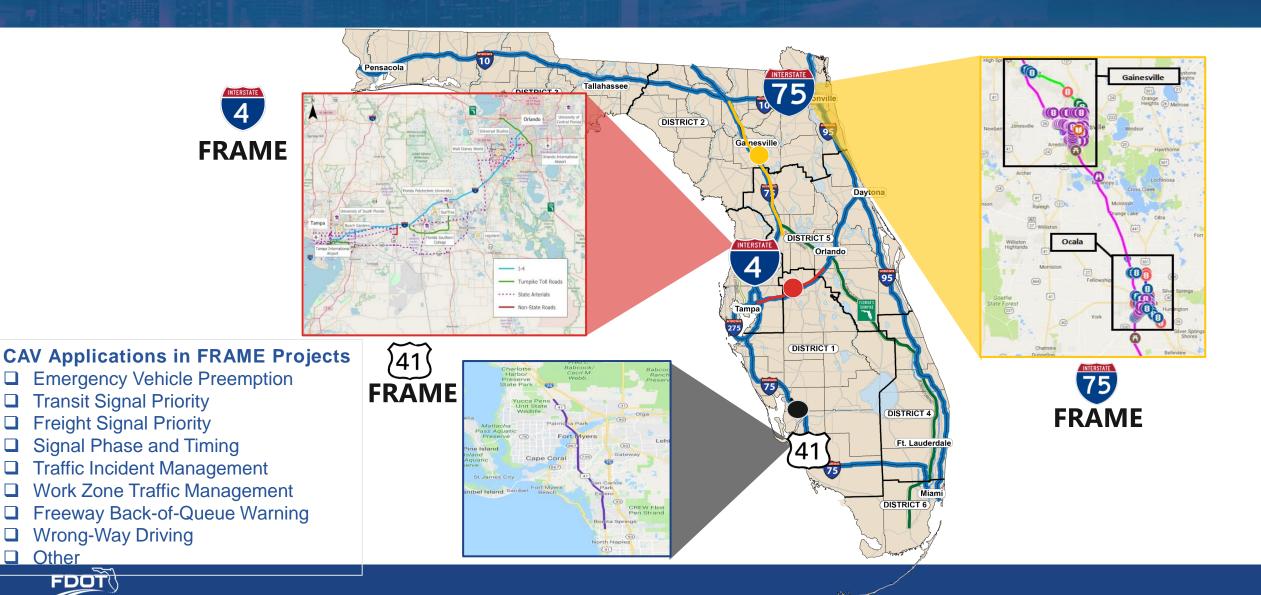
Today's Topics

1. Florida's Regional Advanced Mobility Elements (FRAME)

- 2. CAV Applications in Freight Safety and Mobility
- 3. Vehicle-to-Everything (V2X) Data Exchange Platform (DEP)



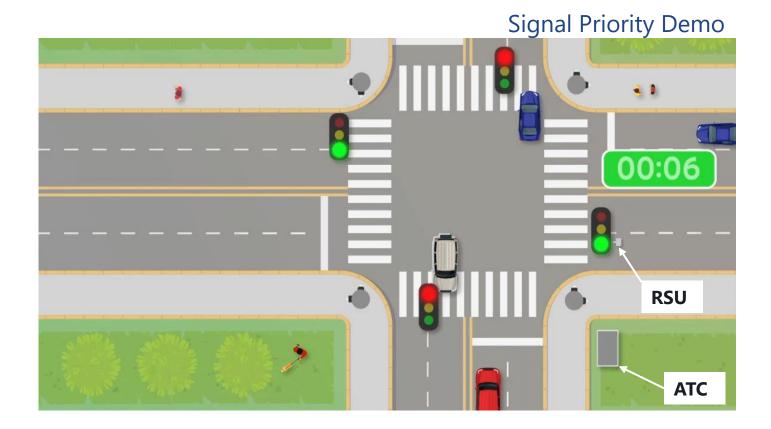
Florida's Regional Advanced Mobility Elements



Other

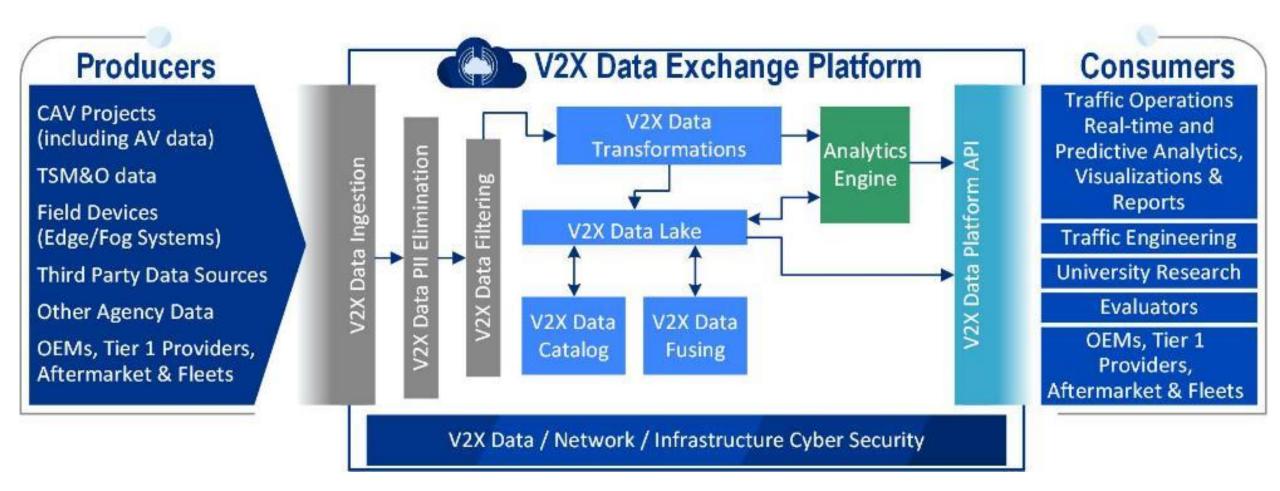
CAV Applications for Freight

- Freight Signal Priority
 - Travel Time Reliability
 - Reduce delays at intersections
 - Enhance safety
- Outreach and Partnership
 - Florida Trucking Associations
 - Commercial Vehicle Forum
- <u>Targeted Carriers</u>
 - Evaluation: MCSAW data
 - Local versus long haul





Vehicle-to-Everything Data Exchange Platform



Source: FDOT Vehicle-to-Everything (V2X) Data Exchange Platform (DOT-ITN-20-9104-SJ), vendor presentation







REMEMBER: TRUCKS HAVE HUGE BLIND SPOTS, GIVE THEM EXTRA SPACE

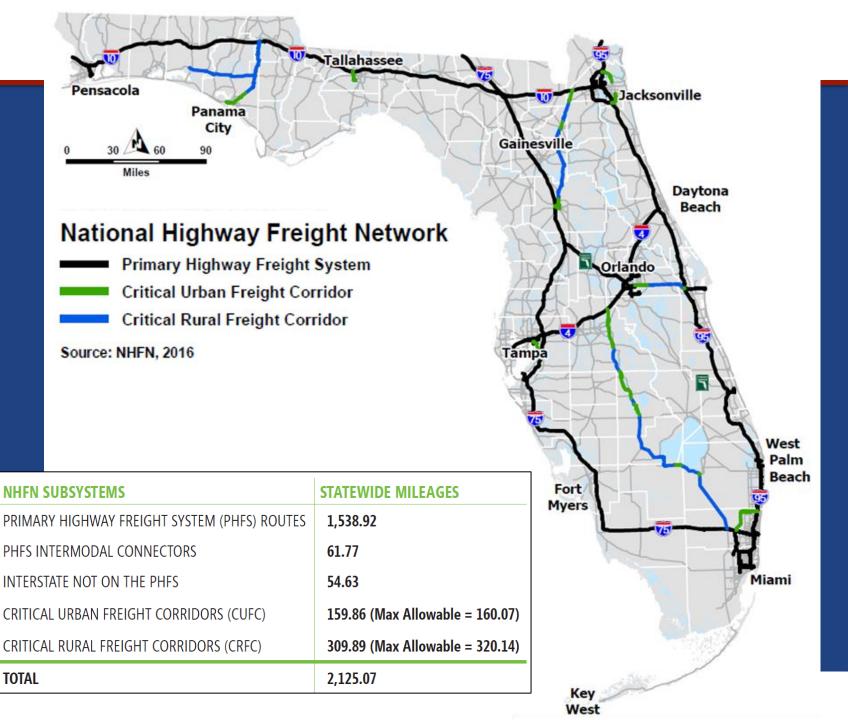
Thank you!

Re-Designating the PHFS



Current Network

- Created to strategically direct Federal resources and policies toward improved performance of the network
- Updated every 5 years, per FAST Act
- The statutory allowance is <3% of additional PHFS mileage (1,246 miles) - 960 miles after including centerline miles that have been added to the network for accuracy





Three Options for Allocating New Mileage

(1) Provide an equal allocation of these 960 miles to each State (~18 miles of potential new PHFS for each State, the District of Columbia, and Puerto Rico)

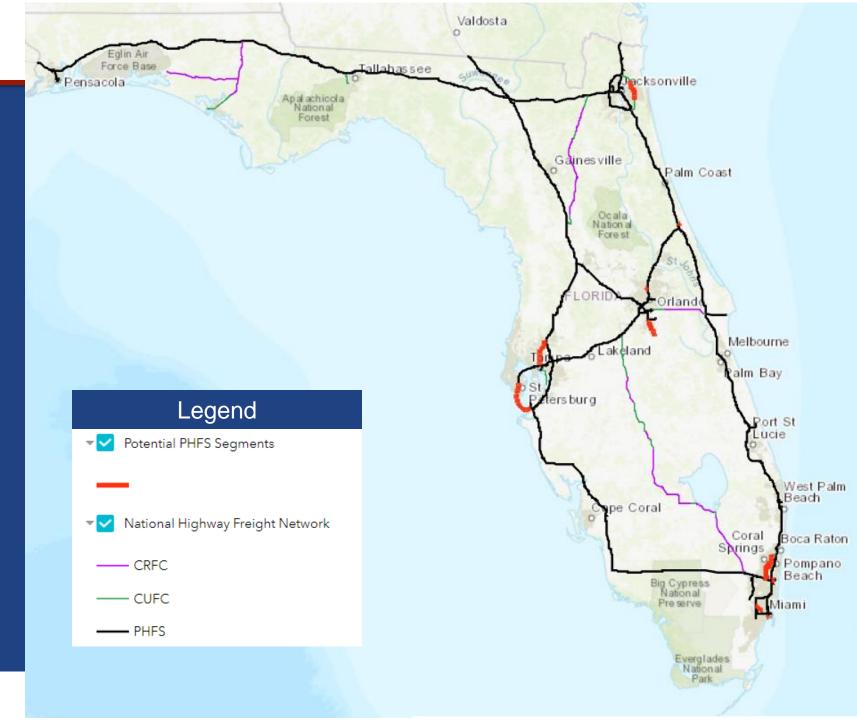
(2) Accommodate States that have greater restrictions on the use of Interstate Highway System routes. There are 18 States (including FL) with PHFS mileage greater than or equal to 2% of the total PHFS mileage. These States may not obligate funds for projects on the non-PHFS interstate highways. This option would result in ~53 miles of new PHFS for these States.

(3) Add the PHFS to any routes newly flagged as Interstate Highway System (since it was built in 2015 from 2011 data). However, there are only 1,246 miles available, and 1,500 miles of new Interstate have been designated between 2011 and 2018.



New Segments

- We identified 10 off-network segments based on criteria in the FHWA Federal Register
 - Used Freight Analysis Framework (FAF) and Highway Performance Monitoring System (HPMS) data to generate tonnage of freight moved by highway and Average Annual Daily Truck Traffic (AADTT) on principal arterials
 - Also looked at network gaps, key facilities, and significant bottlenecks





Segment Name	Route	Estimated Length (Miles)
Jacksonville	295	12
Daytona	92	2
Maitland	414	1.5
Kissimmee	91	10
Tampa	275	16
St. Pete	275	23
Pompano Beach	91	16
Ft. Lauderdale	595	2
Hialeah	27	5
Coral Gables	95	1.5



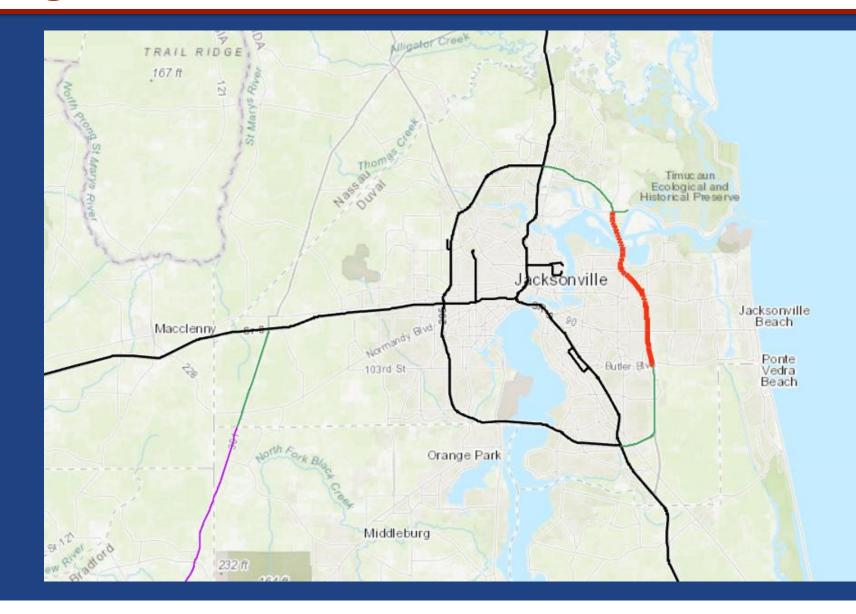
Instructions

- As we take a closer look at each of the 10 segments, please jot down how you think they weigh in importance
- You will have \$100 to invest in the segments based on how valuable you think they are to the network
- You can distribute \$ however you want (all \$100 to one segment, etc.)
- You will submit these into a live polling tool



Jacksonville Segment

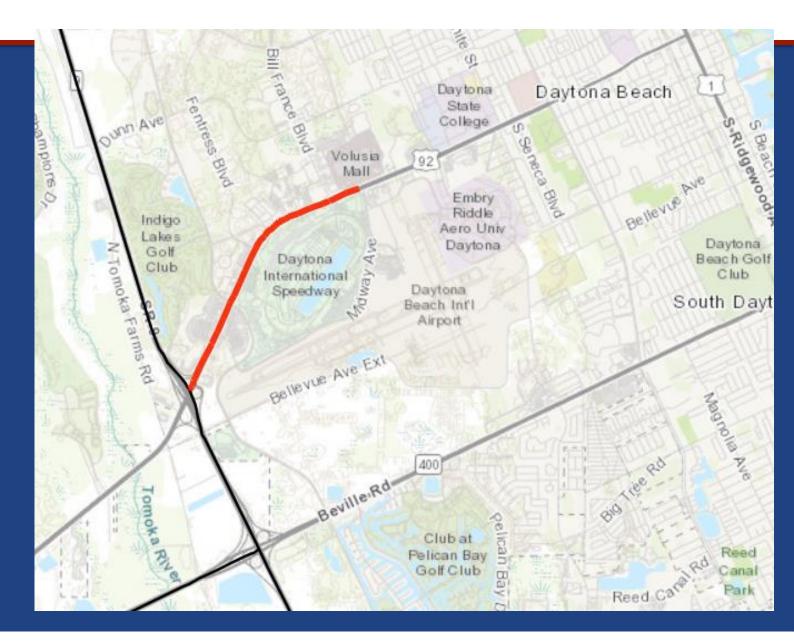
 Connects the I-295 loop between two segments of CUFCs





Daytona Segment

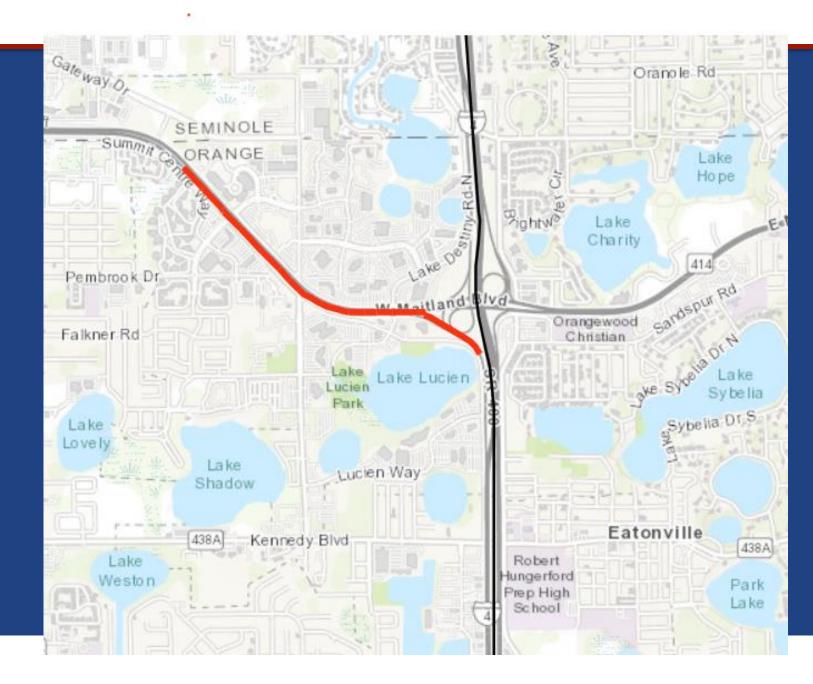
 A 2-mile segment on W Highway 92 (International Speedway Blvd) near the Daytona Beach Int'l Airport, connecting to the PHFS on I-95





Maitland Segment

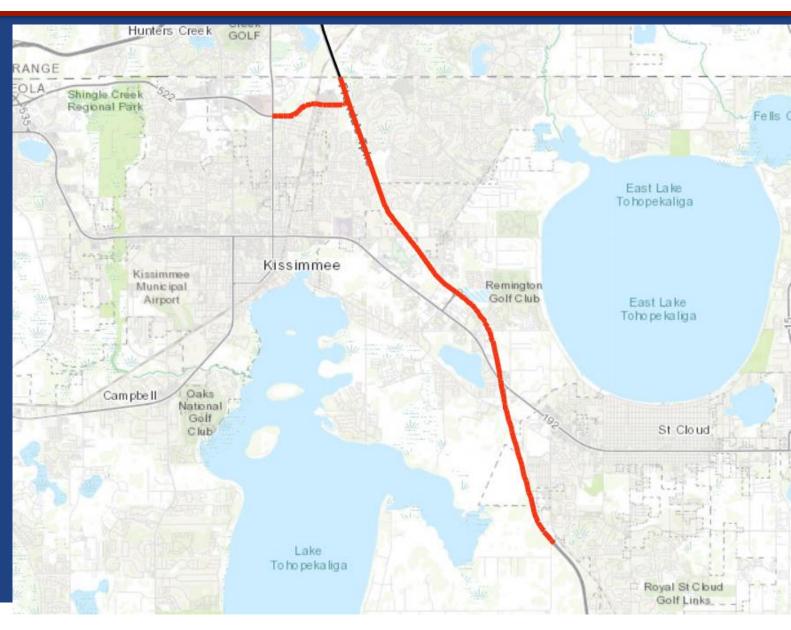
- A segment of SR 414 connecting to the PHFS on I-4
- This segment has been identified as a truck bottleneck, with high tonnage and high AADTT





Kissimmee Segment

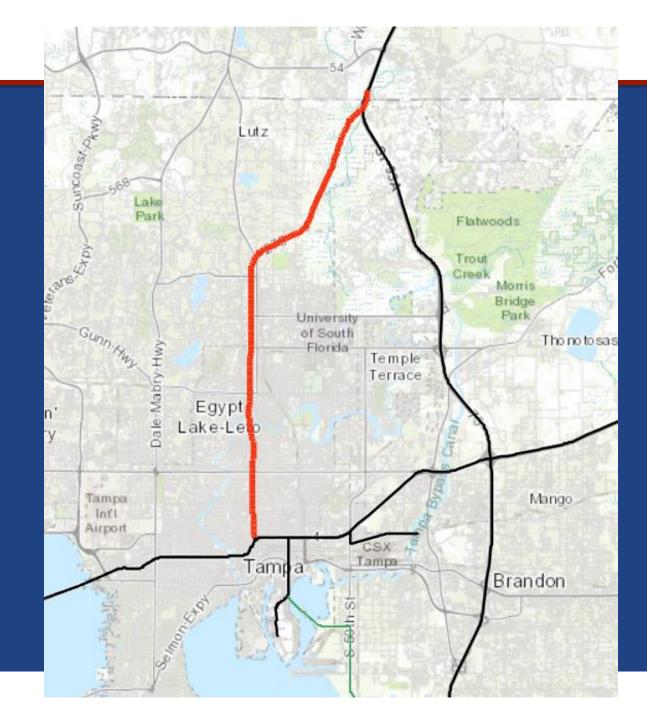
 Continuation of the Florida Turnpike portion of the PHFS in Kissimmee with high tonnage and high AADTT, and piece of 522 with identified bottleneck





Tampa Segment

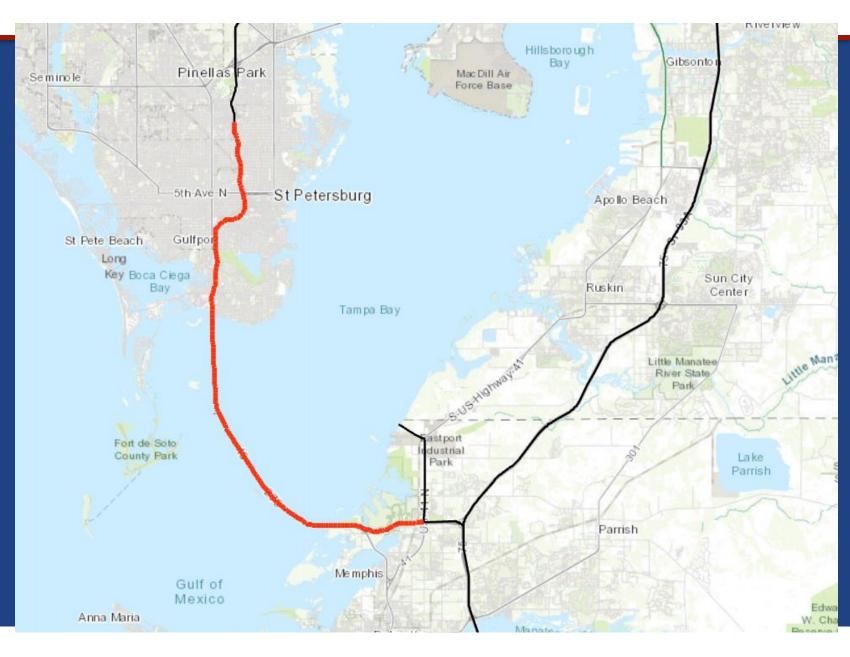
• A 16-mile segment on I-275 connecting PHFS route of I-4 to PHFS route of I-75





St. Pete Segment

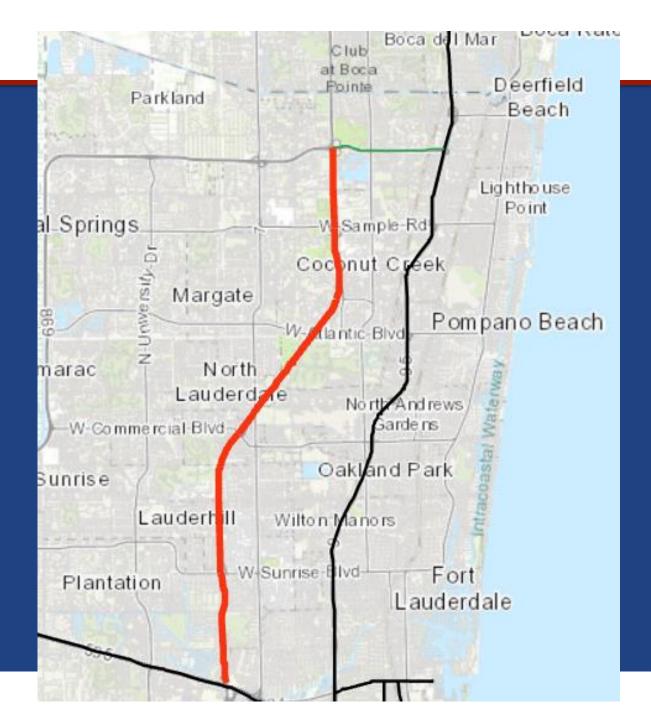
• Continuation of the I-275 loop





Pompano Beach Segment

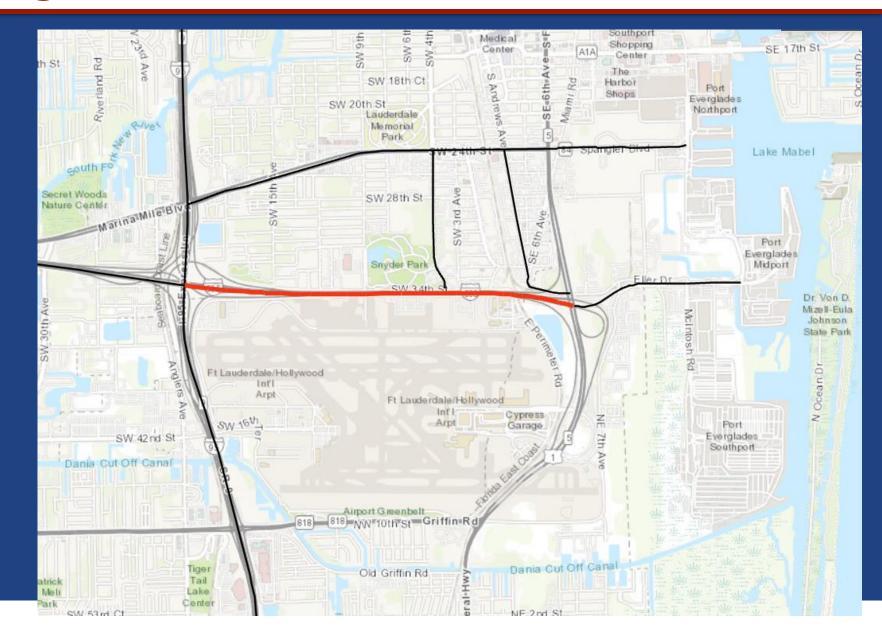
 A segment of the Florida Turnpike connecting a CUFC segment of SR 869 to PHFS route I-595





Ft. Lauderdale Segment

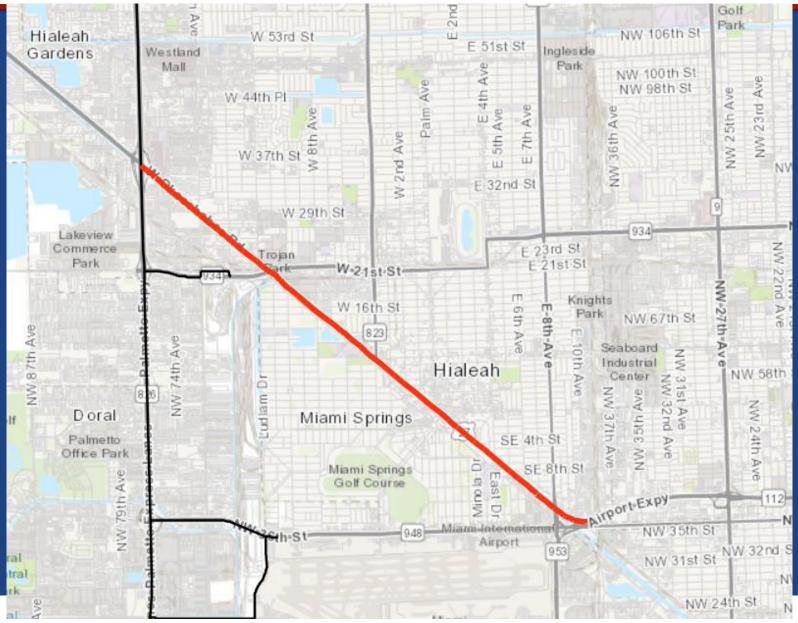
 Segment of I-595 from I-95 to Hwy 1, alongside the Ft. Lauderdale/Hollywood Int'l Airport, facilitating the connection from I-95 to Port Everglades Midport





Hialeah Segment

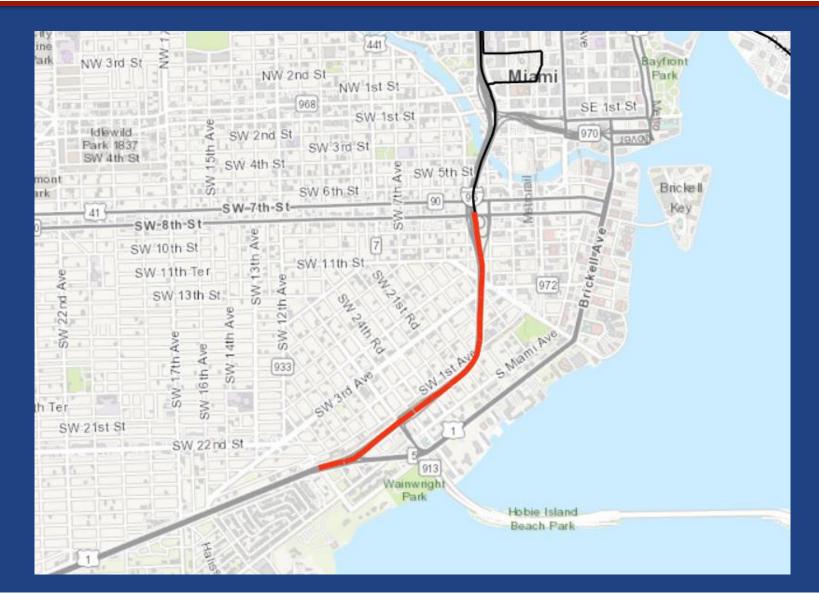
 Segment from PHFS route SR 826 to the Airport Expressway of Miami International Airport on Hwy 27





Coral Gables Segment

 Continuation of PHFS route of I-95 to Hwy 1





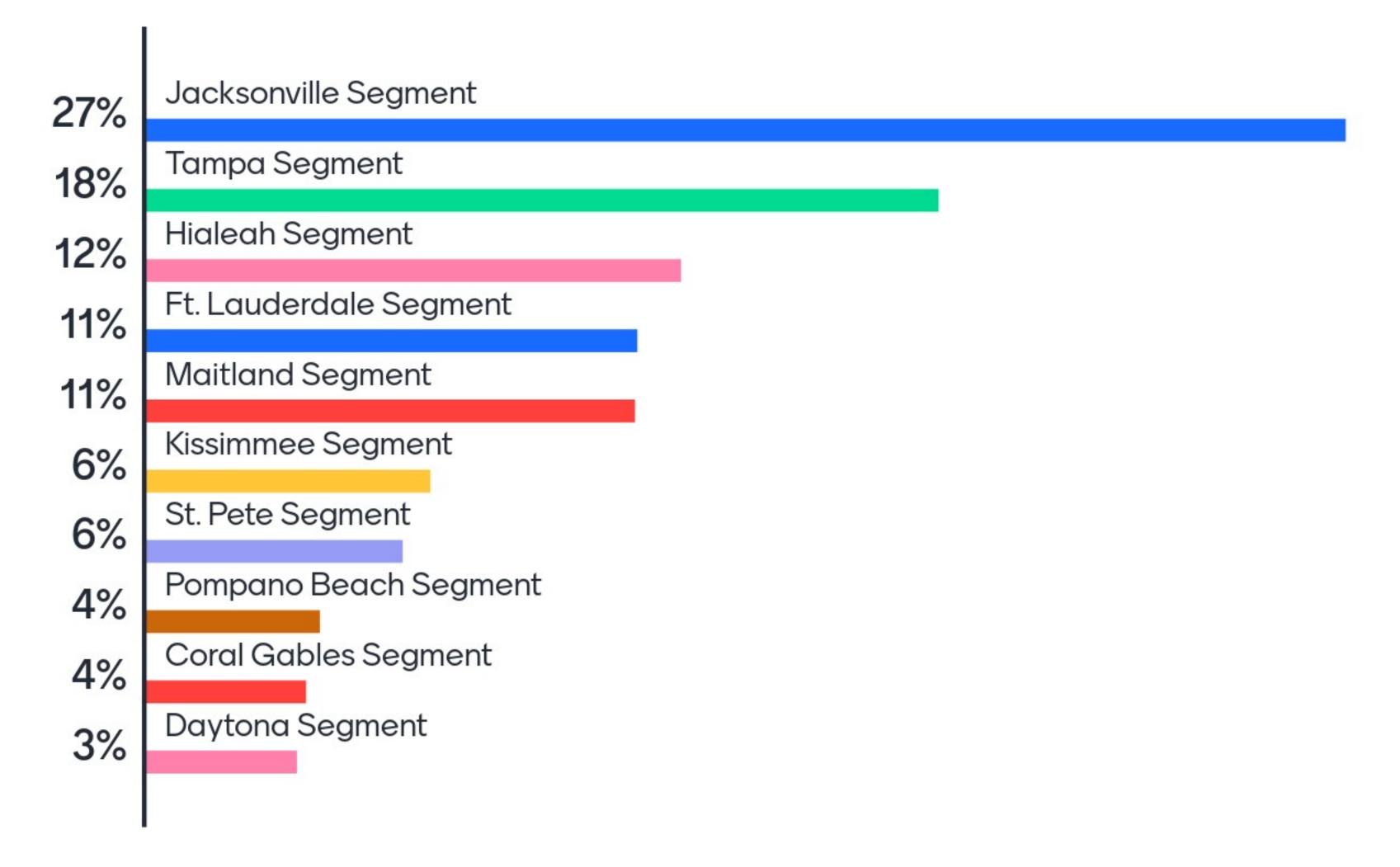
Switch to Mentimeter



Scan this QR code with your phone, or open your browser and type in <u>www.menti.com</u> and enter code 8281 2705



You have \$100 to invest in these segments







If you think a different segment should be considered, place a pin where that would be







Designing Flexibility for Evolving Technology into Infrastructure





"Timing has a lot to do with the outcome of a rain dance."

<u>Corollary</u>

So does persistence: Keep dancing until it rains.



"We tried it and it didn't work" ... until it did.

PUBLIX DELIVERY – 2002 (NOW INSTACART)

BURGER KING - TRIED DELIVERY IN 2011

UBER – 2011 IN SAN FRANCISCO (2014 IN FLORIDA)

LYFT – 2012 (2014 IN FLORIDA)

AMAZON PRIME – 2005

WALMART DELIVERY – 2018

Relatively new technology:

iPad (2010), Oculus VR (2012), Instagram (2010), Kickstarter (2009), GPS on phones (2009), Pinterest (2010), Square (2010), 4G (2010), WhatsApp (2009)

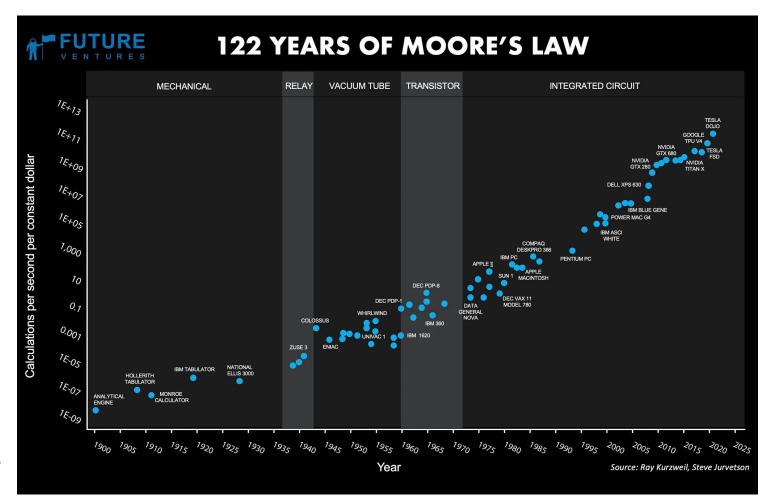
Smart Assistants, Smart Watches, AR, VR, Tablets, Earbuds, Banking (*cashier* \rightarrow wall \rightarrow phone) Telehealth, Robotic Surgery

For cars: parking assist, back-up cameras, parking apps, ACES levels 1-3

What made the difference?

What made it work now where it didn't before?

- Some ideas:
 - Technology
 - New generation(s) of people
 - Evolution of people <u>and</u> technology)
 - Connections and linkages (V2I, E2E)
 - Rate of change and computing power →



What does it mean for us as planners and advisors?

We can now collaborate to design flexibility and resiliency into our infrastructure and public assets.

Our legacy investments need to be more than simple roads, bridges, buildings and other assets. Now we can build interconnected systems that adapt to an *evolving* future.

Designing Flexibility into Infrastructure

RESILIENT MATERIALS FOR ROADS, BRIDGES <u>AND BUILDINGS</u>

- Self healing concrete
- Weatherproofing

A.C.E.S. AND THE TRANSITION - RELATING TO REAL ESTATE

- Parking and transfer areas for autonomous-to-driven, platooning, etc.
- Built-in communication considerations (I2V, V2V, V2E)
- Charging and other repowering facilities and systems (hydrogen, etc)
- Curb management (pick-up and drop-off, deliveries, transit integration)

CONSIDERATIONS FOR BUILDING PLACEMENT

- Reconsider parking location, structure and design.
- The IRS gives 39 years to amortize the asset cost. Where will we be in 2060?
- Will we be driving a 3-6,000 lb car to work, and leaving it all day, in 25 years?

Barriers to Innovation

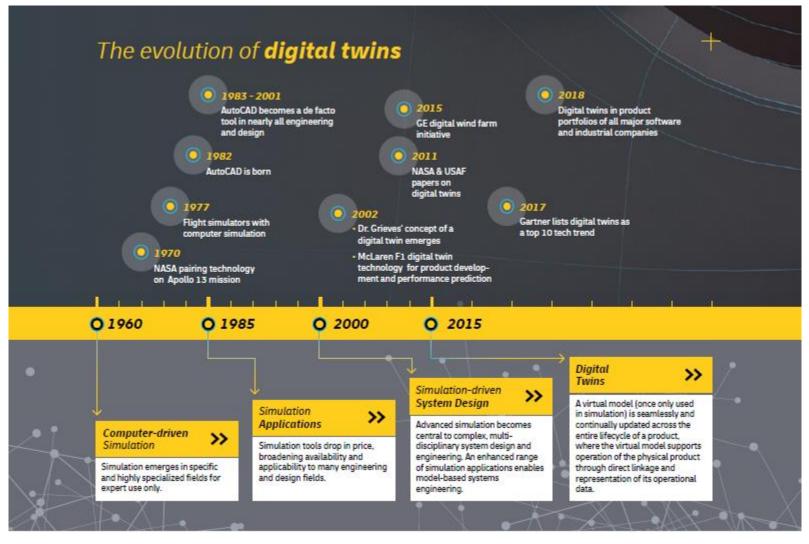
ISSUE: PROOF OF CONCEPT (TRACK RECORD)

Consider: Demonstration of public demand and track record is problematic for innovations.

Remember: There can be no public demand until it is available (e.g., Uber, mobile GPS back-up cameras, etc).

Challenges: Past experiences with an older and/or lesser version may discourage improvement. (e.g., a bus transit facility will not encourage the investment attracted by light rail, rapid transit, and/or an APM).

Suggest: Digital Twin or modeling; public polling and campaign.



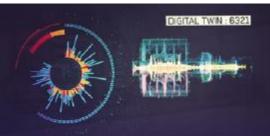


Figure 1: The evolution of digital twins. Source: DHL Figure 2: GE has created a digital twin of the Boeing 777 engine specifically for engine blade maintenance. Source: GE

"A digital twin is a virtual representation of an object or system that spans its lifecycle, is updated from real-time data, and uses simulation, machine learning and reasoning to help decisionmaking."

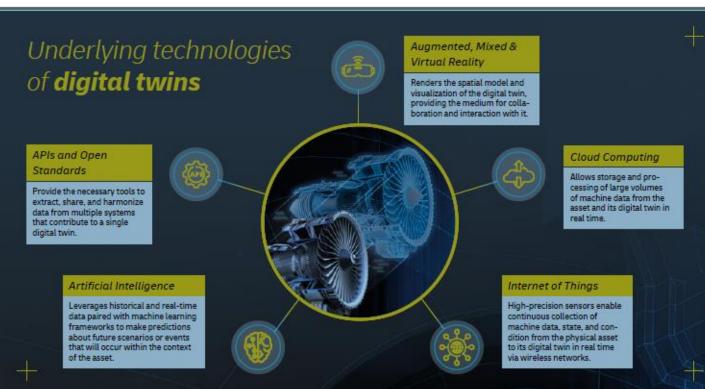
https://www.ibm.com/blogs/internet-of-things/iot-cheat-sheet-digital-twin/



"A digital twin is a *virtual representation* of a physical asset."

Five technology trends are developing in a complementary way to enable digital twins, namely

- The internet of things (IoT),
- Cloud computing,
- APIs and open standards,
- Artificial intelligence, and
- Digital reality technologies.





ISSUE: LACK OF AVAILABLE LAND WHERE NEEDED / PROHIBITIVE PRICING

Problem: At \$1 - 3 million per acre, land is too expensive for truck parking, container and chassis storage, and transfer of low-margin product. This is interfering with Florida's global position as a gateway.

Consider: Land held by county and state (TIITF) jurisdictions Consider: New mix of uses

Challenges: Competing interests (& lobbyists)

Suggest the following:

- 1. Map the CDL (Class A) license-holder locations (demonstrate local residency and constituency);
- 2. Lease property from a local/ regional jurisdiction at a reasonable rental rate (meet their average rate, usually low);
- 3. Develop a template to demonstrate positive economic impact.

ISSUE: GAINING APPROVAL AND FUNDING

Challenges: Competition by limited interest groups, lobbyists, and "P3 land-banking". Consider: Know what you absolutely need before starting. Stick with it. Suggest: RFI, RFQ, RFI to gauge interest and gain input.



A little humor

Prologis Georgetown Crossroads 590,000 SF Seattle / For Amazon

Vertical industrial (multi-story) development is a solution where land is precious.



Sunset Industrial Park 1.3 Million SF Brooklyn, NY by Bridge Development





Hong Kong Source: The Australian



https://www.goranbrelih.com/a-story-about-multi-storey-industrial-warehousing/

Prologis is building this multistory warehouse e-commerce operation for Amazon in Miami, Florida



Is this an opportunity for Florida ?

ISSUE: TRAFFIC CONGESTION AND SUPPLY CHAIN DISRUPTION

Ship report 10/14: 139 total ships inport LA/LB includes 83 at anchor or holding areas & 56 at berths. Of the 139, 91 are container ships including **64 at anchor** or in holding areas & 27 at berth. 32 vessels in holding areas; 28 container ships, 4 tankers. <u>pic.twitter.com/0Pz1HAdJYL</u> - Marine Exchange (@MXSOCAL) <u>October 14, 2021</u>

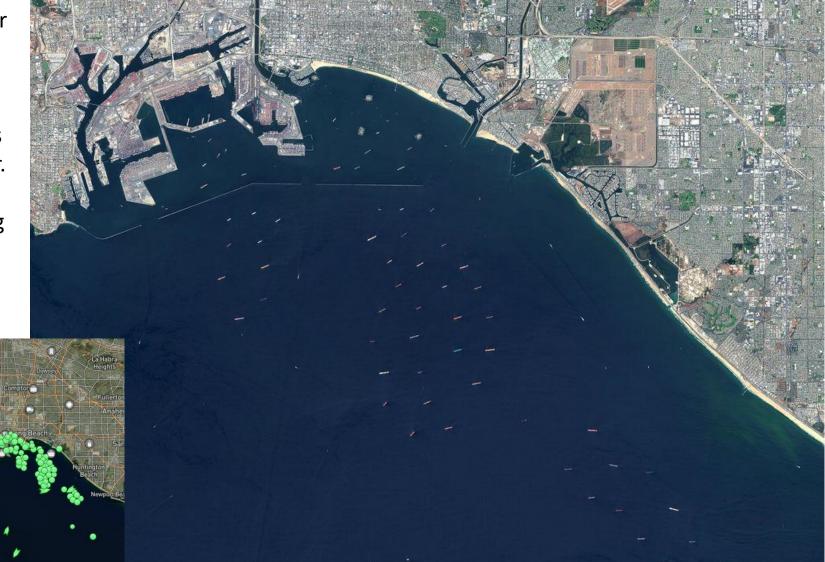
Consider: Extended 24/7 hours are being pursued (LA/LB). <u>Challenges</u>: Dock workers, inspectors, empty containers, chassis shortages, availability of warehouse workers, land use restrictions. (Can't flip a switch.)

"Discussions are necessary with marine terminals, labor unions, railroads, shipping lines, the trucking industry, importers, exporters and more stakeholders"

Solutions: Amazon, Home Depot, IKEA and Walmart are acquiring vessel capacity directly. *Is this an opportunity for Florida's 447-mile supply chain?*

Congestion at Ports of LA / Long Beach

"There are now 72 container ships at anchor waiting to unload at the port of LA-Long Beach. Carriers are cancelling upcoming sailings to allow the backlog to clear. Of course, that just means goods will pile up on loading docks at origin. Bullwhip effect in full effect." JOC



Import surge pushes port of NY/NJ above Long Beach in cargo coastal switch

US east and Gulf coast container terminals saw a massive 52.3% uplift, highlighting an accelerating coastal shift, given more momentum from west coast port congestion.



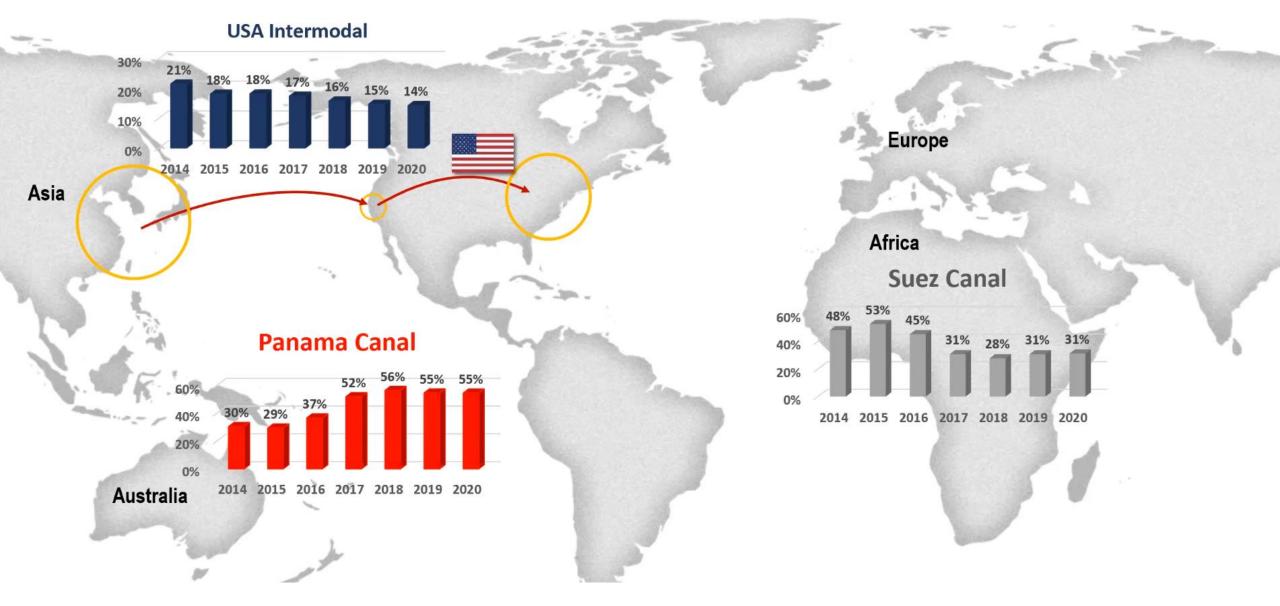
Trans-Atlantic carriers diverting from congested <u>Savannah</u> to Charleston

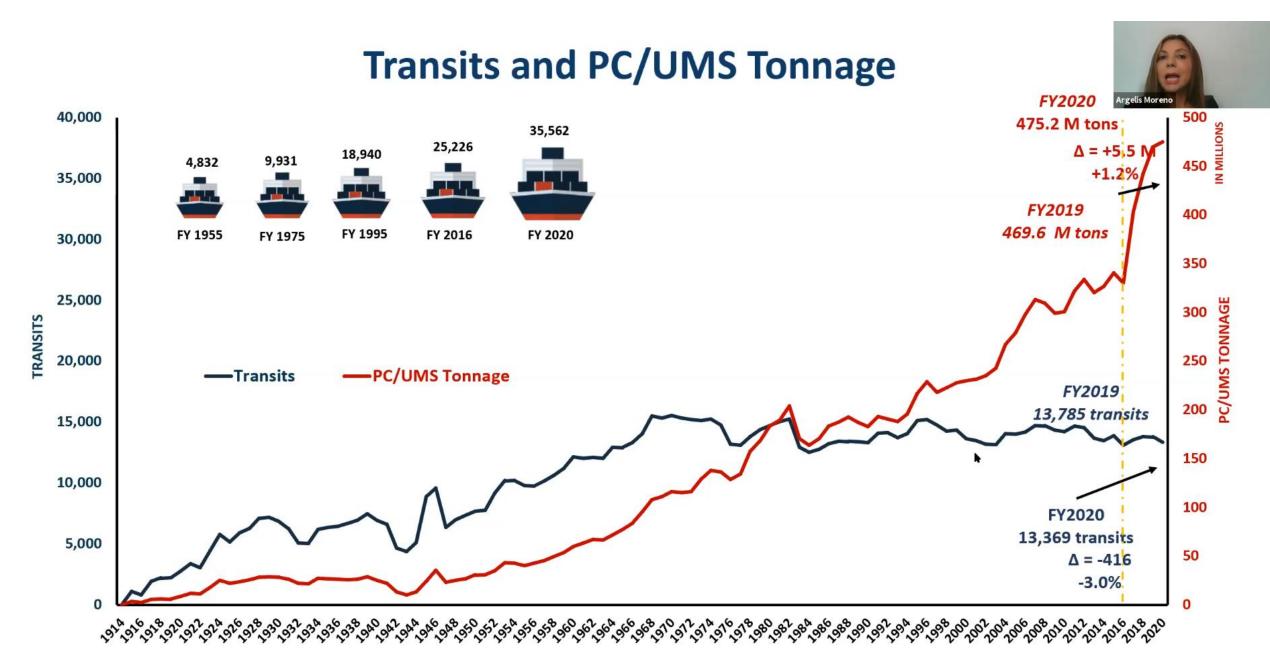
CMA CGM has joined Hapag-Lloyd and OOCL in temporarily cutting the congested US East Coast port of Savannah from its trans-Atlantic services and replacing it with a Charleston call.



Panama Canal Container Market Share - Asia to East Coast of t United States

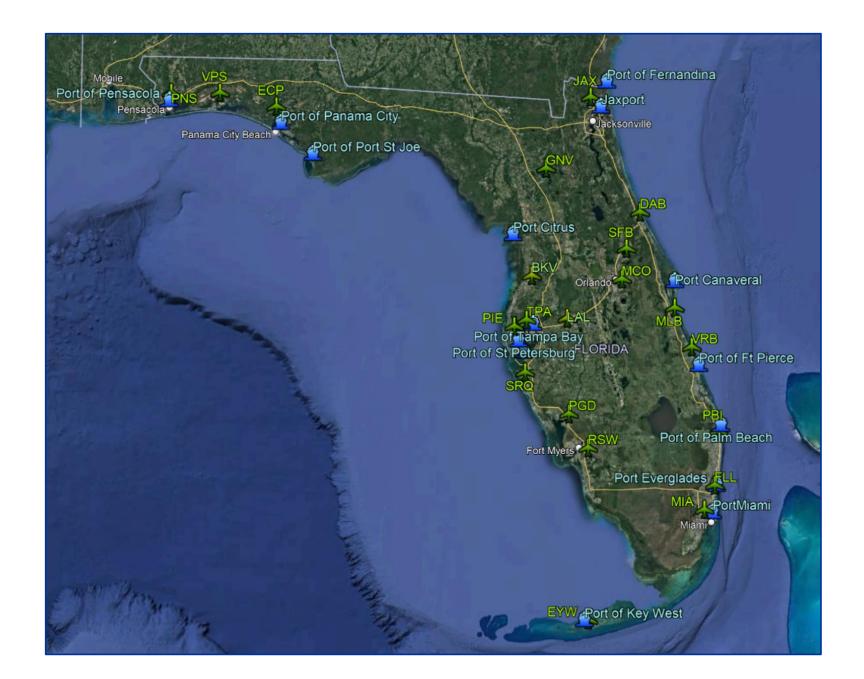




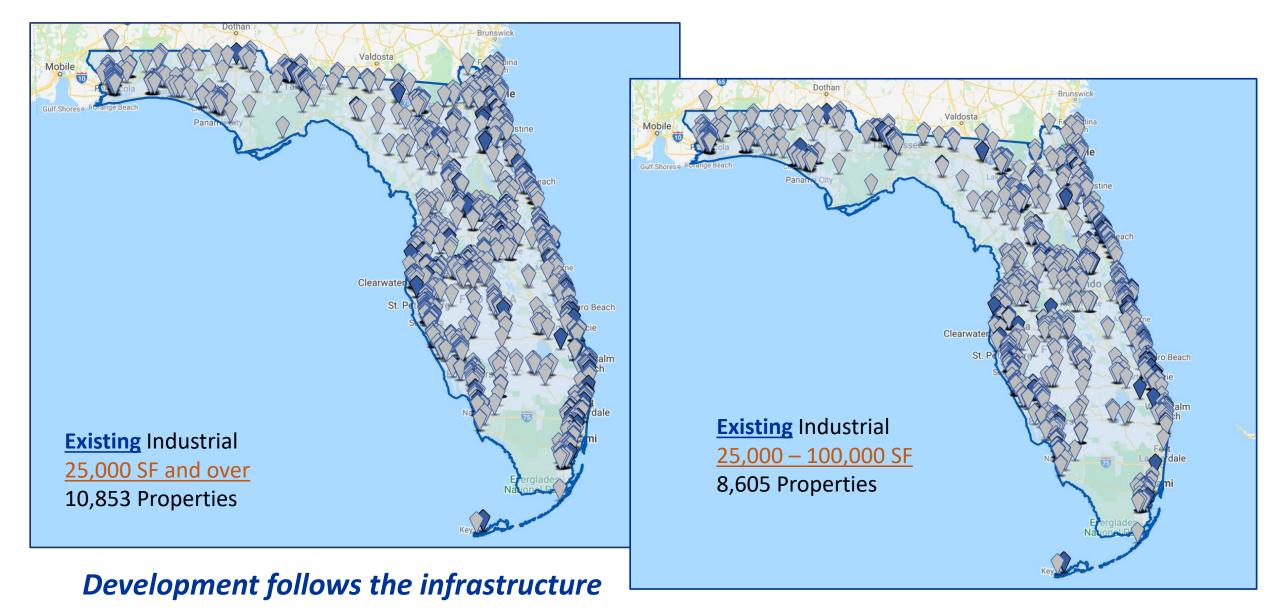


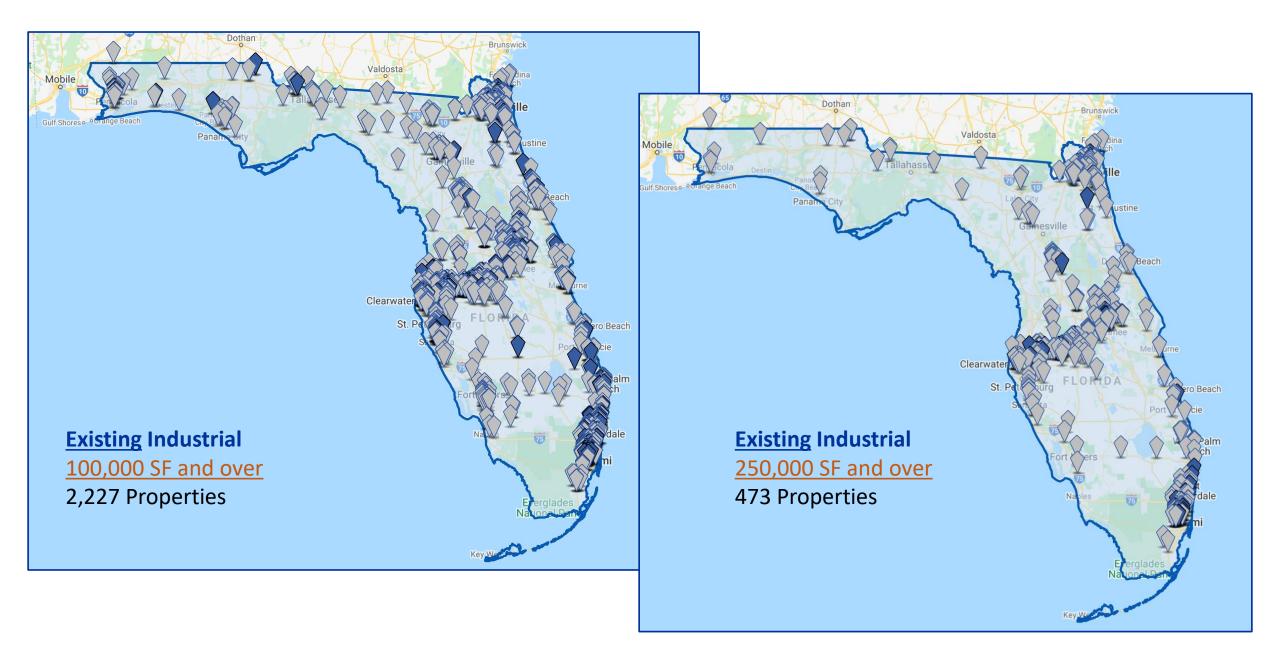
Florida's International Infrastructure

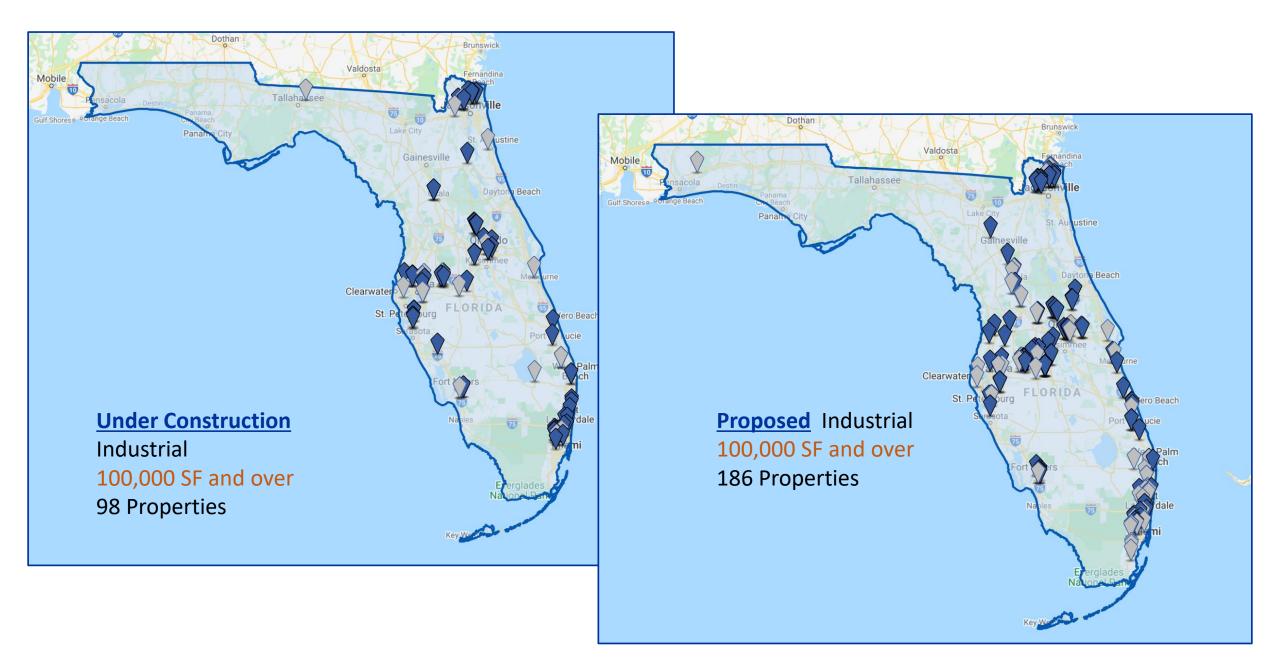
- 15 Seaports
- 24 International Airports
- 20 Commercial Service Airports
- 2 Spaceports
- 7 qualifying Cargo Airports



Florida Industrial Property Inventory





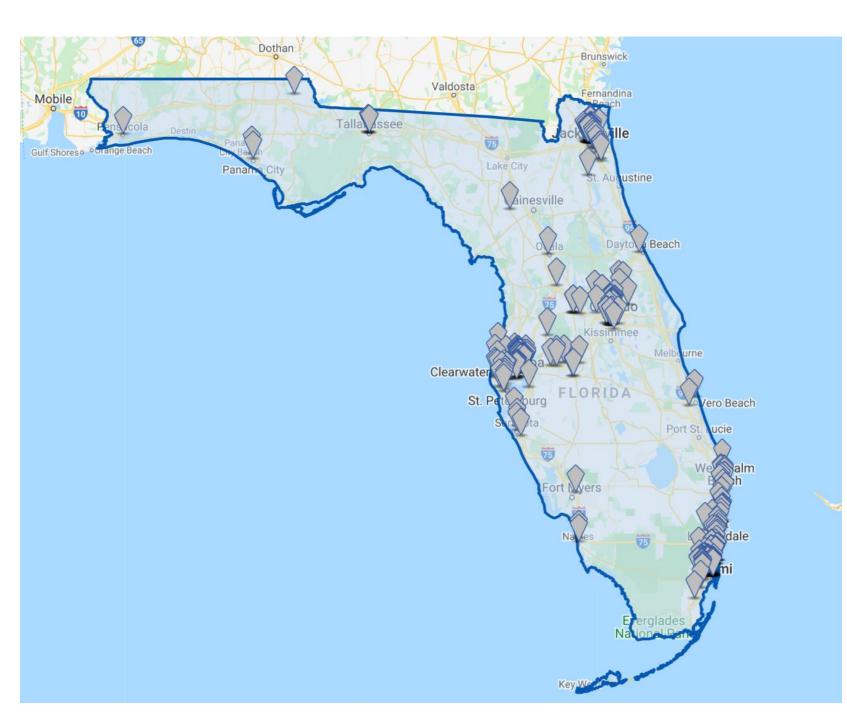


Demolished 25,000 SF and over 304 properties

Buildings Demolished

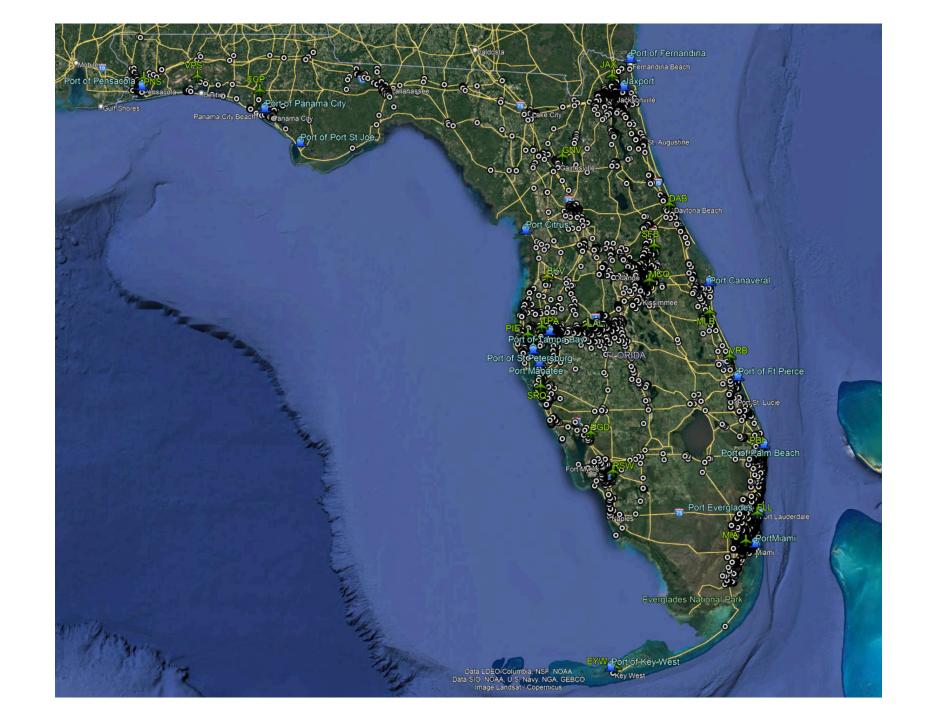
25k to 50k:	166
50k to 100k:	85
100k and over:	53

Underlying Parcel SizesLess than 10 Ac:21210 Ac and over:92



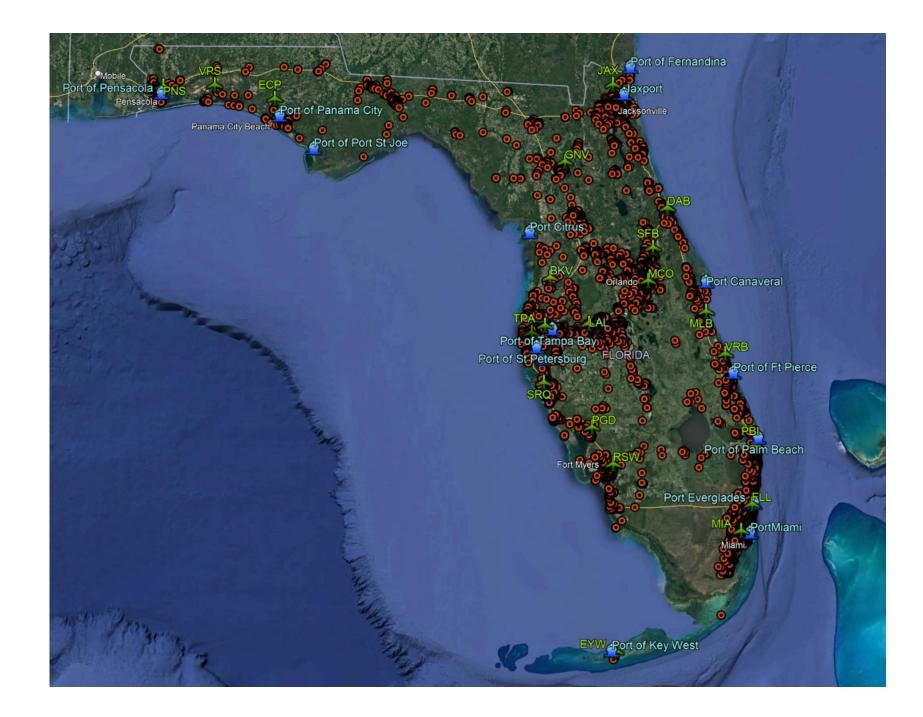
Florida Industrial 25,000 SF and over 10,853 properties

Total: 1,014,367,041 SF





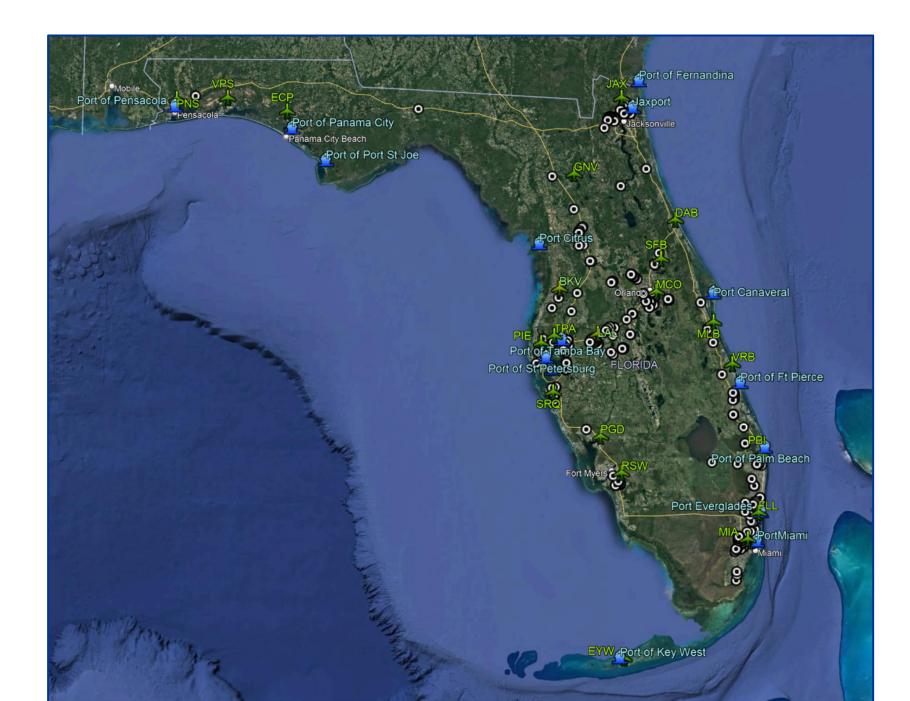
Florida Industrial 25,000 SF and over 10,853 properties



Industrial Proposed & Under Construction

Over 100,000 SF

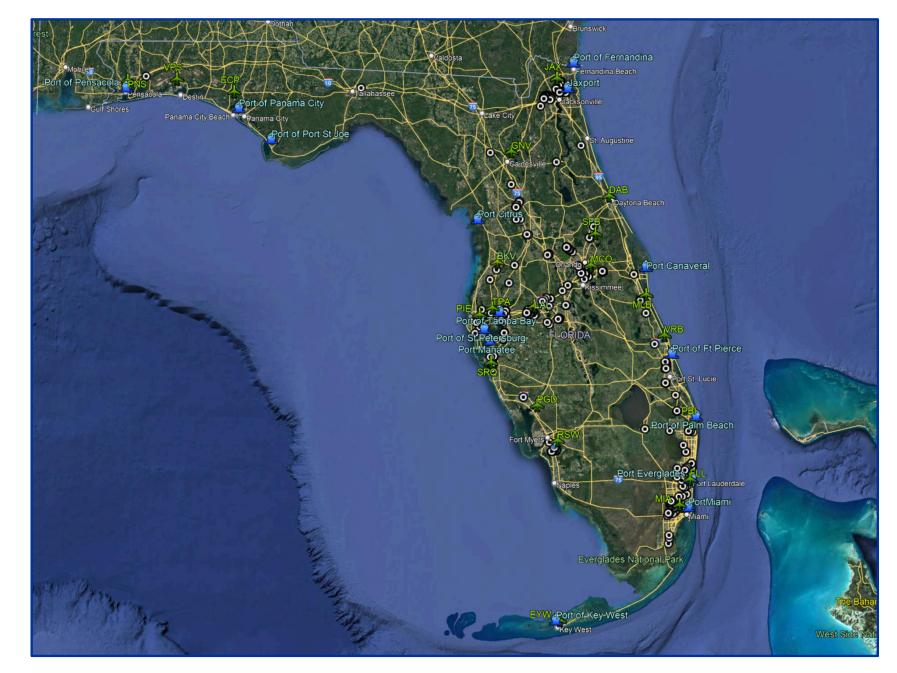
(Shown with Seaports & Airports



Industrial Proposed & Under Construction

Over 100,000 SF (Shown with Roadways)

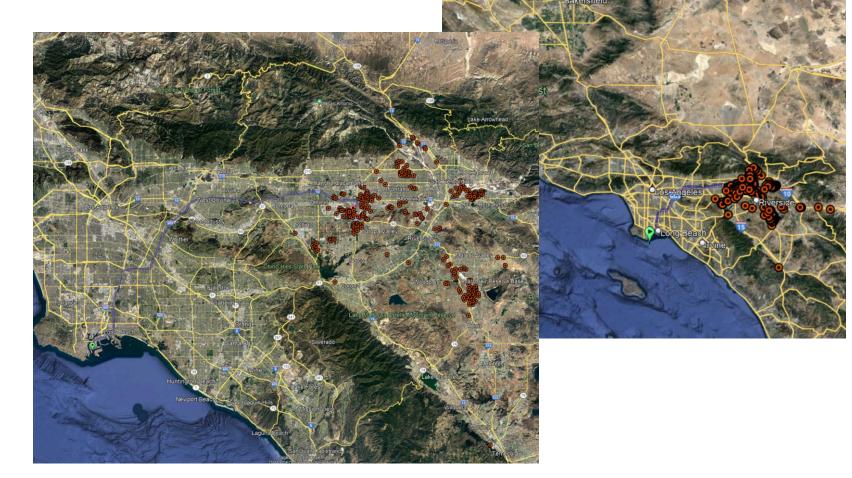
"We built the infrastructure, and they came."



INLAND PORTS

274+ facilities of at least 500,000 SF

The Inland Empire – California Services Ports of LA & Long Beach 60 miles (1 hour) to closer points (80+ miles to further points

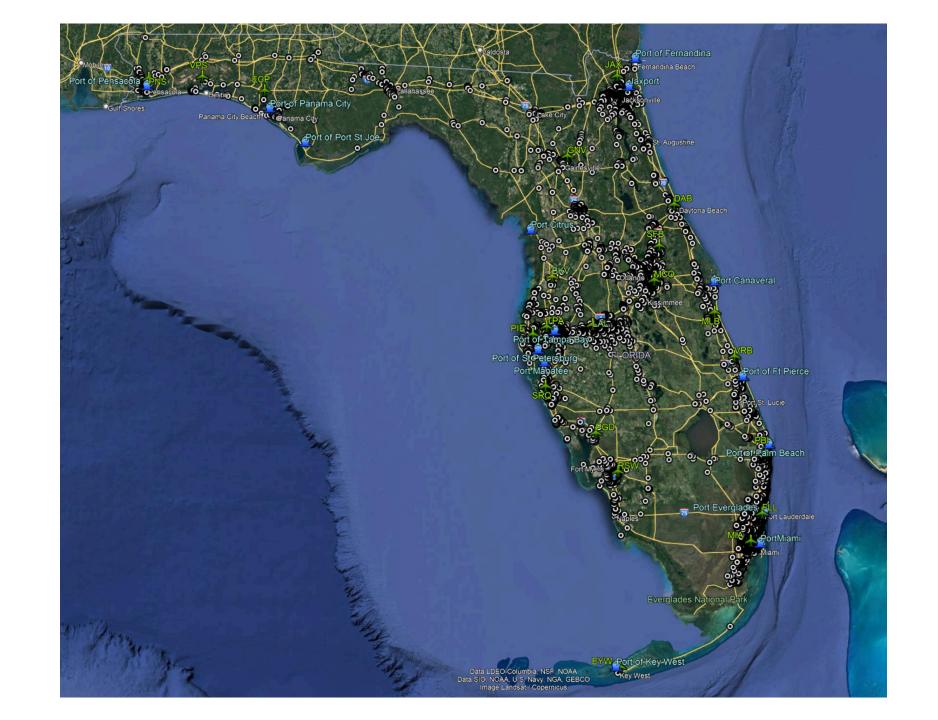


oia National

Florida Industrial 25,000 SF and over 10,853 properties

Total: 1,014,367,041 SF





Discussion

What does this do for Florida, for logistics, and why is it important?

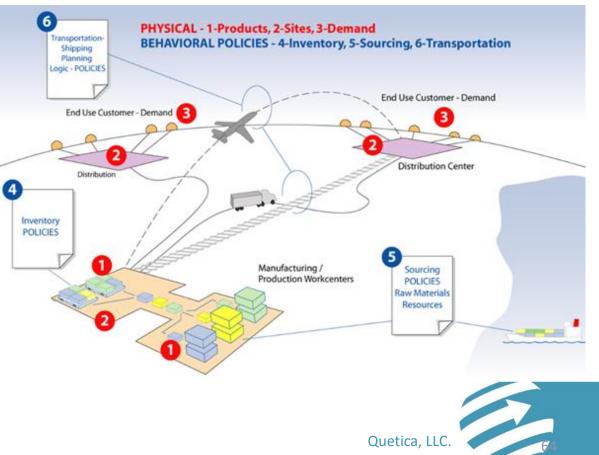
- Capitalizing on Shipping to the East Coast.
- Future-proofing Infrastructure and Buildings.
- Designing resiliency into Infrastructure and buildings.
- Working with developers and gaining public support.
- Improving freight efficiency (government's role?).
- Where do we need to target precious resources?

Using Optimization to Enhance Freight Efficiency



Optimization Project Objectives

- Reduce business transportation costs
- Resilience / diversify freight infrastructure
- Reduce truck congestion
- Industry workforce challenges
 - Driver shortages (national/state)
- Optimization can also address:
 - Economic Development
 - Reliability
 - Speed to market



Project Scope

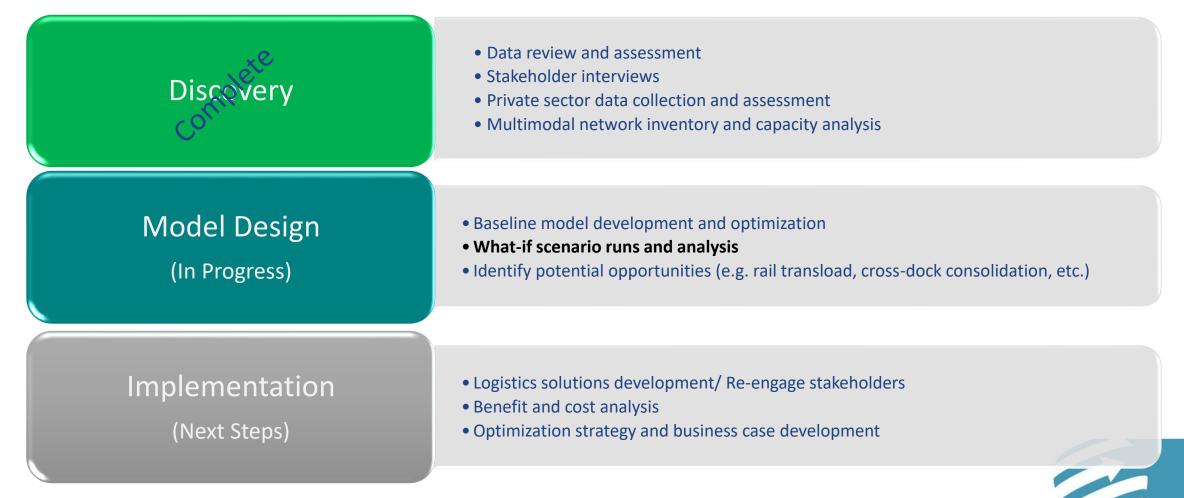
- Geography:
 - 34 counties in Districts 2 & 3
- Includes:
 - Locations (county level)
 - Market sizing / market opportunity for i
 - Cost savings to private sector for netwo
 - Cost/Benefit and ROI analysis to support grants and mancing





Network Optimization Overview

• Project Scope: FDOT Districts 2 and 3



"What-If" Scenarios

The Six Selected Scenarios Include:

- 1. Intermodal in Panama City/Bay Co
- 2. Transload in Panama City/Bay Co
- 3. Transload in Pensacola/Escambia Co
- 4. Freight consolidation in Pensacola/Escambia Co
- 5. Transload in Lake City/Columbia Co
- 6. Transload in Callahan/Nassau Co





Panama City Transload Scenario

• Objective

- Quantify market opportunities to convert truck to transload (carload) services for dry bulk/dimensional shipments
- Study scope
 - Counties within 50 miles of the analysis county centroid
- Selected commodities most likely to use the transload services
 - 10% market conversion rate



Transload/Carload Assumptions

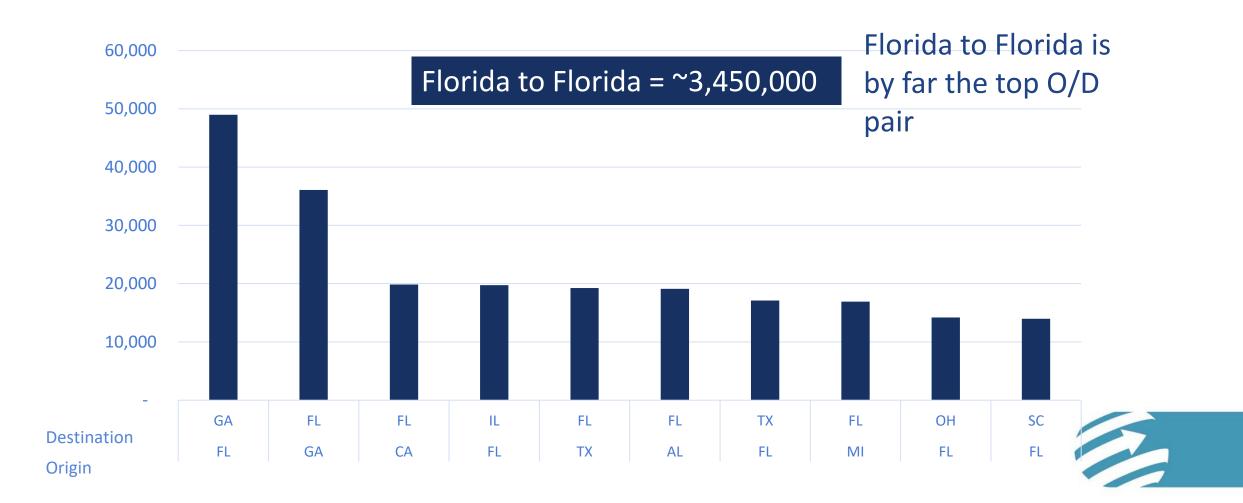
- Focused on converting long-haul truck shipments (>250 miles)
- Focused on lanes delivering significant savings: Door-to-door cost savings > \$5/ton
- Average weight assumptions: Truckload 42,000 lbs.; Carload 175,000 lbs.
- Transload cost assumption \$8/ton
- Commodities included for transload/carload service analysis
- All results are annualized totals based on FAF-5 and 2019 cost data

SCTG	Commodity	SCTG	Commodity	SCTG	Commodity	SCTG	Commodity
01	Live animals/fish	12	Gravel	23	Chemical prods.	34	Machinery
02	Cereal grains	13	Nonmetallic minerals	24	Plastics/rubber	35	Electronics
03	Other ag prods.	14	Metallic ores	25	Logs	36	Motorized vehicles
04	Animal feed	15	Coal	26	Wood prods.	37	Transport equip.
05	Meat/seafood	16	Crude petroleum	27	Newsprint/paper	38	Precision instruments
06	Milled grain prods.	17	Gasoline	28	Paper articles	39	Furniture
07	Other foodstuffs	18	Fuel oils	29	Printed prods.	40	Misc. mfg. prods.
08	Alcoholic beverages	19	Coal-n.e.c.	30	Textiles/leather	41	Waste/scrap
09	Tobacco prods.	20	Basic chemicals	31	Nonmetal min. prods.	43	Mixed freight
10	Building stone	21	Pharmaceuticals	32	Base metals		
11	Natural sands	22	Fertilizers	33	Articles-base metal		

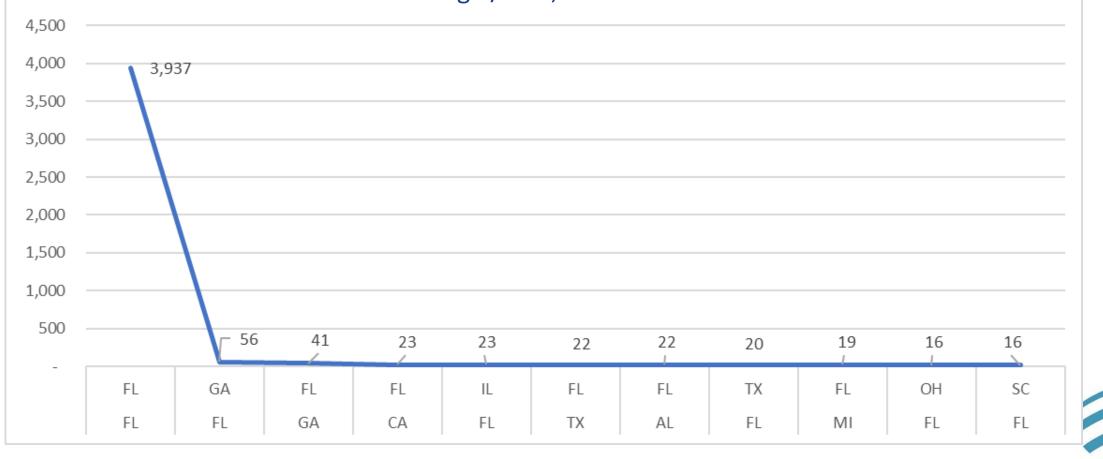


Tons

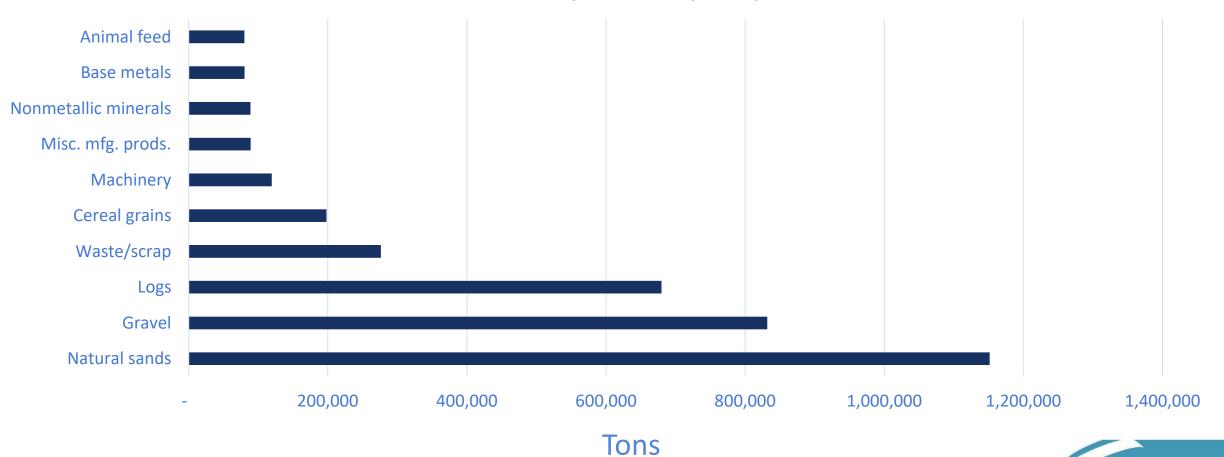
Total Tonnage by Origin / Destination Pair



Market Conversion Rail Cars by Origin/ Destination Pair Shows 10% of total tonnage / 175,000 lbs. = Number of Rail Cars



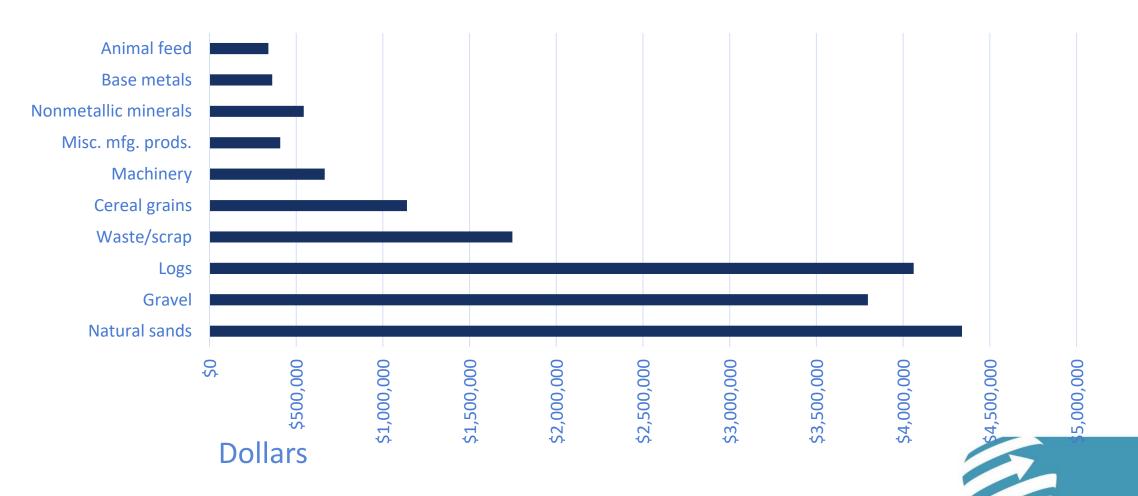
Total Tons by Commodity Group





Assumes 10% of market is converted to rail via transload

Converted Saving by Commodity Group



Converted Truck Mileage Reduction

Origin	Destination	Truck Mile Reduction
Florida	Florida	64,850,949
Florida	Georgia	786,921
Georgia	Florida	522,671
СА	Florida	2,108,284
Florida	Illinois	826,521
Texas	Florida	751,361
Alabama	Florida	255,860
Florida	Texas	713,191
Michigan	Florida	809,180
Florida	Ohio	589,741
	Total	72,214,679



Contacts

FDOT

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Consultant Team

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Rob Palmer, AICP CTL - Project Coordinator Quetica, LLC 904.400.3491 <u>rob.palmer@quetica.com</u>

Weiwen Xie - Chief Data Scientist Quetica, LLC 651.646.4646 x803 weiwen.xie@quetica.com



Public Comments



Member Comments

Name	Organization Represented		
John Abrams	Loves Travel Stops		
Joe Arbona	Genesee Wyoming Railroad		
Aubrey Brown	CSX		
Gene Conrad	Lakeland Linder International Airport		
William Crowe	Canaveral Port Authority		
Jaha Cummings	City of Punta Gorda		
Kevin Daugherty	Brooksville – Tampa Bay Regional Airport		
Laura DiBella	Florida Harbor Pilots Association		
John Dohm	Florida TransAtlantic Holdings		
Lauren Farrell	Space Florida		
Patrick Feeney	Kenan Advantage Group		
Bruce Lyon	Winter Haven Economic Development Council		
Terri Malone	Escambia County		
Robert Midgett	Walmart		
Carol Obermeier	Southwest Florida International Airport (RSW)		
Seckin Ozkul	University of South Florida (USF)		
Samuel Pearson	UPS		
Nick Primrose	Jacksonville Port Authority (JAXPORT)		
Mike Rubin	Florida Ports Council		
Tori Rumenik	Florida Fruit and Vegetable Association		
Andre Samuel	Enterprise Florida Inc		
Gregory Stuart	Broward Metropolitan Planning Organization		
Alexander Trauger	MetroPlan Orlando		
Kevin Walford	Miami-Dade Transportation Planning Organization		
Barbara Wilson	RailUSA, LLC		
Desiree Ann Wood	REAL Women in Trucking, Inc.		



Future Meeting Dates

• Tentative Schedule for next Florida Freight Advisory Committee (FLFAC) Meeting:

January – Enhance Mobility Spring/Summer – Theme TBD







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