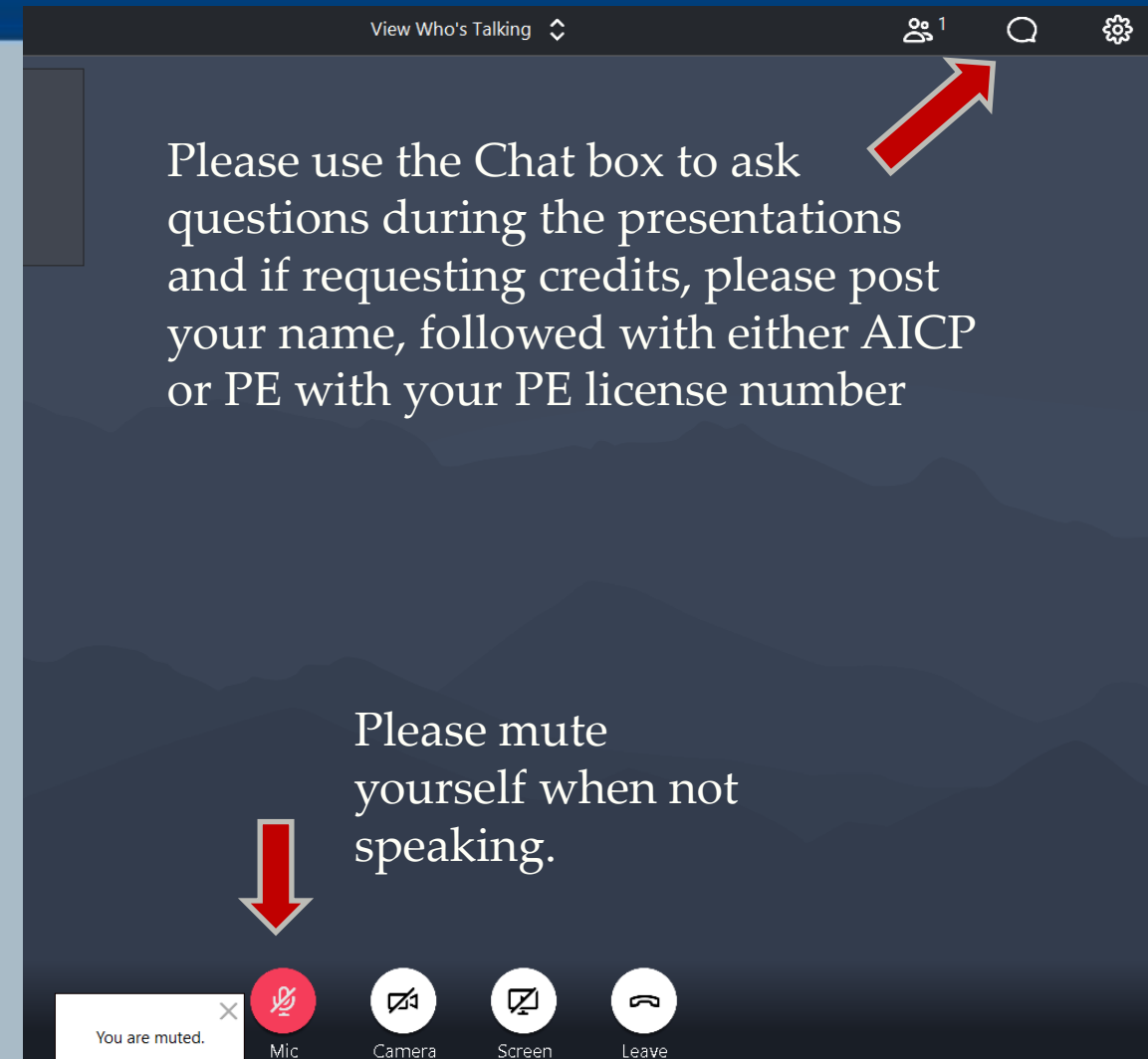






February 16 Freight Initiatives Committee Agenda






- Roll Call of Members
- Approval of Minutes
- Update on NJTPA Freight Division Activities
- 2021 Port Update
- Two-Minute Reports on Freight Activities from Committee Members
- Next Meeting: April 19, 2021 – Annual Freight Rail Update
- Adjournment



View Who's Talking   1  

Please use the Chat box to ask questions during the presentations and if requesting credits, please post your name, followed with either AICP or PE with your PE license number

Please mute yourself when not speaking.

You are muted.   Mic  Camera  Screen  Leave

A screenshot of a Zoom meeting interface. The top bar shows "View Who's Talking" with a dropdown arrow, a participants icon with "1", a chat icon, and a settings icon. A red arrow points from the chat icon to the text "Please use the Chat box...". The main area contains two paragraphs of text. The bottom toolbar shows a "You are muted." notification, a red microphone icon with a slash, and icons for Camera, Screen, and Leave.

NJTPA Freight Division Update

- 4Q20 Industrial Real Estate Update
 - Over 851 million square feet of industrial space
 - 34 properties in 11 million sq. ft. under construction
 - Wider types of companies leasing space
 - Record 10.4 million square feet in 31 buildings completed in 2020
 - Nearly 140 new buildings added since 2017

Learn more at www.njtpa.org/freight



NJTPA Freight Division Update

- Freight Concept Development
 - Pilot Program completed
 - FY2021 Program started
 - Berkshire Valley Road Truck Circulation Project in Roxbury, Morris County
 - Port Reading Secondary South Main Street Grade Crossing Elimination Project in Bound Brook, Somerset County
- Truck Parking



Learn more at www.njtpa.org/freight

February Freight Initiatives Committee Presentations and Discussion

- **Weathering the Storm: Growing During the Pandemic, Going Greener, and Moving Forward**, Bethann Rooney, Port Authority of NY/NJ
- **DTNA/IMF Drayage Electrification Project at the Port of NY/NJ**, Chris Grato, International Motor Freight (IMF) and Markus Schwenke, Daimler Trucks North America (DTNA)



View Who's Talking

Please use the Chat box to ask questions during the presentations and if requesting credits, please post your name, followed with either AICP or PE with your PE license number

Please mute yourself when not speaking.

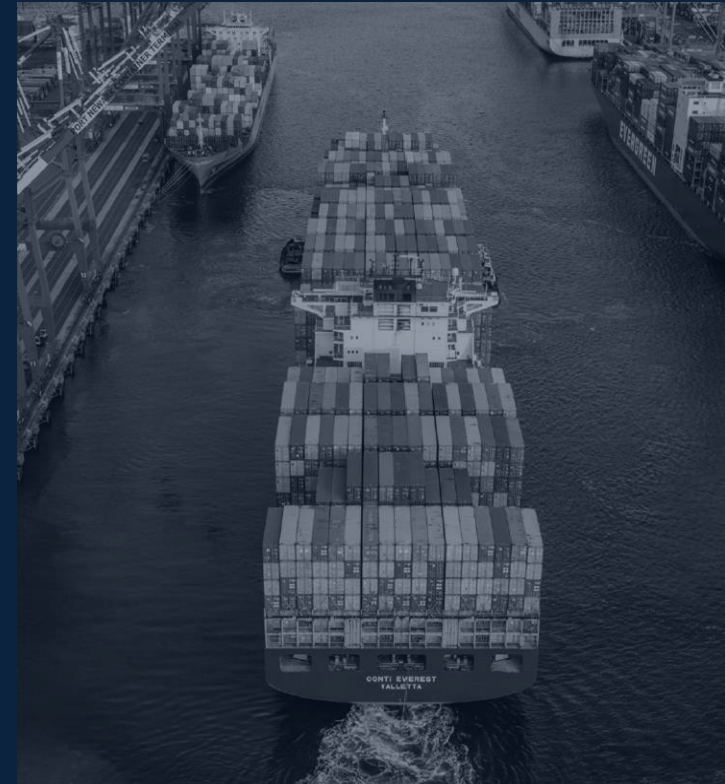
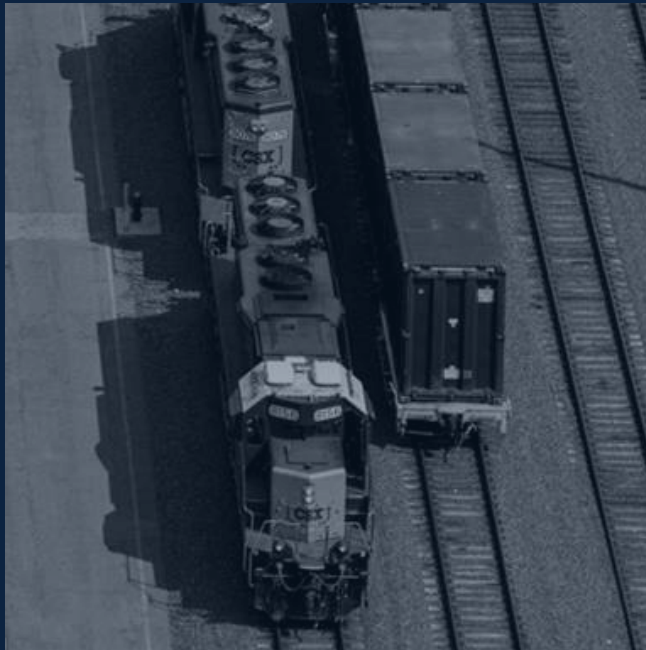
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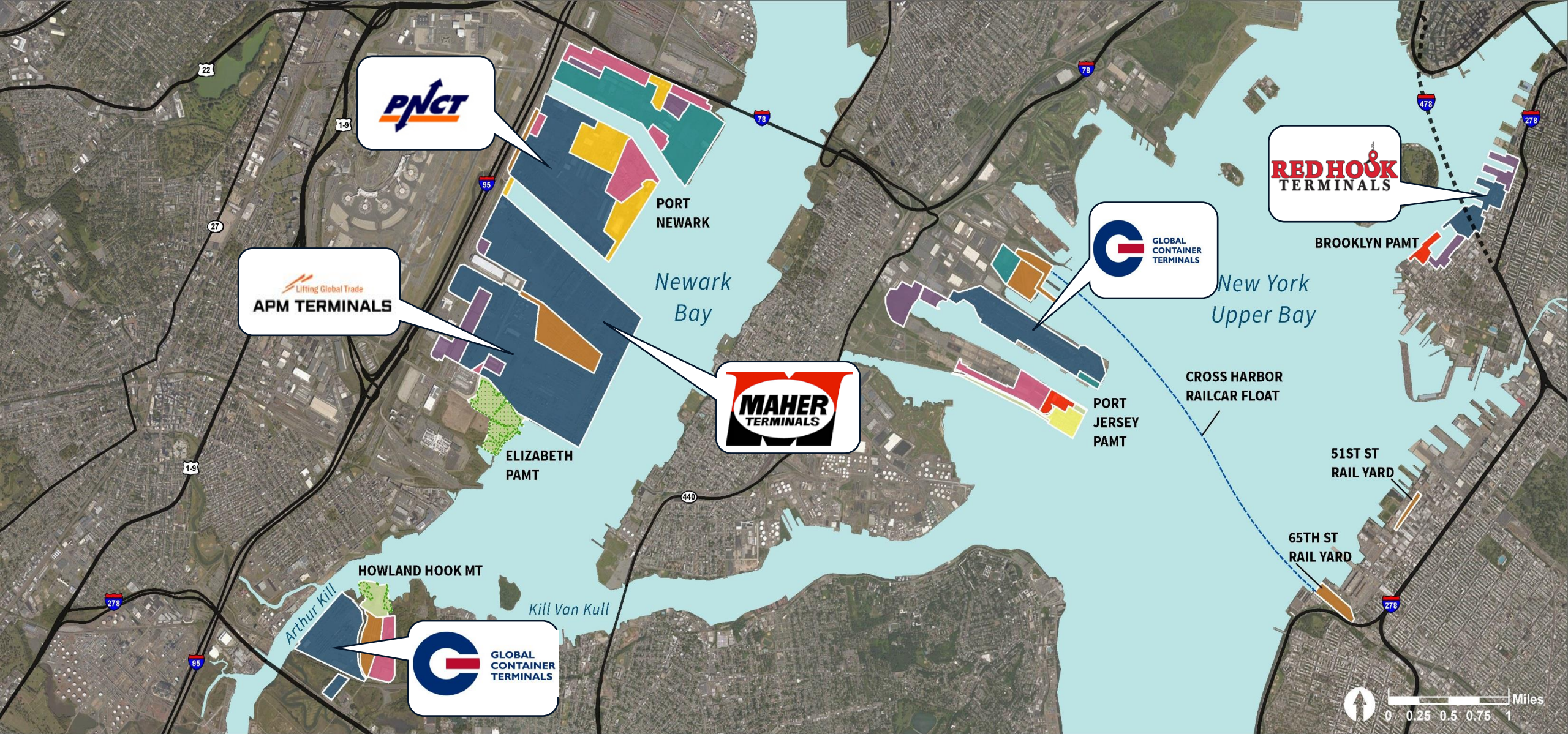
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Annual Port Review

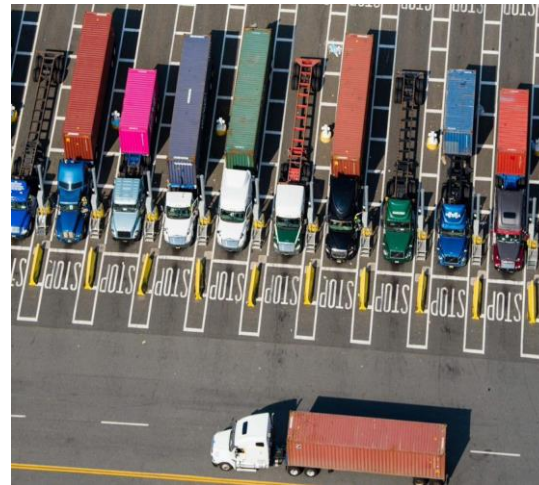
NJTPA FIC
February 16, 2021





More than Containers...

- 3 Auto processors -17.6% in 2020
- 2 Cruise terminals - 91% in 2020
- Various bulk and breakbulk cargo including scrap metal, Belgian block, edible oils, orange juice and cement - 17% in 2020 / OJ +16%
- Project cargo and heavy lift capabilities
- NYNJ Rail (Cross-Harbor carfloat operation)
- Warehousing and distribution, trucking and numerous maritime support industries



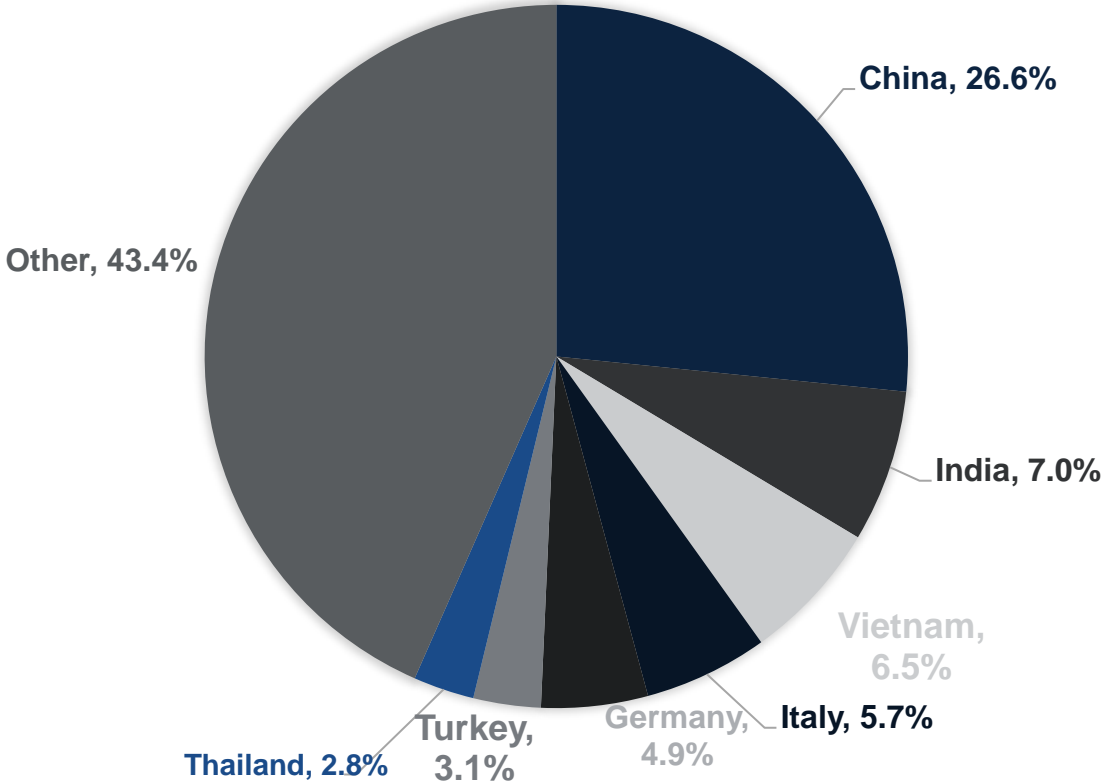
Access to More Consumers



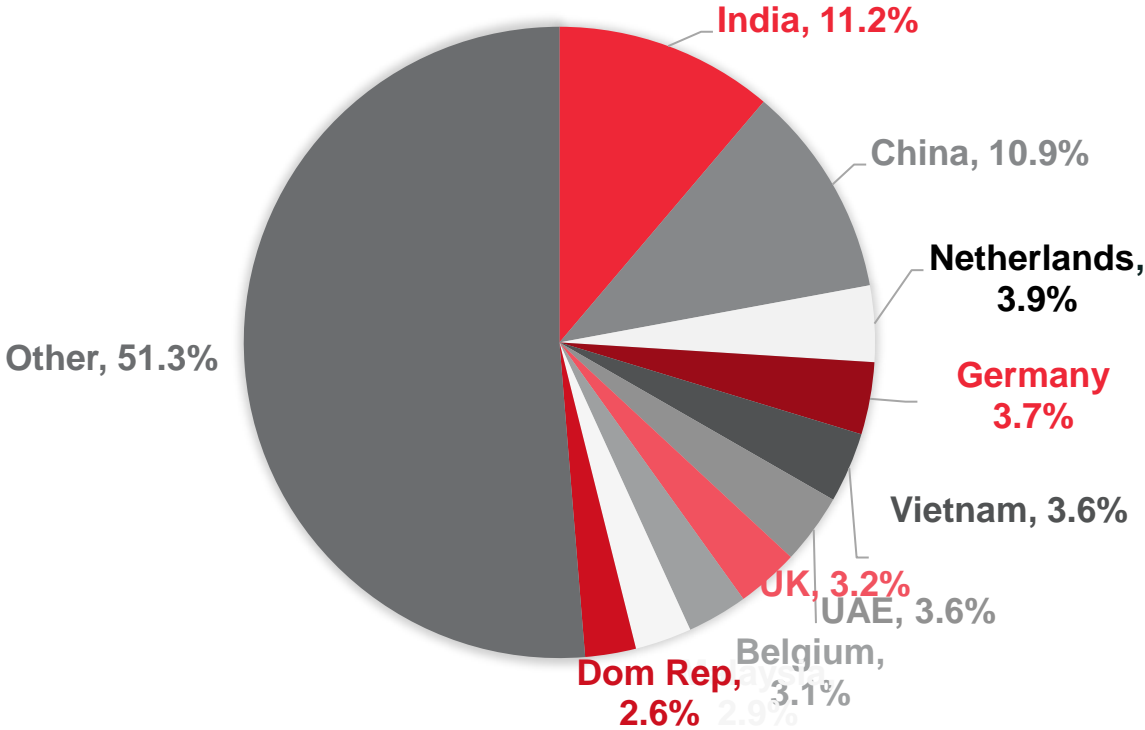
7x Norfolk in 1 hour. 5x Norfolk + Savannah in 2 hours. 3.5 x Savannah in 4 hours.

Top Trading Partners by Country

IMPORTS

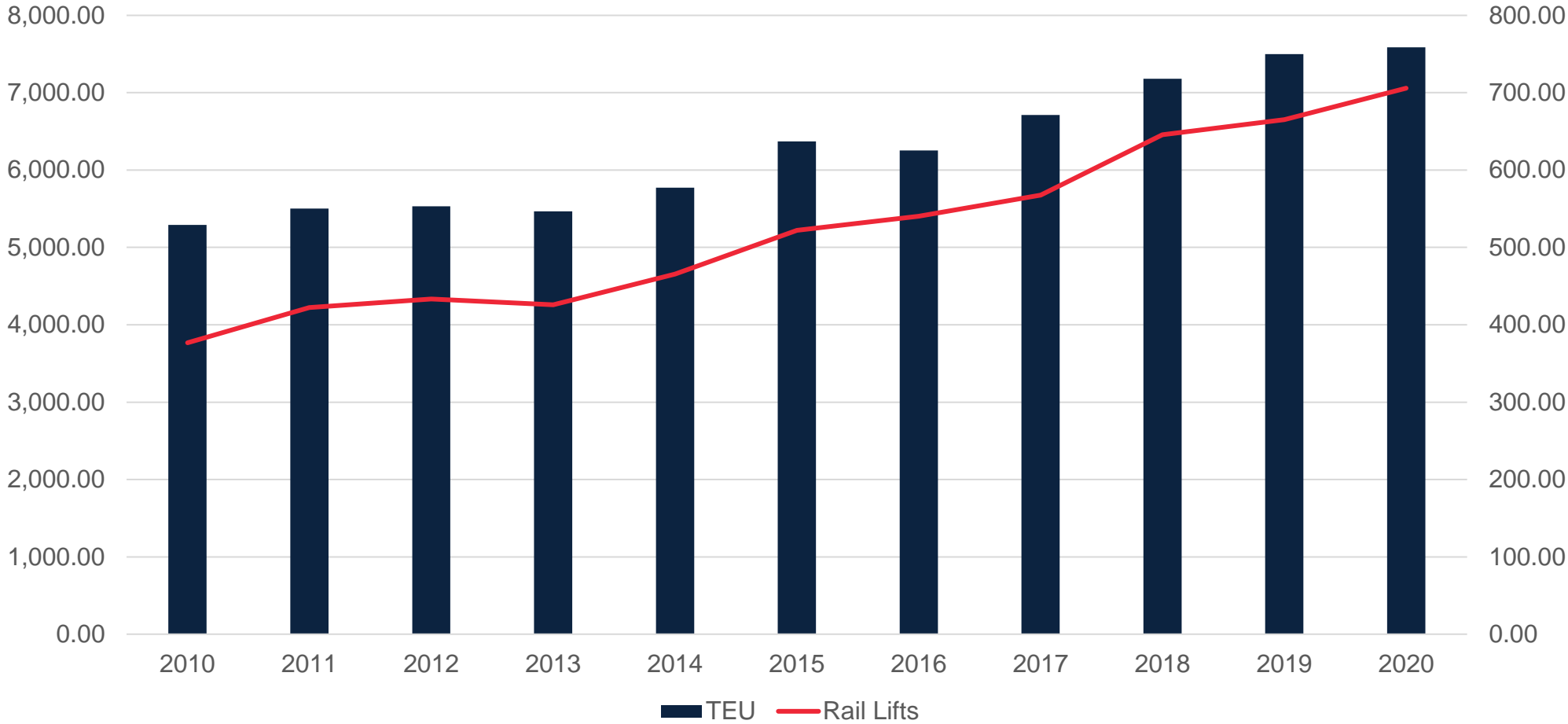


EXPORTS

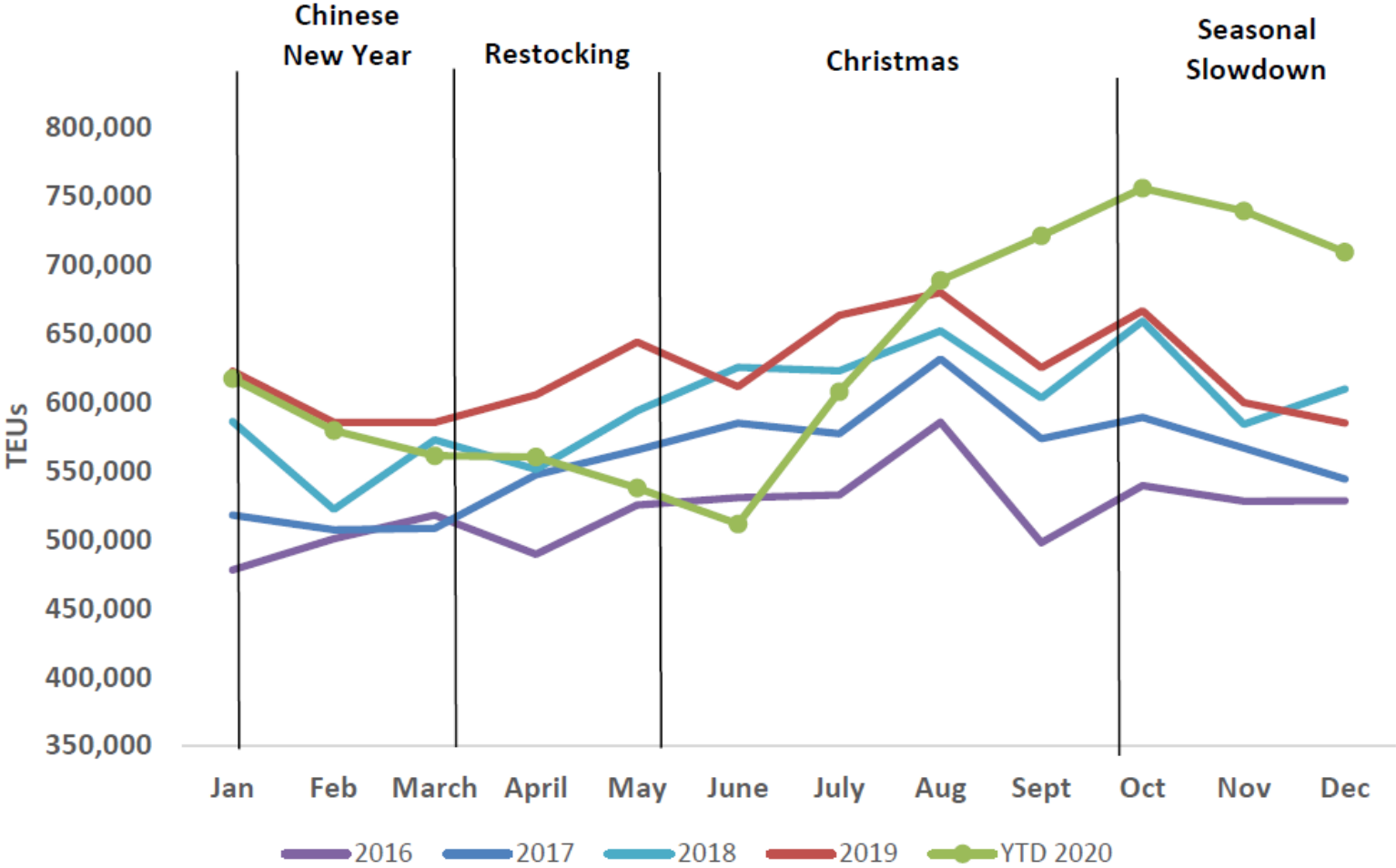


**Based on 2020 activity*

Container TEU Throughput (in thousand units)

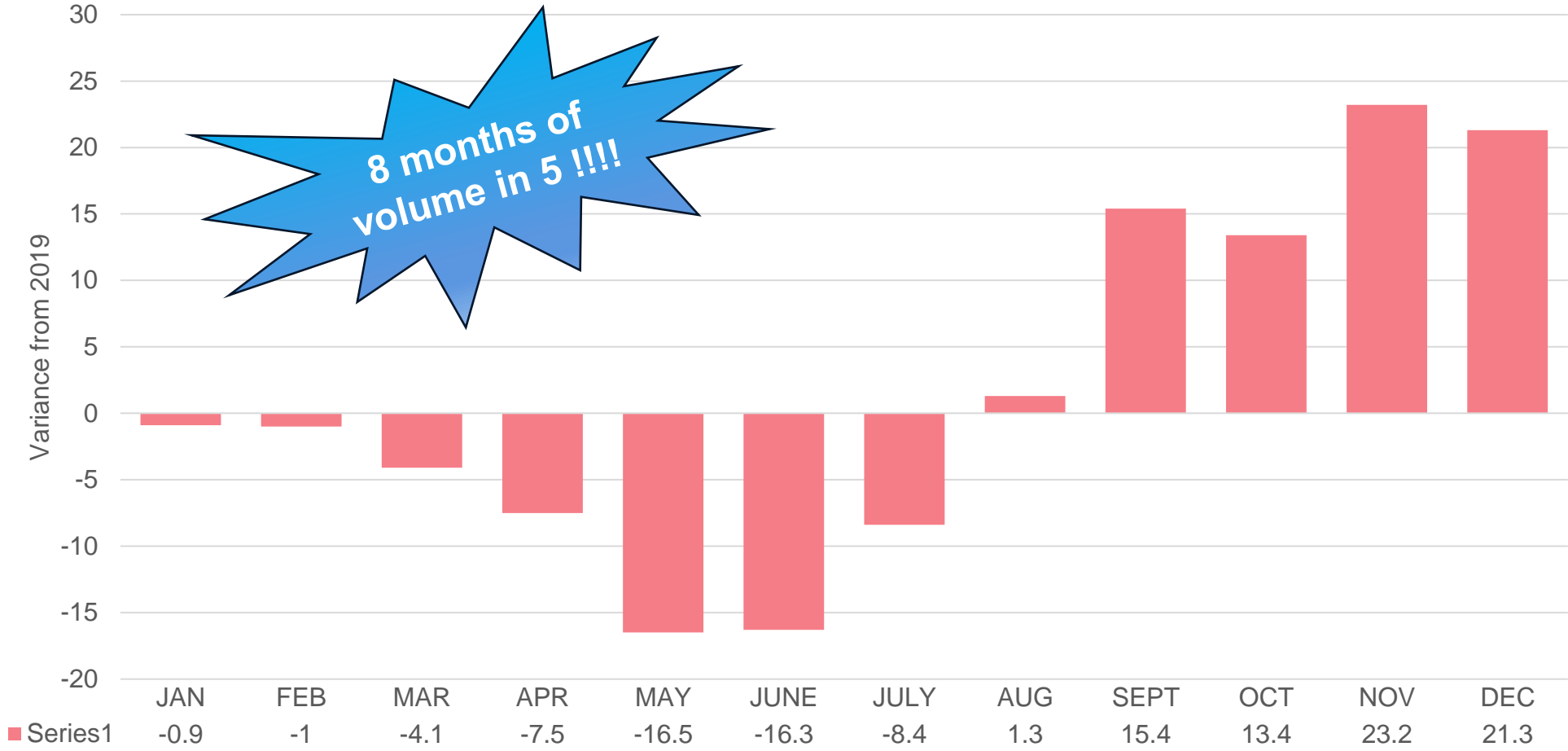


2020 – A Year of Atypical Seasonal Fluctuations



Huge Monthly Fluctuations in 2020

Cargo supply lines have proven to be highly resilient



What is Behind the Numbers?

- **Economic Drivers:**
 - Retail sales stronger than most economists predicted
 - Consumer shift from services and leisure consumption to “stay-at-home” consumption
 - Commodities that cater to the “stay-at-home” economy grew sharply: *furniture, home electronics (computers, printers) cookware, personal fitness equipment, appliances and even wines and spirits.*
- **Supply Chain Drivers:**
 - Hefty inventory replenishment after lock down and shut down of global manufacturing
 - Strategy shift from “Just-in-Time” to “Just-in-Case” inventory
 - Direct to consumer retail channel has accelerated (away from brick & mortar) >30% in 2020
 - Intermodal rail shift from West Coast to East Coast ports.
- **Service Providers:**
 - Ocean carriers have remained remarkably nimble, adding and withdrawing capacity to match demand.
 - Capacity (i.e. chassis, warehouse, drayage trucks) has been especially tight with high demand.

Managing COVID

- Identified as “essential business”
- Health & Safety TOP PRIORITY
- 3 C’s: Communication, Collaboration, Coordination
- Stakeholder Forums led by Port Authority
 - Key Partners
 - Council on Port Performance
 - PPE Working Group
 - Shipper Forum
- Waterfront labor supply
- Metrics driven focus with railroads/weekly calls
- Early Attention on bottleneck issues: chassis supply, weekend operations, box dwell time



Port Master Plan 2050

**Flexible roadmap
for handling
cargo
volumes projected
to double in the
next 30 years**



PHASE I: Maximizing Recent Investments (next 10-15 years)

- **Channel improvements**
- Berth & Wharf Replacement Program
- **Rail & Road Improvements**
 - Port Street Corridor Improvement Project
- Data driven operating efficiencies
- Planning for container terminal expansion
- **Investment in sustainability** and resiliency
- Land Use Planning & Project Teams
- Electric and Communications Master Plan
- Workforce Development
 - Trucker Experience Initiative

Channel Improvement Study

New York New Jersey Harbor Deepening Channel Improvements Navigation Study

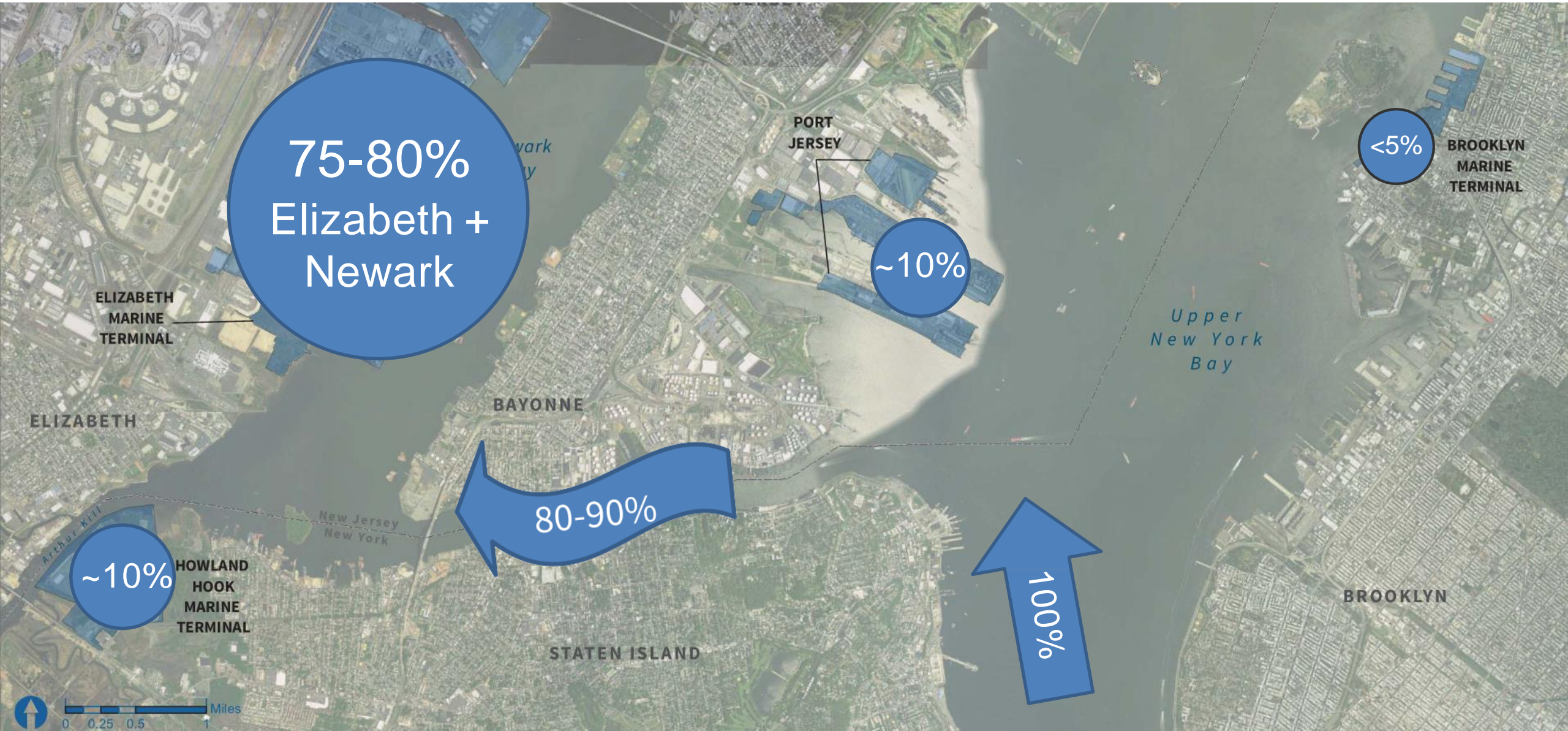
Draft Integrated Feasibility Report and Environmental Assessment



October 2020

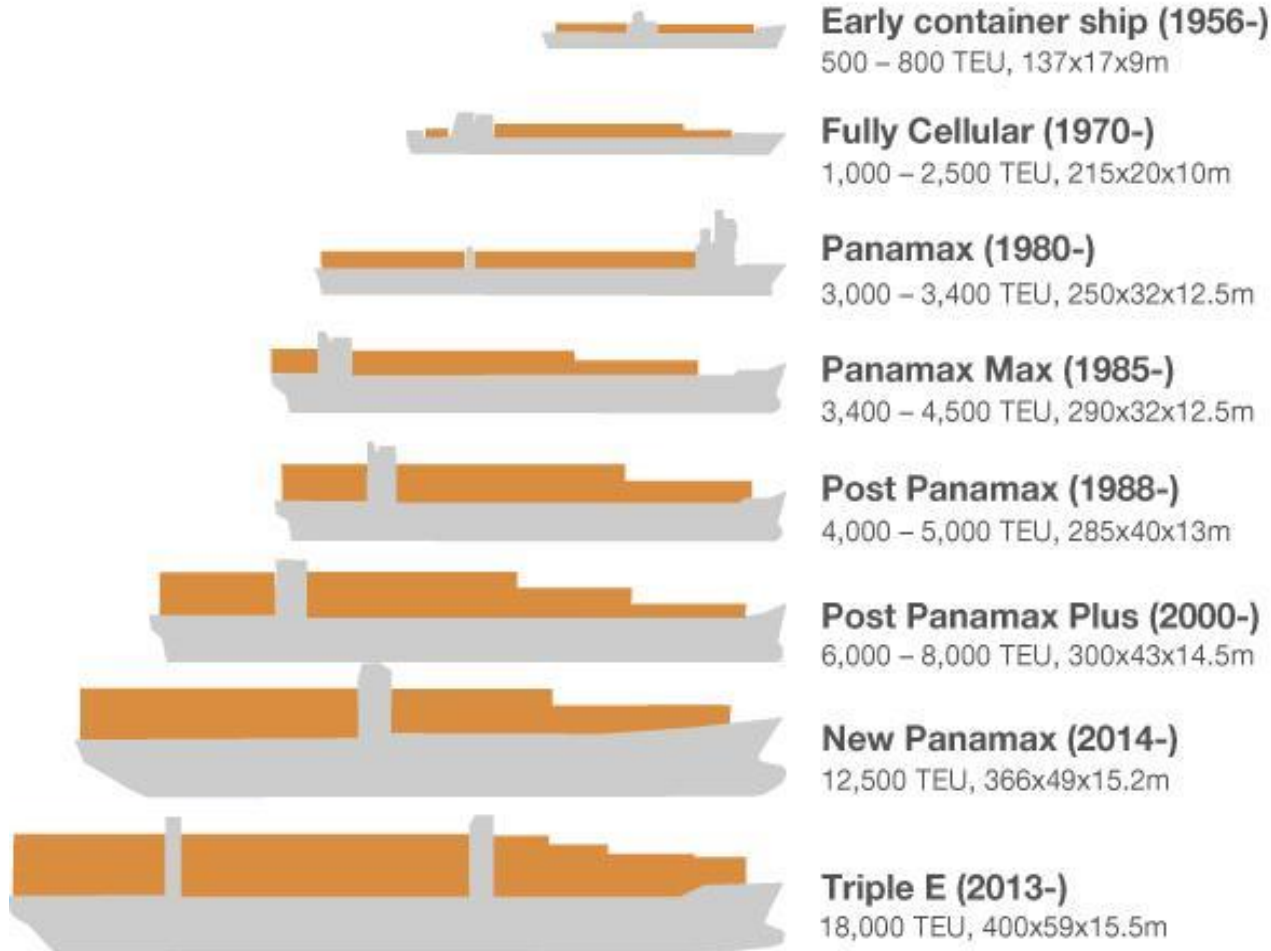


Current Capacity of Port



Container Vessel Classifications

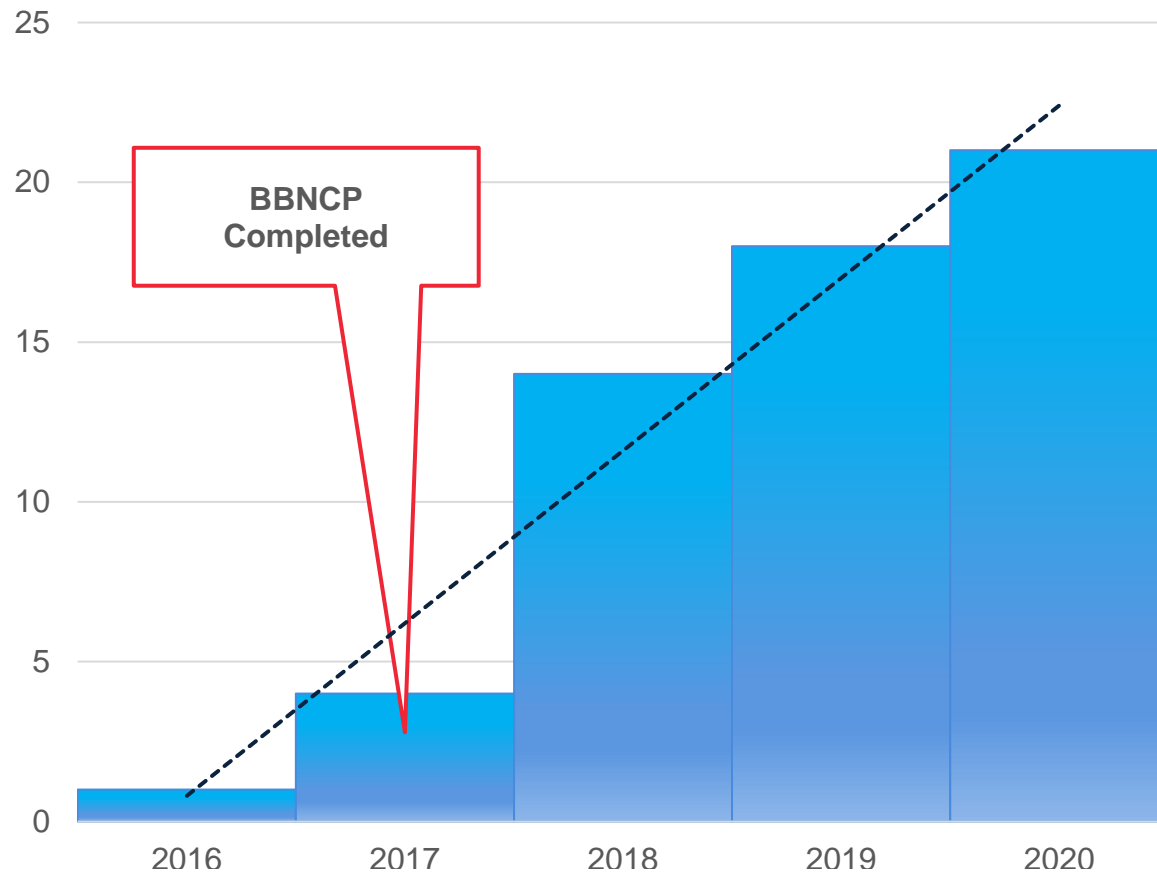
TEU: twenty-foot equivalent units,
length x width x depth below water in metres



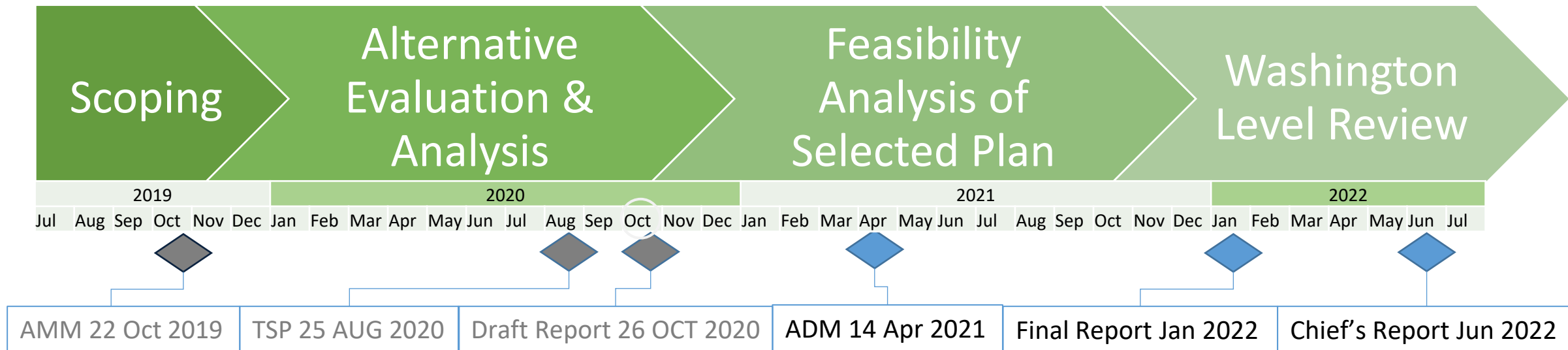
← Regina Maersk (6,400 TEU) 50' HDP Design Vessel

In CY 2016 (before the HDP was even completed), 40% of all container vessel calls were **larger** than the Design Vessel. In 2020, 55% larger than Design Vessel.

Share of ULCVs Increasing Annually



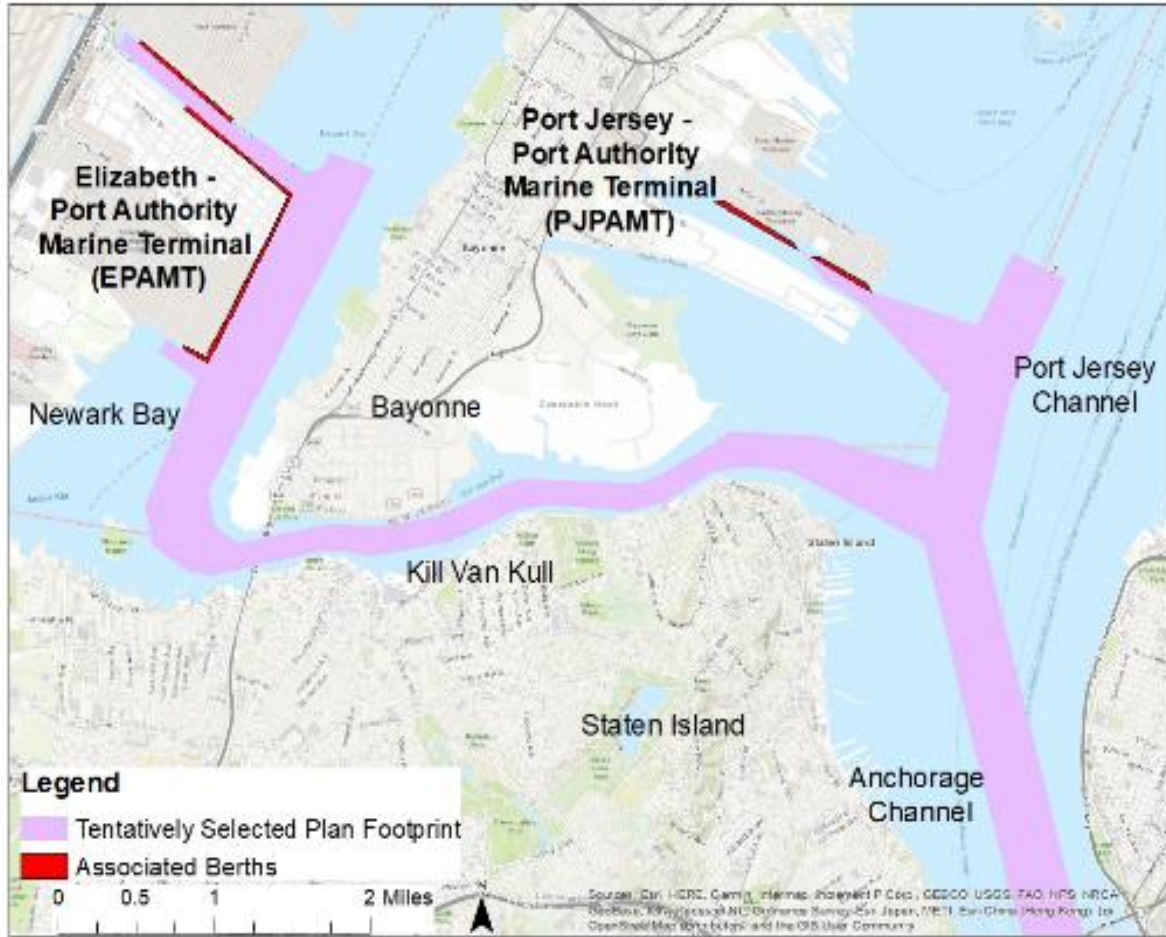
Study timeline



MILESTONE	DURATION [DAYS]	COMPLETION DATE
Feasibility Cost Sharing Agreement Execution		Monday, July 22, 2019
Alternatives Milestone	92	Tuesday, October 22, 2019
Tentatively Selected Plan Milestone		
Draft Report	62	Friday, October 30, 2020
Agency Decision Milestone	170	Wednesday, April 14, 2021
Final Report Transmittal	292	Monday, January 31, 2022
North Atlantic Division Review	35	Monday, March 7, 2022
Approval to Release to State and Agency Review	35	Monday, April 11, 2022
State and Agency Review	35	Monday, May 16, 2022
Chief's Report Signing	35	Monday, June 20, 2022

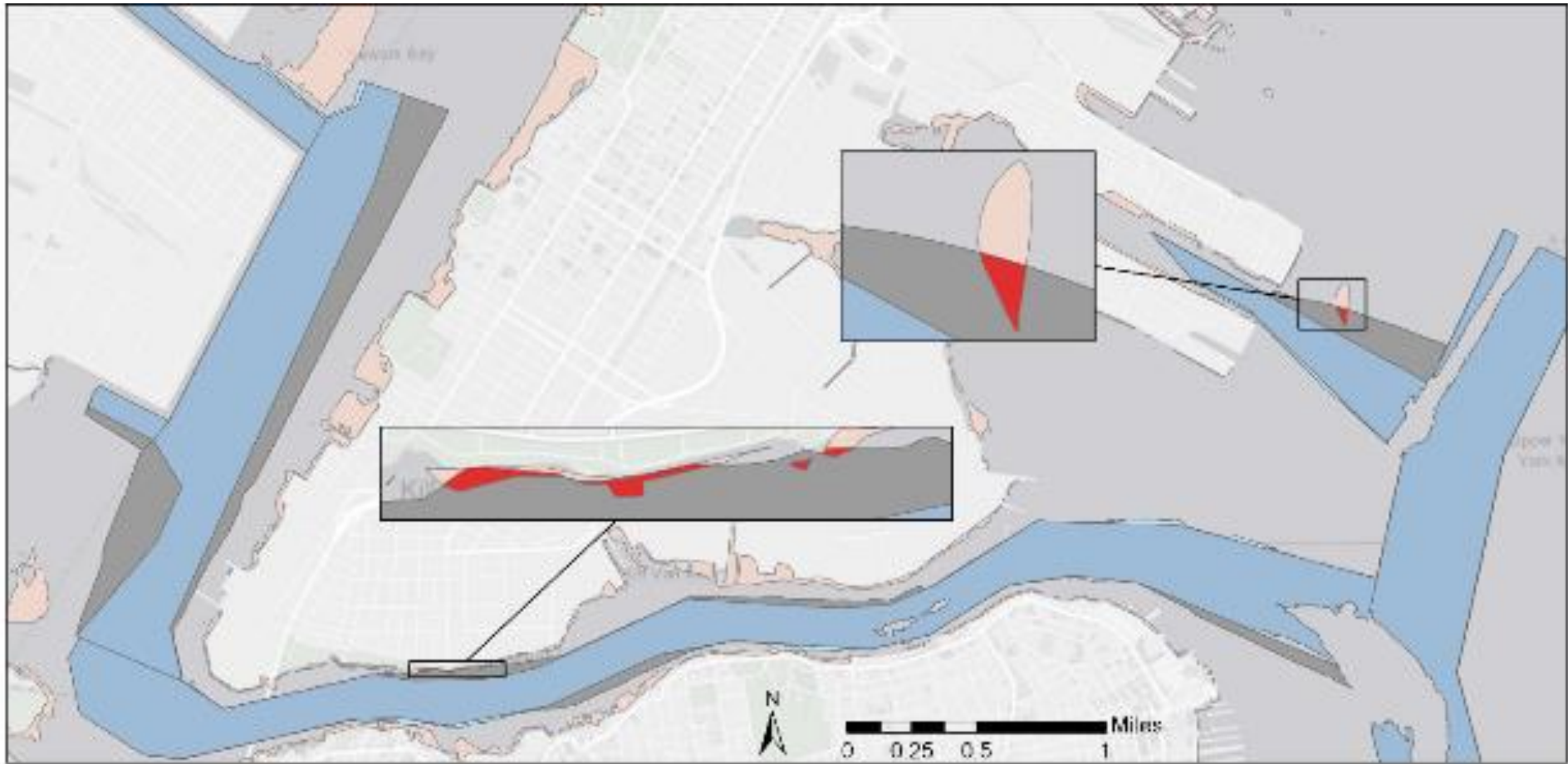


Tentatively Selected Plan



- Pathways to Elizabeth – Port Authority Marine Terminal and Port Jersey – Port Authority Marine Terminal by **up to 5 feet** (up to a maintained depth of -55 feet MLLW).
- Deepening the Ambrose Channel, Anchorage Channel, the Kill Van Kull, Newark Bay Channel, South Elizabeth Channel, Elizabeth Channel, and Port Jersey Channel to EPAMT and PJPAMT **by 4 feet** (to a maintained depth of -54 feet MLLW).
 - This is the National Economic Development plan because it maximizes net benefits.
- Additional analysis will be completed to confirm the National Economic Development plan.

Project Components



Blue –to be deepened

Light Blue - slopes to be adjusted








Grey – channel widening

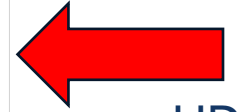
Red – Habitat remediation

What's Next in the PONYNJ?

Super Ultra Large Container Vessels (**SULCVs**)

Each of these vessel classes
can clear the Bayonne
Bridge

Vessel		Capacity	LOA	Beam	Draft	Air Draft
Maersk Triple E		18,000	1309'	194'	52	187
COSCO Capricorn		19,200	1,312'	192'	53'	223'
MOL Truth		20,000	1,312'	192'	53.5'	243'
COSCO Nebula		21,200	1,311'	192'	53.5'	248'
OOCL Hong Kong		22,000	1312'	200'	52'	241'
Hyundai		23,000	1,310'	202'	54'	245'
MSC Gulsun		23,756	1,312'	203.5'	54'	
HMM Algeceris		24,000	1,410'	197'	55.7'	249'



HDCI
Design Vessel

Channel Improvements - Next Step



Decision Point: 4' or 5' ?



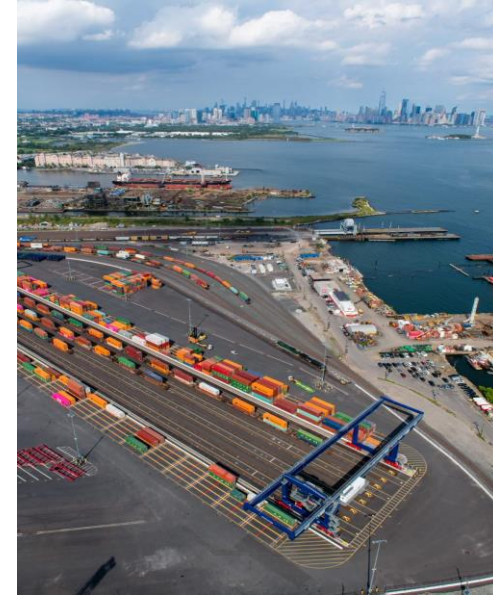
- Review USACE [Integrated Feasibility Report and Environmental Assessment](#)
- THINK SAFETY and EFFICIENCY NOW and CAPACITY and CAPABILITY 20-30 years out.
- Submit comments via email to HDCI_FREAComments@usace.army.mil
 - Support deepening of a minimum of 5'
 - Provide details such as:
 - Importance of a safe and efficient navigation system for overall Port ecosystem, projections of future trade growth, jobs supported, economic activity, environmental benefits, etc.

Intermodal Rail



Intermodal Rail

- Four on-dock ExpressRail facilities serving all six marine terminals
- Two Class I railroads, CSX and Norfolk Southern
- 6.2% increase in rail cargo over 2019
- **Current Focus Areas:**
 - Service delivery / reduced dwell
 - Rail car supply
 - New O&D's for ExpressRail Newark and Port Jersey
 - Target outreach to increase export cargo
 - Waverly Loop – off terminal storage track
 - Southbound Connector Design



Environmental Sustainability

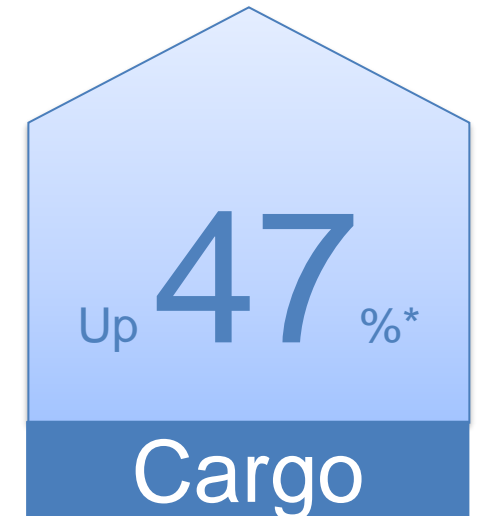
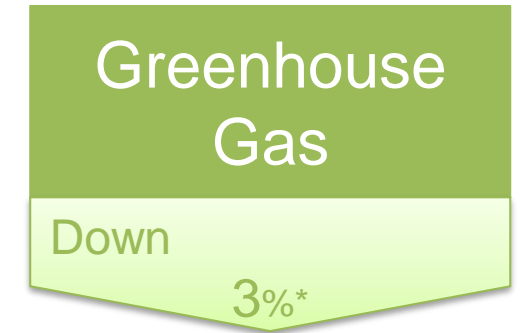
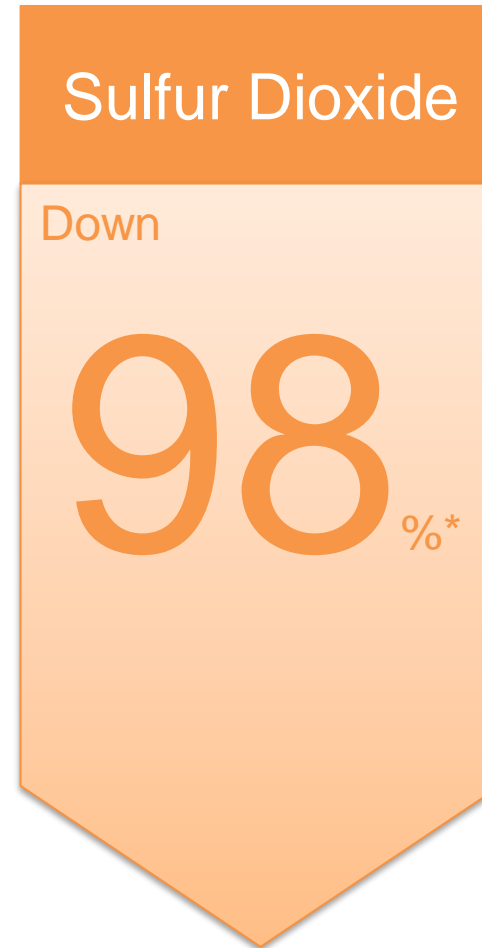
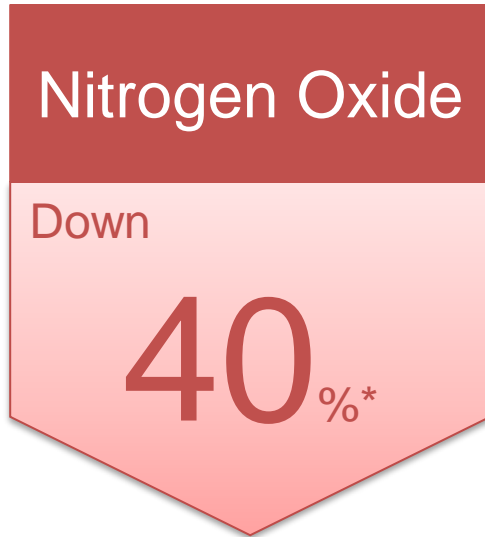


A Clean Air Strategy for The Port of New York & New Jersey

Final – October 21, 2009



2019 Air Emissions Inventory



Equivalent to 390,000 cars off the road**

250,270 vehicles registered in Manhattan***

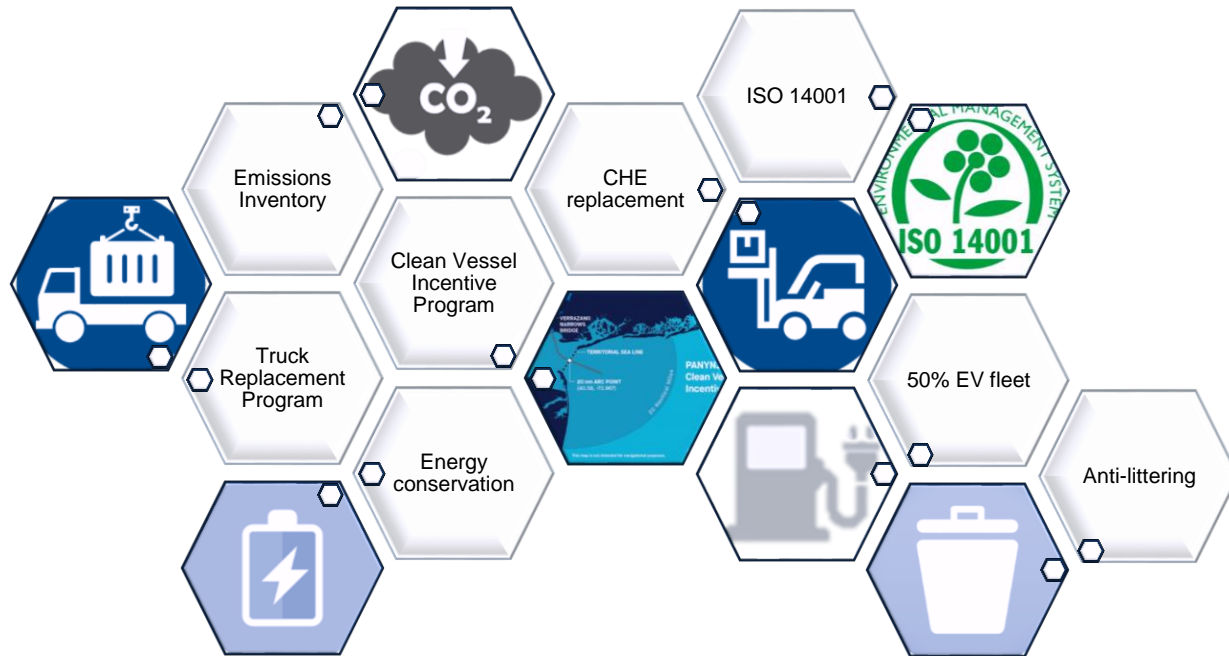
*Compared to 2006 Levels

**Average Annual Emissions and Fuel Consumption for Gasoline-Fueled Passenger Cars and Light Trucks Emission Facts, 2008, EPA

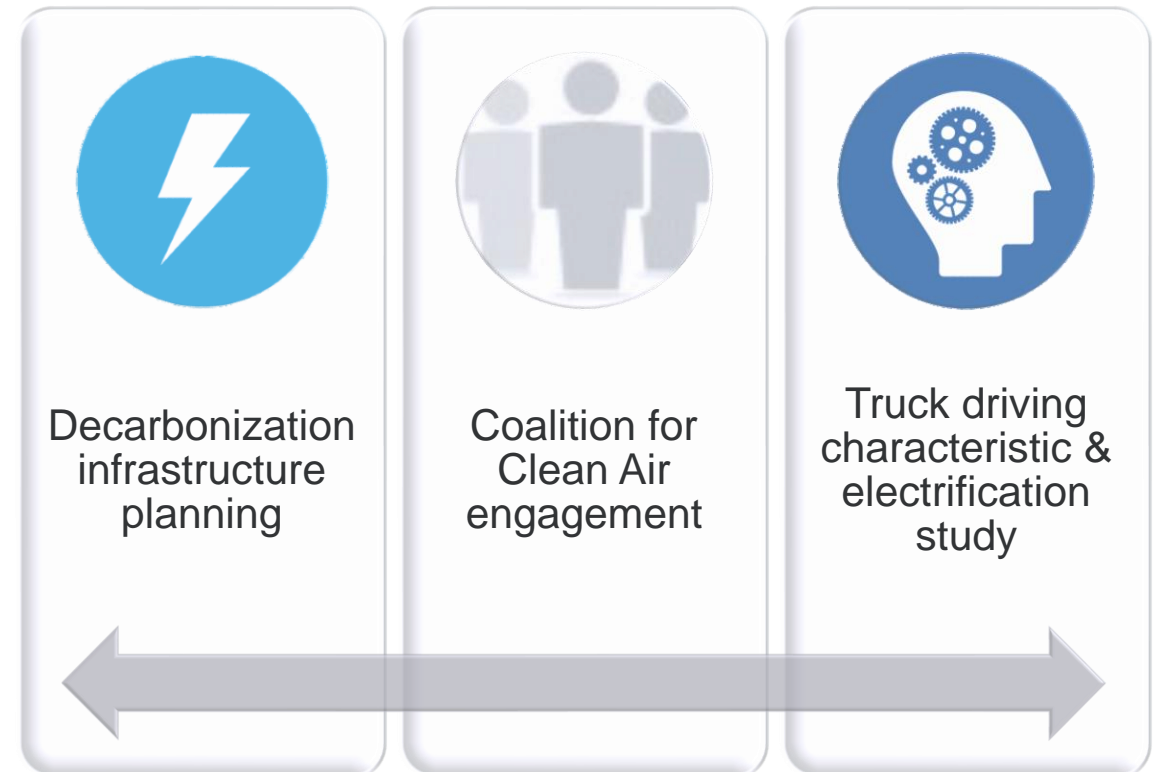
***<https://dmv.ny.gov/statistic/2018reginforce-web.pdf>

2021 Port Environmental Initiatives

Continue



Planned




Why the Port of New York and New Jersey?




Access

- Access to 46.3 million consumers within a 4-hour drive
- 1 billion square feet of warehouse and distribution space within 50 miles
- 41 weekly ocean carrier services
- Over 75% first port of call



Capabilities

- 7.5 million TEUs handled in 2020
- 29,000 feet of berths for container business
- Over 75 STS cranes, 1,200 units of additional CHE and almost 5,500 reefer plugs
- Ability to handle >18,000 TEU vessels
- Handle nine 14,000 TEU vessels at once



Capacity

- 6 Marine terminal operators
- Port-wide intermodal ExpressRail system
- 1.5 million annual rail lift capacity
- Truck fleet of 9,000 frequent callers
- Port Master Plan



Investment

- \$3 billion from MTOs over a 15-year period
- Berth improvements
- Raised Bayonne Bridge
- Harbor Deepening
- Roadway enhancements
- Technology initiatives



Thank you

The Port Authority of NY & NJ
Port Department

Bethann Rooney

berooney@panynj.gov

(212) 435-4215

Deputy Port Director



@PortNYNJ



www.linkedin.com/showcase/portnynj

www.panynj.gov
www.portnynj.com

www.panynj.gov/port/en/publications.html
www.panynj.gov/port/en/our-port/facts-and-figures.html

DAIMLER

DTNA/IMF: Drayage Electrification introduction

Freightliner eMobility/IMF

February 2021



Agenda

01



Introduction to Freightliner eMobility

02



Freightliner eMobility Program Overview

Program & Commercial Update

eConsulting Overview (use cases & applications, test fleet insights)

Infrastructure Insight (charging requirements & infrastructure consulting services)

03



IMF Project and Use Case feasibility

04



Live Q&A

⚡ Change isn't just on the horizon.
It's on the road.

eCASCADIA

504073



Freightliner eMobility Program Overview



Program & Commercial Update



Benefits of BEV to our customers, the environment and a better driving experience



Lower Expense

- Reduced fuel costs
- Lower maintenance costs
- Lower total cost of ownership (TCO)



Environmental

- Zero tailpipe emissions
 - Eliminates toxic diesel PM
 - Climate friendly
 - Dramatic reduction in NOx
- Cleaner working environment



Functional

- Torque/acceleration
- Quiet operation
- Driver satisfaction
- No diesel odor

While we have smaller fleets running as part of pilot projects, we have full focus on our volume production product



Pilot Project trucks in the news with various customers

SCHNEIDER Services Industries Centers Resources Company

Schneider to test electric trucks as part of Freightliner's customer experience (CX) fleet

Transportation provider's learnings from eCascadia to assist with large-scale deployment of electric trucks



President's Choice: Loblaw prepares for a future with electric vehicles



By John G. Smith
January 27, 2020



J.B. HUNT The Transportation Logistics Company

Home News Blog Careers

Home » News » J.B. Hunt makes first company delivery using the all-electric Freightliner eCascadia



J.B. Hunt makes first company delivery using the all-electric Freightliner eCascadia

Daimler Trucks North America
71,182 followers

We're looking forward to gaining important feedback from the team at Sysco that will contribute to the ongoing design and purposeful innovation of our battery-electric trucks. Together we are **#LeadingTheCharge** to a more sustainable future.

Sysco
126,221 followers

We are testing an all-electric Freightliner eCascadia from Daimler Trucks North America (DTNA). Sysco's participation in this initiative is part of our commitment to our people, products, and the planet. And our ongoing efforts to do more.



Sysco Testing All-Electric Freightliner Truck

Daimler Trucks North America
71,182 followers

Real e-mobility solutions for the real world. **#LeadingTheCharge**

Ryder System, Inc.
105,240 followers

We are excited to introduce the Freightliner E-Cascadia and DM2 electric trucks into the Ryder Dedicated Transportation Solutions fleet where the EVs will be supported by the newly installed DC fast chargers by our partner in-charge.



The New York Times

Big Rigs Begin to Trade Diesel for Electric Motors

Tractor-trailer fleets will take time to electrify, and start-ups and established truck makers are racing to get their models on the road.



Alan David - 3rd -
Sr. Data-based Pricing Analyst - Dedicated Pricing at Knight-Swift Transportation

Knight-Swift Transportation Holdings Inc. Announces New Sustainability Initiative and Deployment of Zero-Emissions Vehicle. <https://lnkd.in/g/HSDBkd>



Penske Transportation Solutions @PenskeNews - Jul 30

#Penske Truck Leasing's #ElectricVehicle program welcomes customer @CoraMarkHQ: www.youtube.com/watch?v=Qe50AMX7 @SouthCoast @freightliner @DaimlerTrucksNA #EVs



Specification targets for series production vehicles in 2022



eM2

Designed for Pick-Up and Delivery Application

Truck Class	6-7	GVWR	26K to 33K lbs
Battery Size	Up to 315 kWh	Horse Power	300 hp (224 kW)
Range	230 miles	ePTO option	(Class 7 Reefer)



eCascadia Day Cab

Designed for Distribution Application

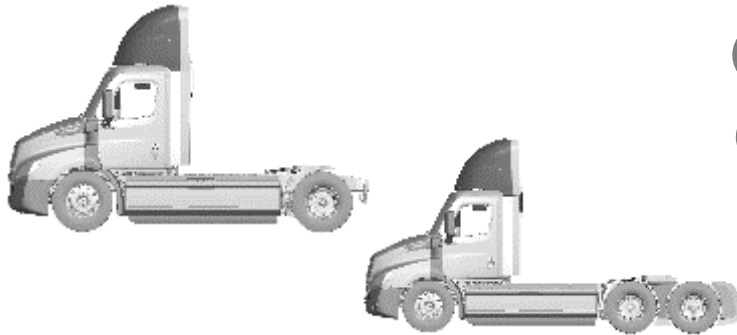
Truck Class	8	Max GCW	82,000 lbs
Battery Size	Up to 475 kWh	Horse Power	525 hp (391 kW)
Range	250 miles	Axle Configurations	6x4 or 4x2

*Vehicles pictured are not representative of final series-intent design

Configuration:

Truck Configurations for Series Production

eCASCADIA



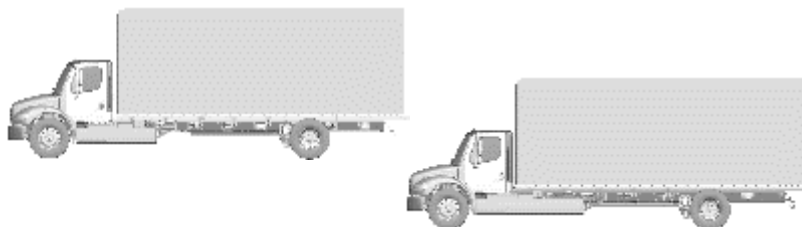
Launch Group 1

- ✓ CI8 | 4x2 | 3x3 battery (475kWh)
- ✓ CI8 | 4x2 | 3x2 battery (315kWh)
- ✓ CI8 | 6x4 | 3x3 battery (475kWh)

Launch Group 2

- ✓ Option: Dual charging port for 475kWh battery
- ✓ Option: AeroX package for 4x2 & 6x4

eM2



- ✓ CI6 | 4x2 | 2x2 battery (210kWh)
- ✓ CI7 | 4x2 | 3x2 battery (315kWh)
- ✓ Option: ePTO for "Reefer"

The customization of eTrucks will be limited – especially in the beginning.

eConsulting approach

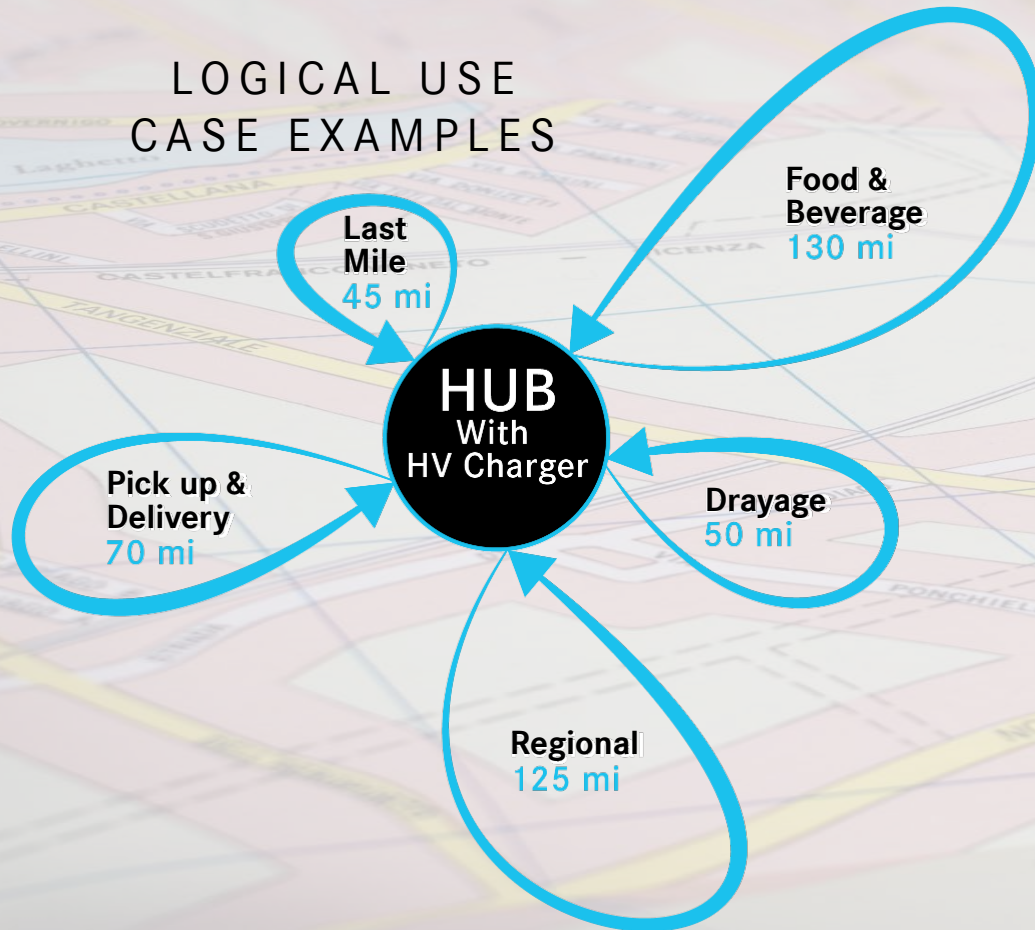


Deployment of eTrucks goes beyond the vehicle – the entire electrical eco-system needs to be developed



First Target Application: Dedicated, Repeatable Routes

LOGICAL USE CASE EXAMPLES



Benefits:

- Reduce noise/air pollution & greenhouse gasses at tailpipe
- Specific regional advantages i.e. taxes, incentives, parking
- Innovative vehicles with sustainable technology
- Improved driver experience and increased driver retention

Customer feedback and learnings from our testing



“This thing is **whisper quiet**, I don’t need to crank my radio up”

“I don’t **smell** like diesel”

“Other drivers **ask about it** – they can’t believe it”

“I love the **regenerative braking**”

“This rig is **stable** with no turn”

Less fatigue at the end of the day

Easier pre- and post-trip inspection

Low center of gravity provides nice ride comfort – especially when turning

Infrastructure approach



Charging Infrastructure is a multi-faceted, sometimes complex topic.
Our customers will look to us and the dealerships for knowledge.



Update - Portland "Charging Island" - Customer Interaction Center

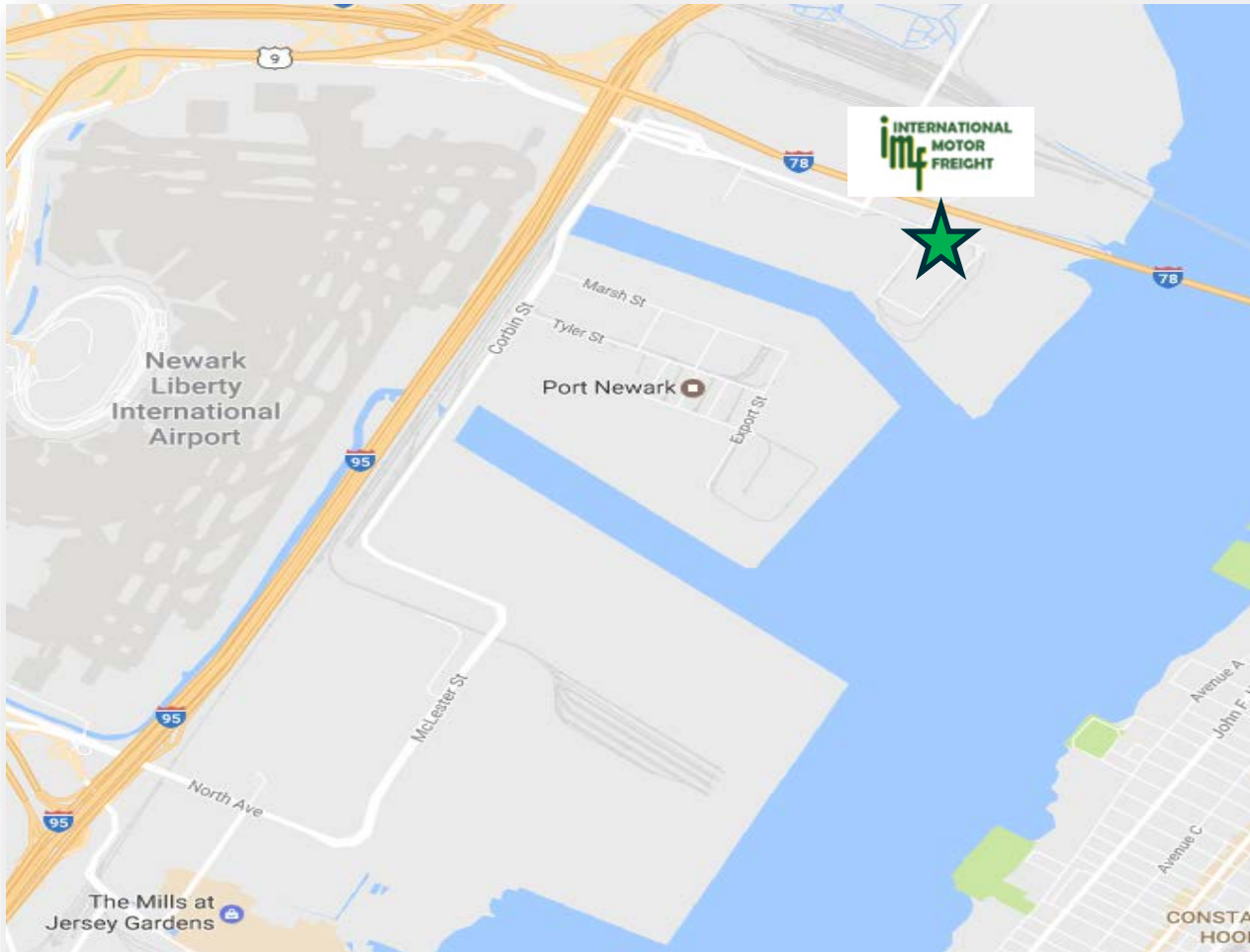
- Dealership and Customer Interaction with Charger HW
- Durability testing and benchmarking of DC Fast Chargers
- R&D of future charging technologies



IMF Project and Use Case feasibility



IMF company profile



- **Family-owned**
- **100 trucks in operation** (all Freightliner)
w/ rather old trucks (**50 MY 2013 and older**)
- **24/7 operation**
- **Located right in the port area/**
Access to all terminals
- Supported by **Campbell Freightliner** dealership

IMF use case is very electrifying



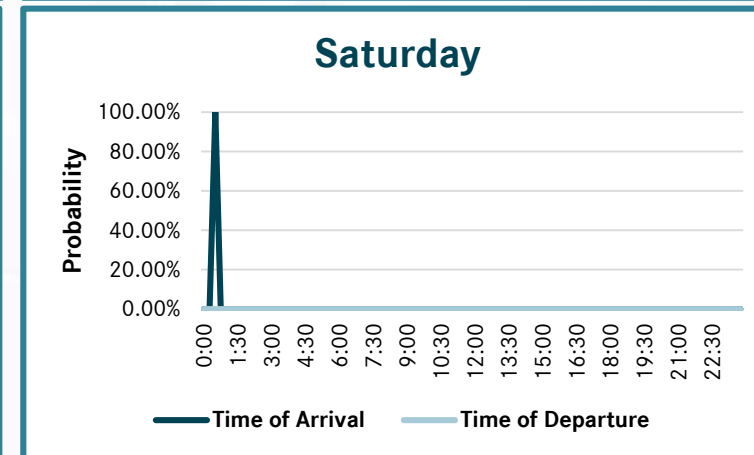
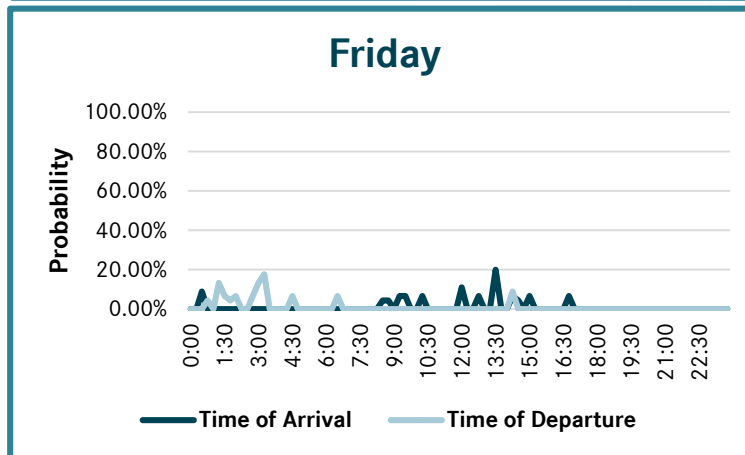
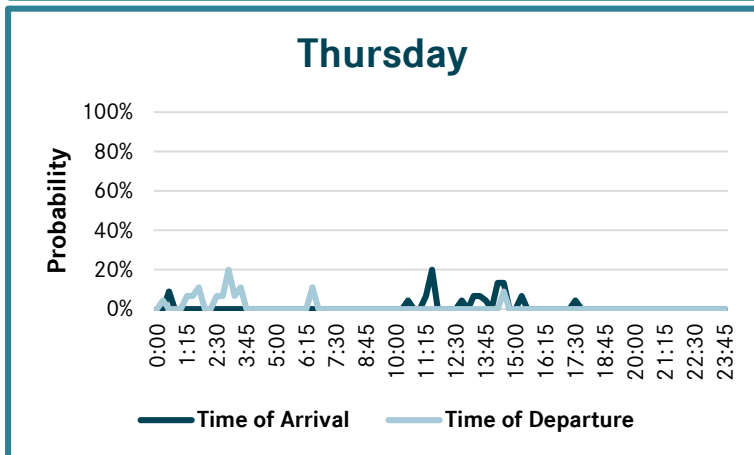
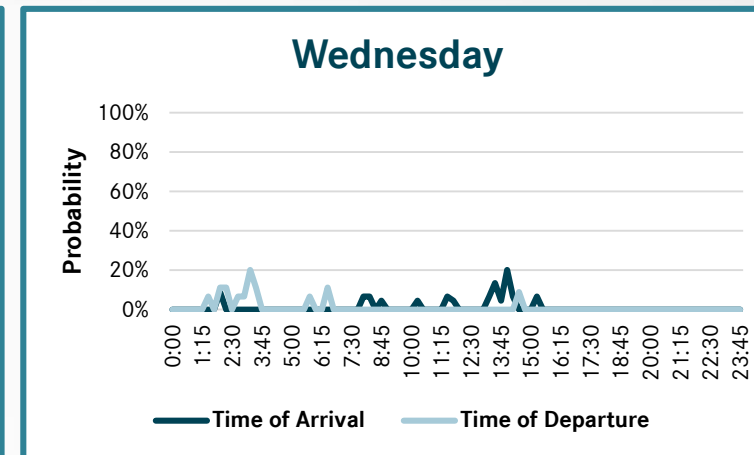
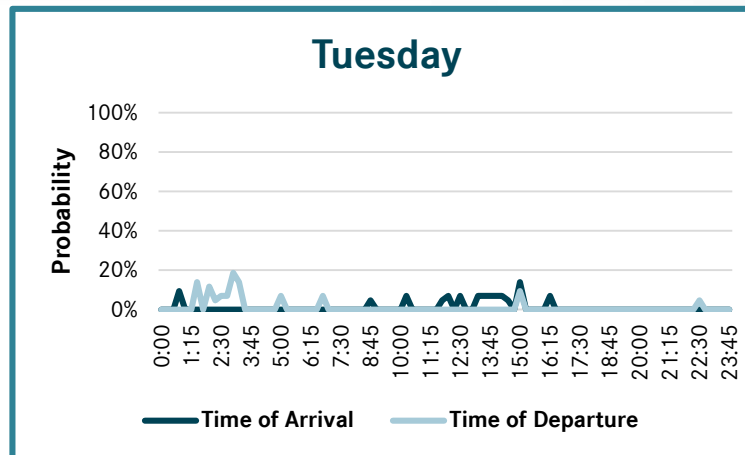
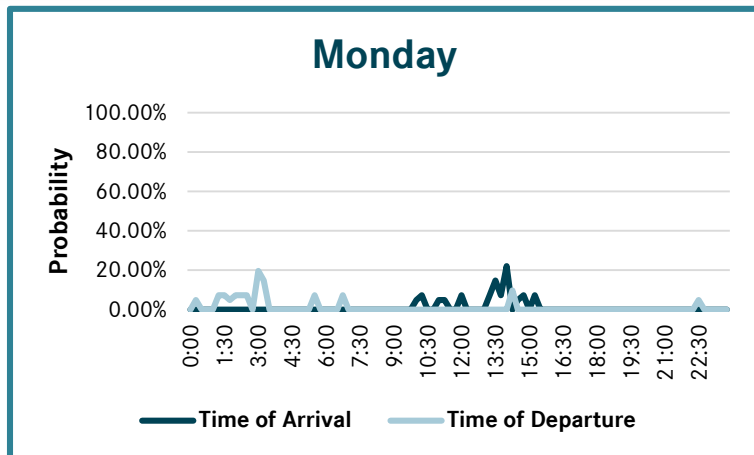
Use Case:

- Serving customers that **are pressing for lower emissions**
- Drayage (out of the port) operation
- **150 mile to 300 mile daily trips, 5-6 days a week operation**

Geographical:

- **Port Newark–Elizabeth Marine Terminal and Packer Terminal, PA, are primary pick up points**
- Primarily deliver **cargo to customers along the I95/NJ turnpike** between the **NYC and Philadelphia**

Charging windows based on today's operation will mainly be in between 4 pm and 2-3 am



Operating times show that IMF will primarily be charging in between 4pm and 2-3 am in the morning

Q&A



Backup



Why does it take until 2022 for Start of Production?



Safety Testing

Tests overall vehicle and components against stringent internal and industry safety standards



Compliance Testing

Ensures system functions in accordance with federal, state, and local regulations



Functional Testing

Validates vehicle design requirements and ensures all system functions are safe



Reliability Testing

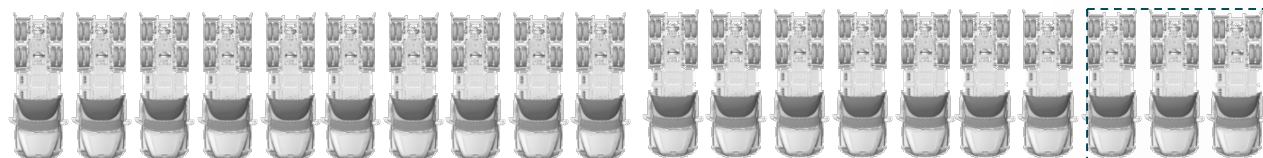
Tests components and systems to identify design issues and validate against durability and reliability requirements

date

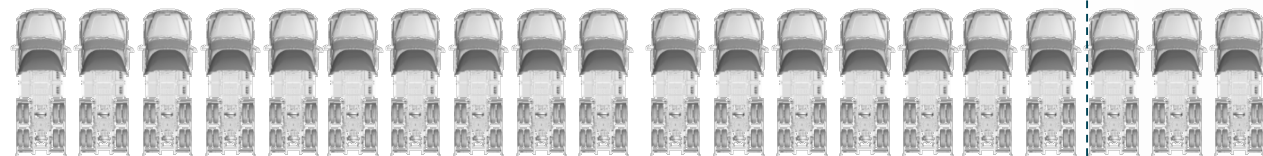
IMF site concept (draft!) with “public” charging capability

Exemplary/
Non-dimensional

Overnight charging area

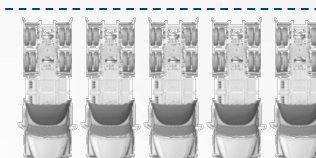


17 - 20 stations (250/350A **2-cable**)

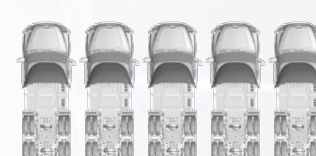


17 - 20 trucks can charge @ up to 100kW,
34 - 40 trucks can charge @ up to 50kW

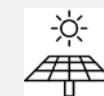
“Public” charging area



10 - 16 fast-chargers
(up 500 A cable)



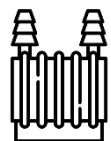
5 - 8 trucks can charge @ up to 400 kW,
10 - 16 trucks can charge @ up to 200 kW



Solar
(550 kW)



Batt. Storage
(2 - 3 MW)



Transformer
(up to 5kVA MV:480V)



Switch gear



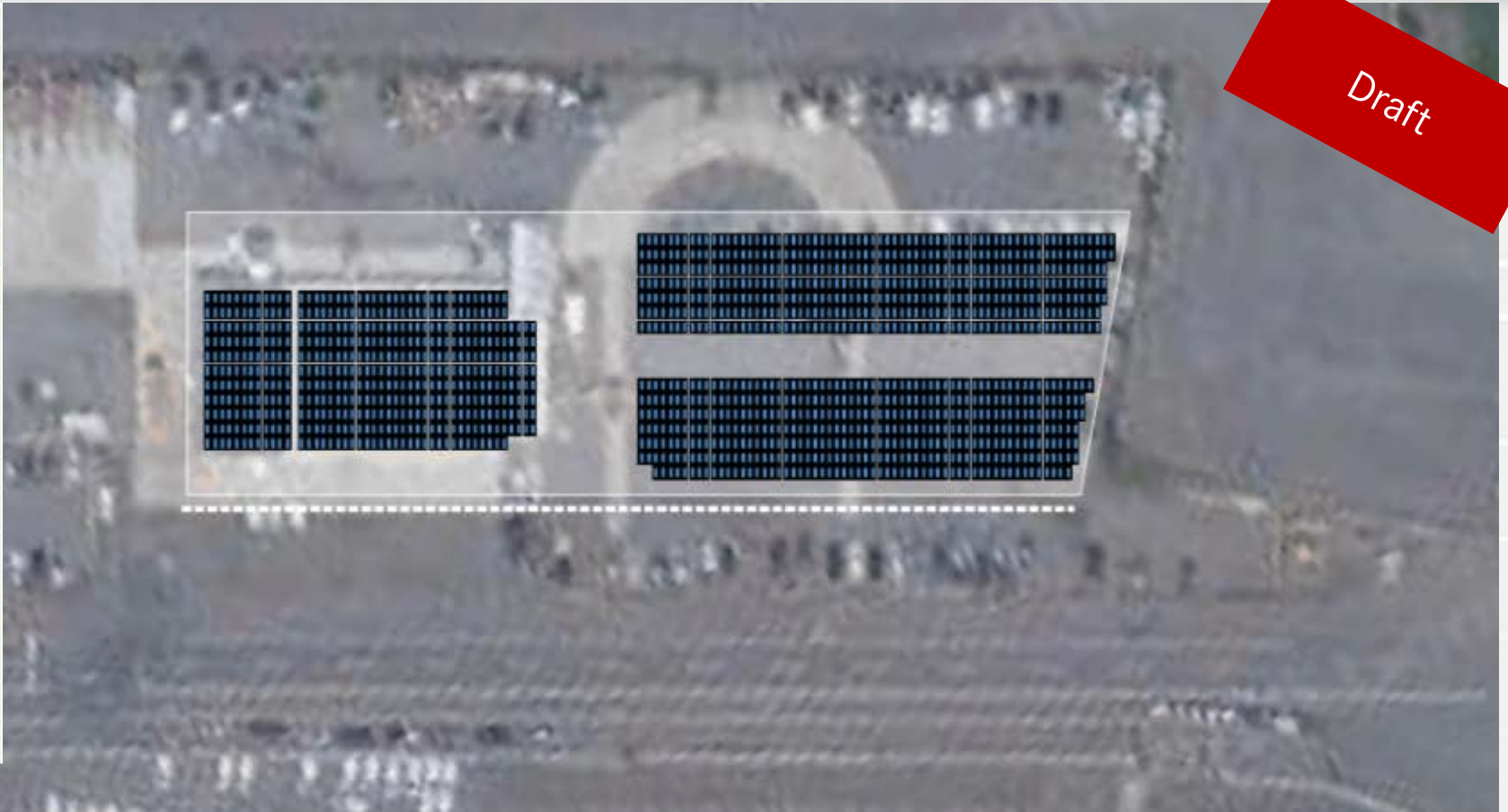
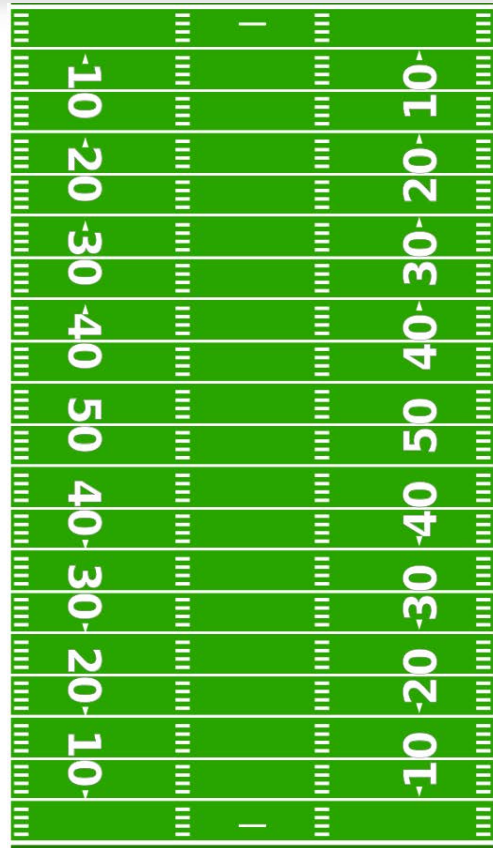
Power Electronics
(2 MW)



Power Electronics
(2 MW)

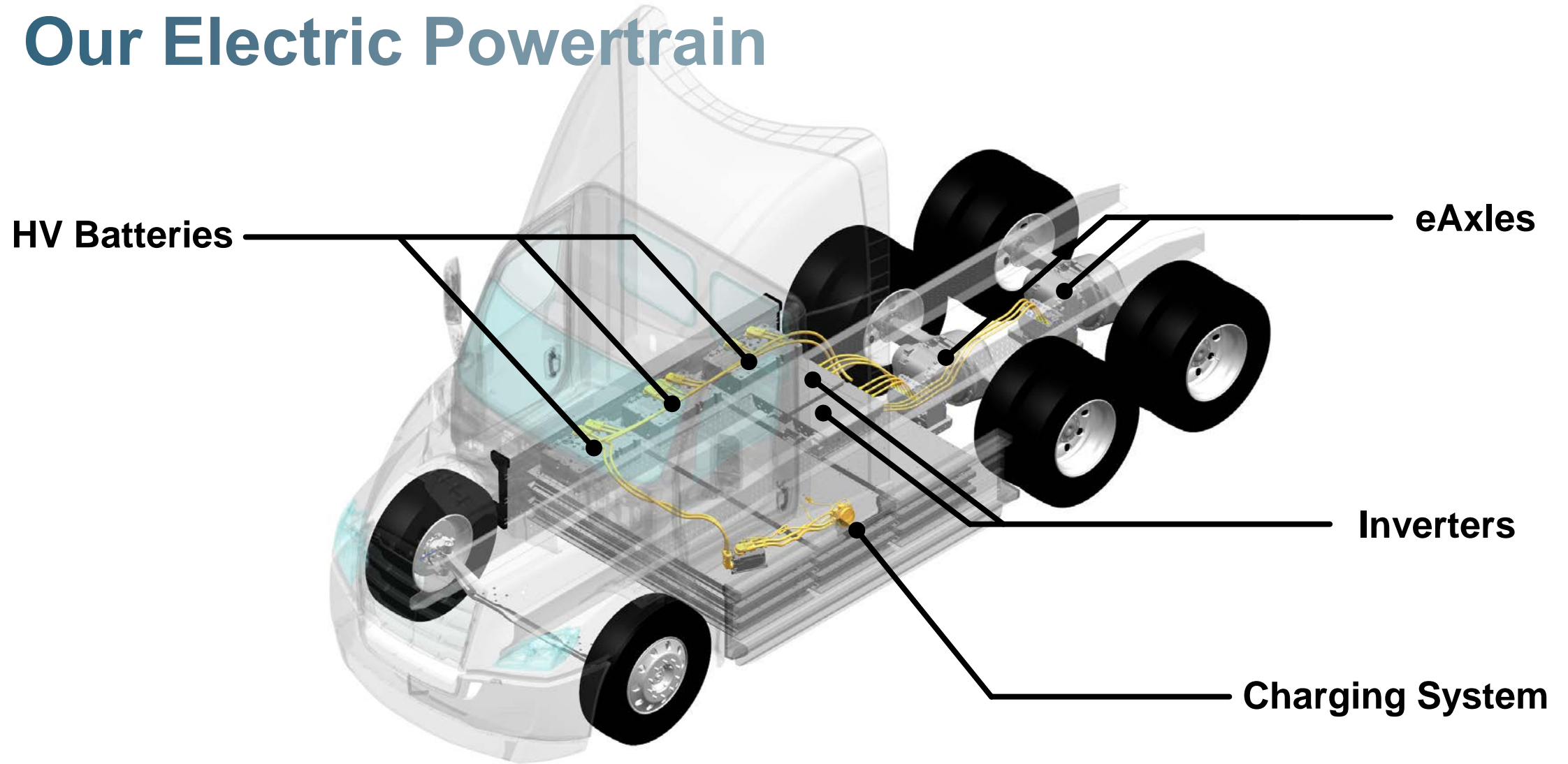
System capacity of 4MW.

Solar layout draft

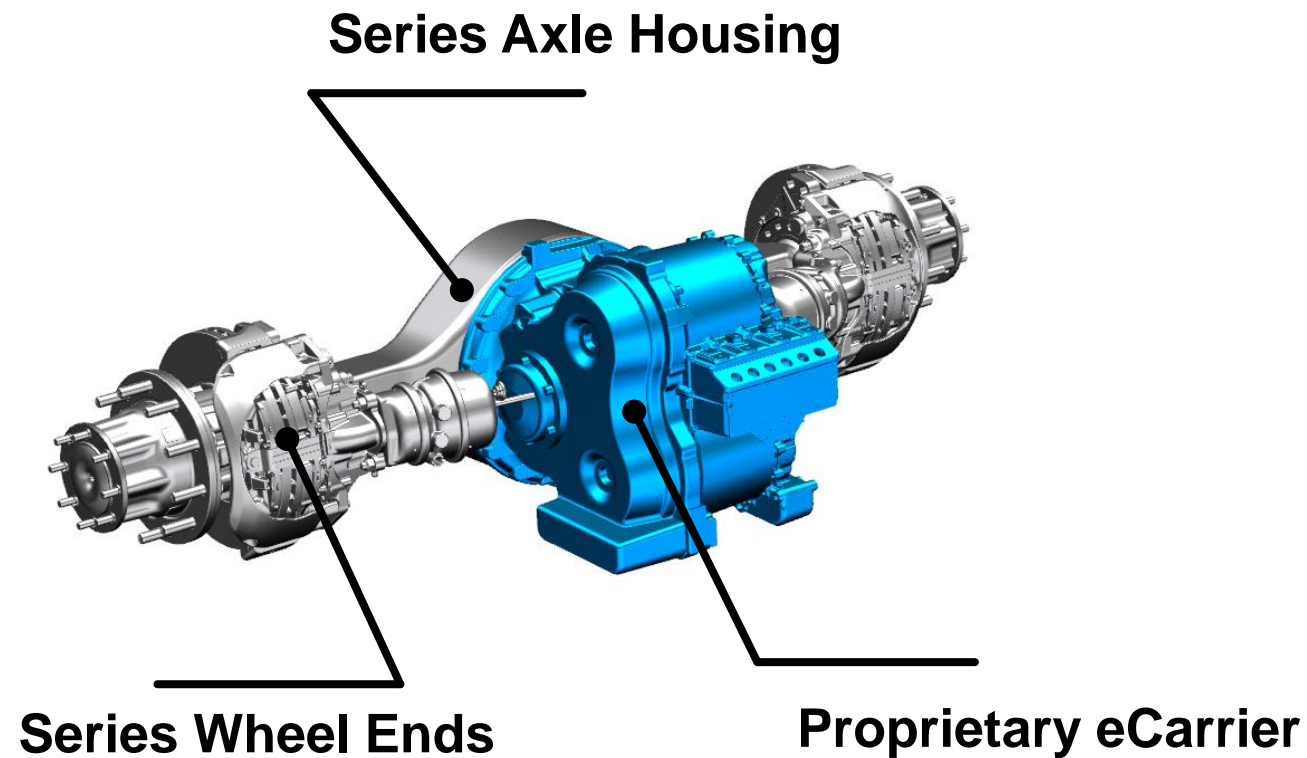


30,000 sq ft, 550 kW max output (half a soccer field)

Our Electric Powertrain



Optimized eAxle Concept Ensures Maximum Customer Value



- + Compact Design
- + Optimized Packaging
- + High Performance
- + High Efficiency
- + Modularity
- + Cost Competitiveness

February Freight Initiatives Committee Presentations and Discussion

- **Weathering the Storm: Growing During the Pandemic, Going Greener, and Moving Forward**, Bethann Rooney, Port Authority of NY/NJ
- **DTNA/IMF Drayage Electrification Project at the Port of NY/NJ**, Chris Grato, International Motor Freight (IMF) and Markus Schwenke, Daimler Trucks North America (DTNA)

A screenshot of a Zoom meeting interface. At the top, it says "View Who's Talking" with a dropdown arrow, a "1" next to a person icon, a search icon, and a settings gear icon. A red arrow points from the "1" to the search icon. The main area contains two text blocks: "Please use the Chat box to ask questions during the presentations and if requesting credits, please post your name, followed with either AICP or PE with your PE license number" and "Please mute yourself when not speaking." Below the second text block, a red arrow points down to a "You are muted." notification box. At the bottom, there are icons for "Mic" (muted), "Camera", "Screen", and "Leave".

View Who's Talking ▾ 1 🔍 ⚙️

Please use the Chat box to ask questions during the presentations and if requesting credits, please post your name, followed with either AICP or PE with your PE license number

Please mute yourself when not speaking.

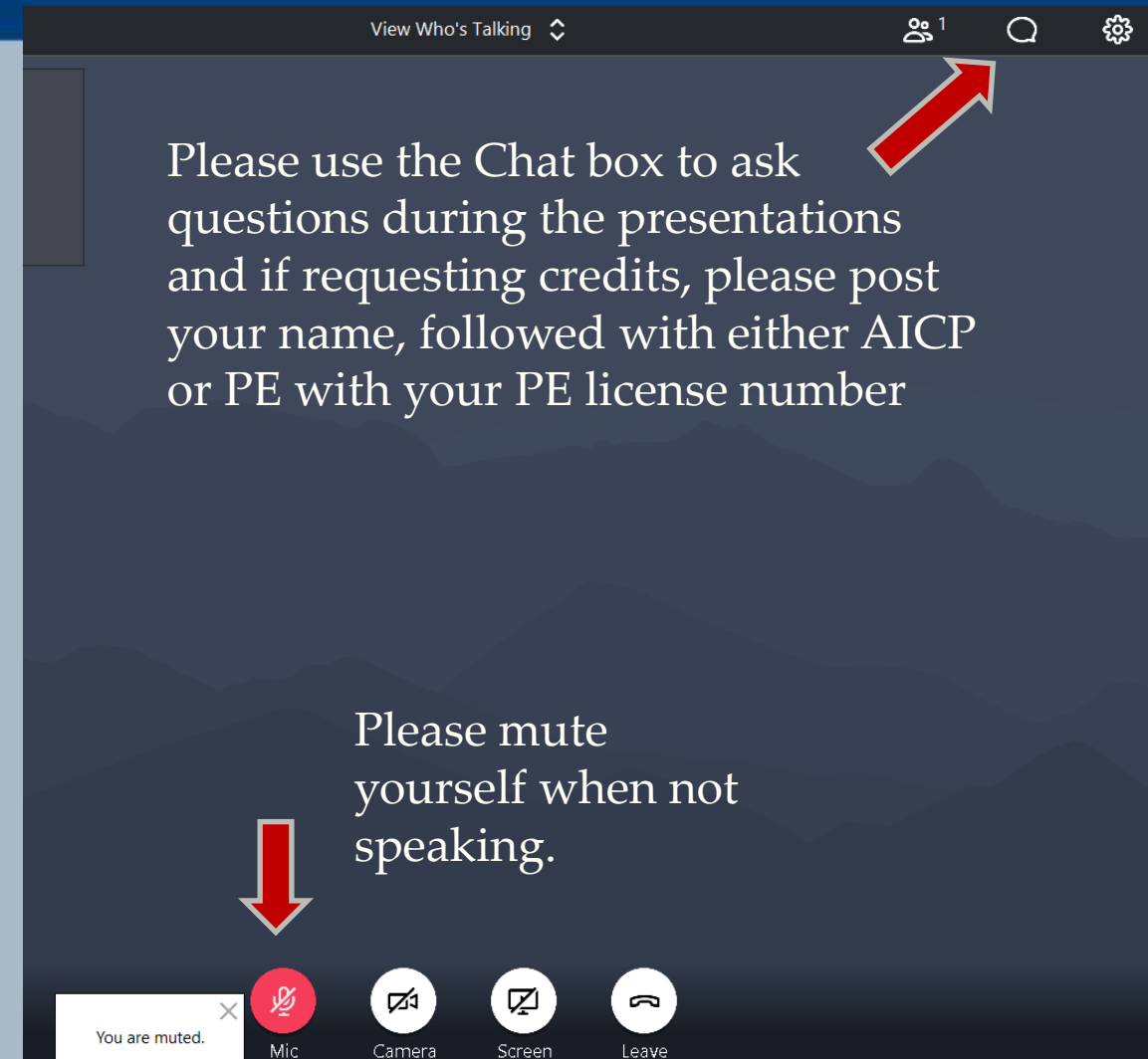
You are muted. ×

Mic Camera Screen Leave

February Freight Initiatives Committee Agenda

- Roll Call of Members
- Approval of Minutes
- Update on NJTPA Freight Division Activities
- Annual Port Update
- Two-Minute Reports on Freight Activities from Committee Members
- Next Meeting: **April 19, 2021** – Annual Freight Rail Update
- Adjournment

Thank you. Stay healthy and safe.



View Who's Talking

Please use the Chat box to ask questions during the presentations and if requesting credits, please post your name, followed with either AICP or PE with your PE license number

Please mute yourself when not speaking.

You are muted.

Mic Camera Screen Leave

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