

AECOM



# 2024 Port Everglades Master/Vision Plan Update

Stakeholders Meeting #2

August 23, 2024



# Meeting Agenda

1. Master/Vision Plan Background & Objectives
  - Progress on 5-Year Projects from 2020 Master/Vision Plan
2. Master/Vision Plan Approach
3. Cruise
4. Liquid Bulk
5. Containerized Cargo
6. Non-Containerized Cargo
7. Comparison of 2020 vs 2024 Market Assessments
8. Other Considerations
9. Summary and Next Steps





# 1. Master/Vision Plan Background & Objectives



- Original Port Everglades Master/Vision Plan
  - Approved by Broward County Commission in December 2008
- Master/Vision Plan to be updated every 2-3 years
  - **First update:** Approved March 2011
  - **Second update:** Approved June 2014
  - **Third update:** Approved June 2020
  - **Fourth update:** *Anticipated Q1 2025 (1-year, Comprehensive Plan)*
- Most recent Master/Vision Plan recommended 50 projects for funding between the 5-, 10-, and 20-year time frames, with four guiding principles used to aid in selection:
  - Capacity
  - Efficiency
  - Flexibility
  - Integration
- Over 60 meetings were conducted as part of the adopted Master/Vision Plan

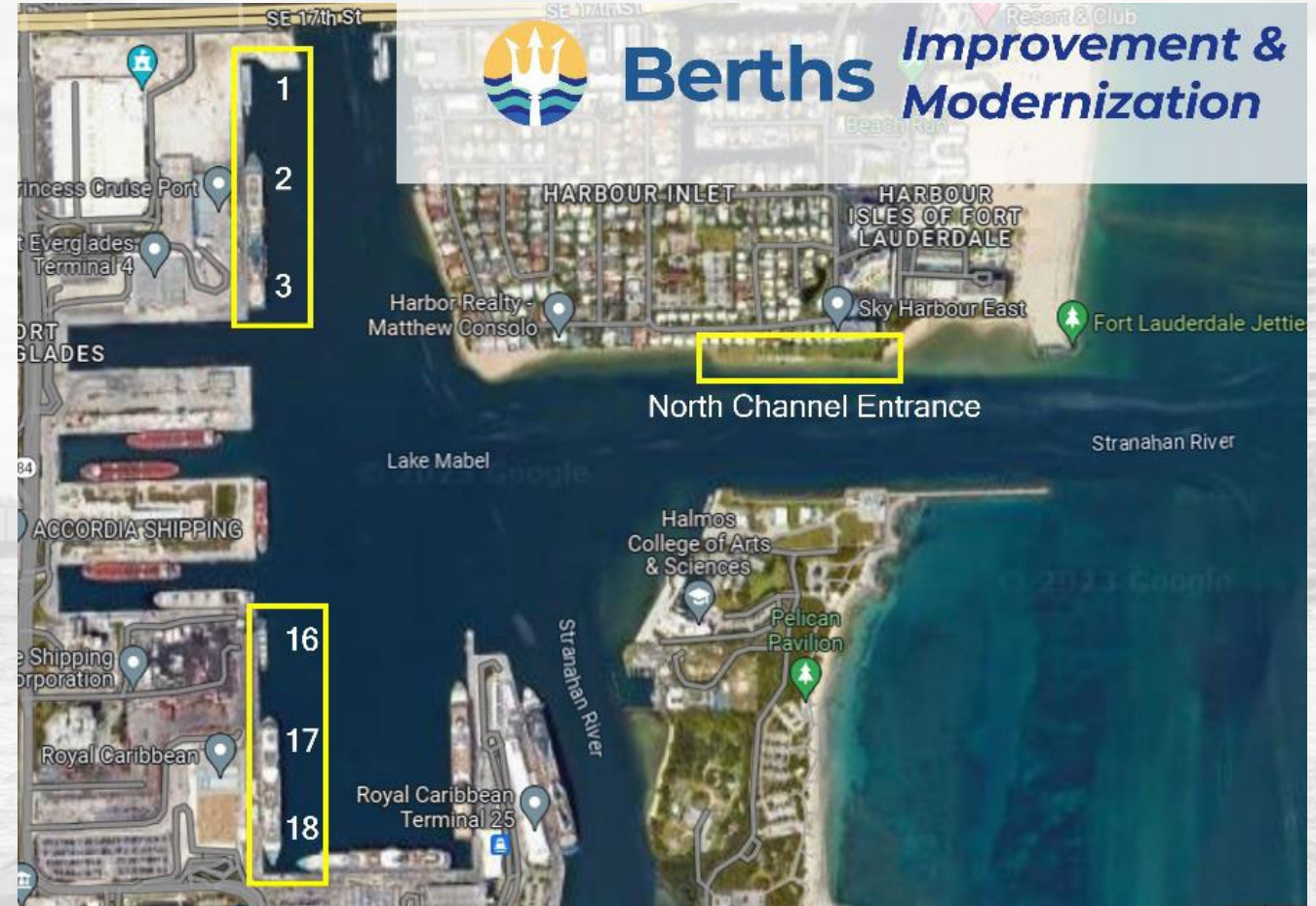
# 1 Master/Vision Plan Objectives

- Expand containerized cargo throughput, optimize infrastructure & improve efficiency
  - Electrification/decarbonization
  - Optimization of operations.
- Expand cruise passenger throughput, optimize infrastructure & improve efficiency
- Improve traffic conditions & enhance intermodal connectivity
- Provide safe, secure & sufficient liquid-bulk receiving infrastructure
  - Address needs for import and use of future fuels
- Generate positive net income for all lines of business
  - Maintain or exceed minimum debt-coverage ratios
  - Ensure diverse portfolio of operations
- Maintain high environmental standards
  - Address trends, regulatory requirements & needs for decarbonization, sustainability and resilience
- Improve customer service and customer attainment
  - Enhance growth within Port and surrounding community



# Progress on 5-Year Projects from 2020 Master/Vision Plan

Project Name (2018-2023)	Status
Slip 1-Phase 1, Berths 9&10 Reconfiguration	Ongoing
Southport Turning Notch Expansion	Completed
USACE Deepening & Widening	Ongoing
Super Post-Panamax Cranes	Completed
New Ro-Ro Yard	Completed
Phase 9a Container Yard	Ongoing
Auto Terminal West	On Hold
Former Dynegy Property Logistics Development + Rail Extension	Ongoing
Consolidated Maintenance Facility	Ongoing
Entrance Channel North Bulkhead	Ongoing
Berths 1-3 Bulkhead Replacements	Pending
Berths 16-18 Bulkhead Replacements	Ongoing
Berths 21-22 Bulkhead Replacements	Pending
Terminal 21 Redevelopment	On Hold



**Berths 1-3, Berth 1-18 & Entrance Channel Bulkheads Replacement (Ongoing)**



## 1

# Progress on 5-Year Projects from 2020 Master/Vision Plan



**New RORO Yard (Completed)**

**Southport Turning Notch Expansion (Completed)**





## 1

# Progress on 5-Year Projects from 2020 Master/Vision Plan



**Phase 9A Container Yard (Ongoing)**



**Slip 1 – Phase 1, Berths 9 & 10 Reconfiguration (Ongoing)**



## 2. Master/Vision Plan Approach



## 2 Planning Strategy & Themes



### • Key Themes

- Agility/Flexibility
- Electrification/Decarbonization
- Diversification
- Resiliency
- Managing Growth and Traffic Impacts
- Maximizing Existing Space for Economic Development
- Optimizing Security Gates/Checkpoints
- Densification/Consolidation of Cargo Operations
- Warehousing/Crossdocking
- Beautification







- Collaborative and Iterative – Leverage expertise of key stakeholders
- Components to be considered
  - **Market Study and Assessment:** Types of cargo and cruise traffic at the Port
  - **Shipping:** Forecast of types and sizes of ships, channel restrictions, new trade lanes, and regional/global trends
  - **Economics:** Advantage of the Port over competing ports, capture of cargo and cruise business, types/sizes of ships for each trade type, and commodity forecast for each trade type
  - **Infrastructure:** Approach channels/turning areas, harbor layout, dredging limitations, configuration of berths and terminals, storage yards, movement of people and cargo in and out of port/terminals, maintenance of facilities, gate layouts and queue management, utility services, and inland transport links
  - **Operations:** Cargo/cruise handling systems and equipment, storage facilities and methods, dwell times, gate procedures, operating systems, and security systems
  - **Technical:** Design of channels, wharves, reclamation, laydown areas, cruise terminal passenger flows and container yard pavements
  - **Environmental:** Impact on environment and morphology, wetlands impact mitigation, new/renewal of permits, sustainability, resilience, and decarbonization
  - **Institutional and Managerial:** Extent of private participation, policy reforms and incentives



- ✓ Build upon past Master/Vision Plan efforts in light of new trends, uncertainties and technologies
- ✓ Effectively engage all stakeholders to set future strategic direction
- ✓ Maintain a plan development process that is flexible, adaptable, and responsive
- ✓ Strive for a final Master/Vision Plan that is both aspirational and realistic



- Existing situation analysis
  - Annual throughput for each cargo type and passengers
  - Revenue per cruise call/passenger
  - Key markets, opportunities, constraints, and planned investments
  - Stakeholder interviews (shipping/cruise lines, terminal operators, etc.)
  - Developments at relevant Florida and other Southeast ports and competitive situation
  - Throughput per berth/terminal
- Market assessment and projections
  - Regional growth of population and consumption of commodities.
  - Market trends – based upon forecasts and stakeholder feedback
  - Forecasted future commodities throughput and vessel calls
  - Cruise deployment scenarios and opportunities
  - Berth demands
  - Noted potential challenges and potential opportunities



# 3. Cruise





# Cruise Market Assessment Summary

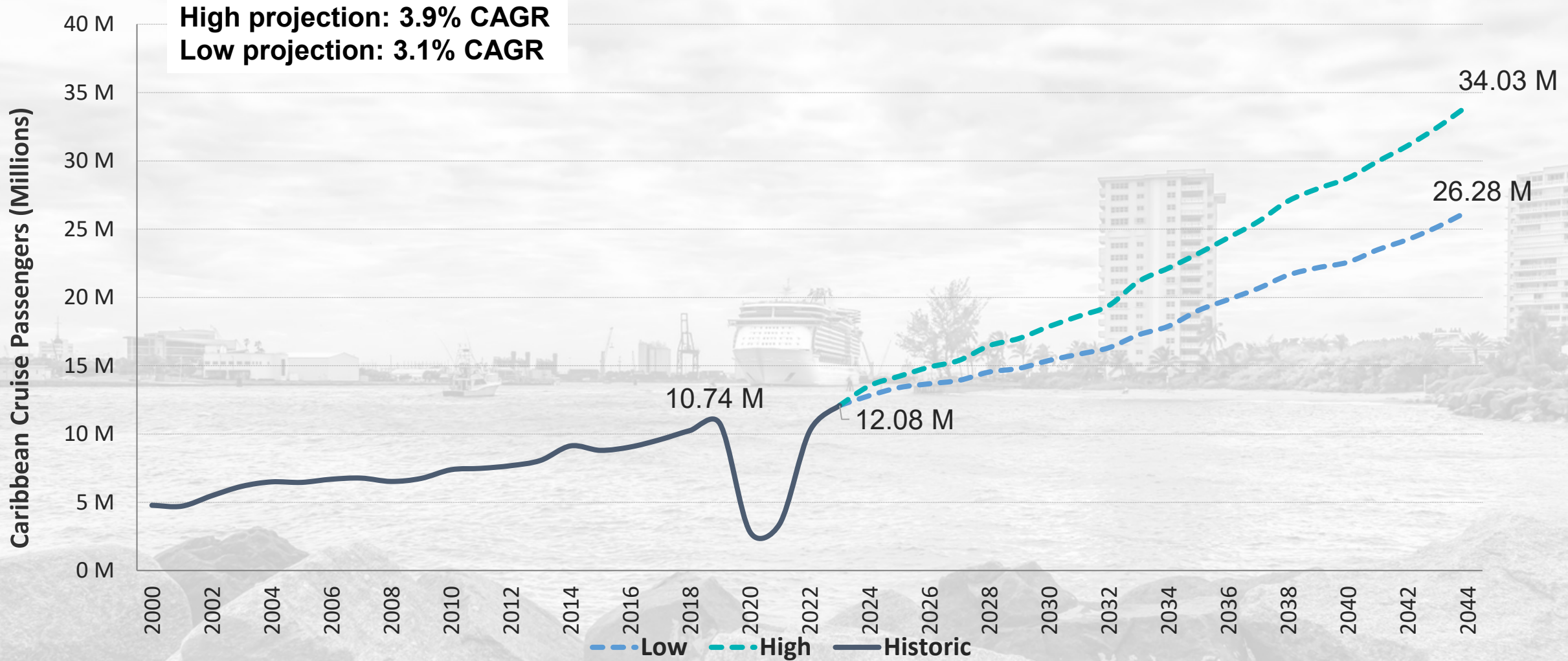
- Port Everglades is a significant gateway to Caribbean
  - 3.8M passengers estimated for 2024
- Significant growth in other key homeports over last 5 years
  - Port Everglades has remained relatively stable
  - New/upgraded facilities at Miami, Canaveral and Galveston
- 42% of global capacity anticipated to be in Caribbean (2024)
  - 63 new ships on order, largest share to be deployed to the Caribbean
  - Newbuild deployments (adding >1M passengers in 2024 & 2025)
  - \$2B+ investment performed in Caribbean home ports (since 2018)
  - \$3B+ infrastructure investments anticipated in the Caribbean
- 31M global passengers in 2023
  - Forecasted to grow to 60-72M passengers in 20 years

**World-Wide Cruise Fleet on Order  
(2024 through 2028)**

Lower Berths	Ships On Order	% of Ships on Order
<b>4,000+</b>	18	29%
<b>2,500 – 3,999</b>	9	14%
<b>1,000 – 2,499</b>	3	5%
<b>Less than 999</b>	33	52%
<b>Grand Total</b>	<b>63</b>	<b>100%</b>

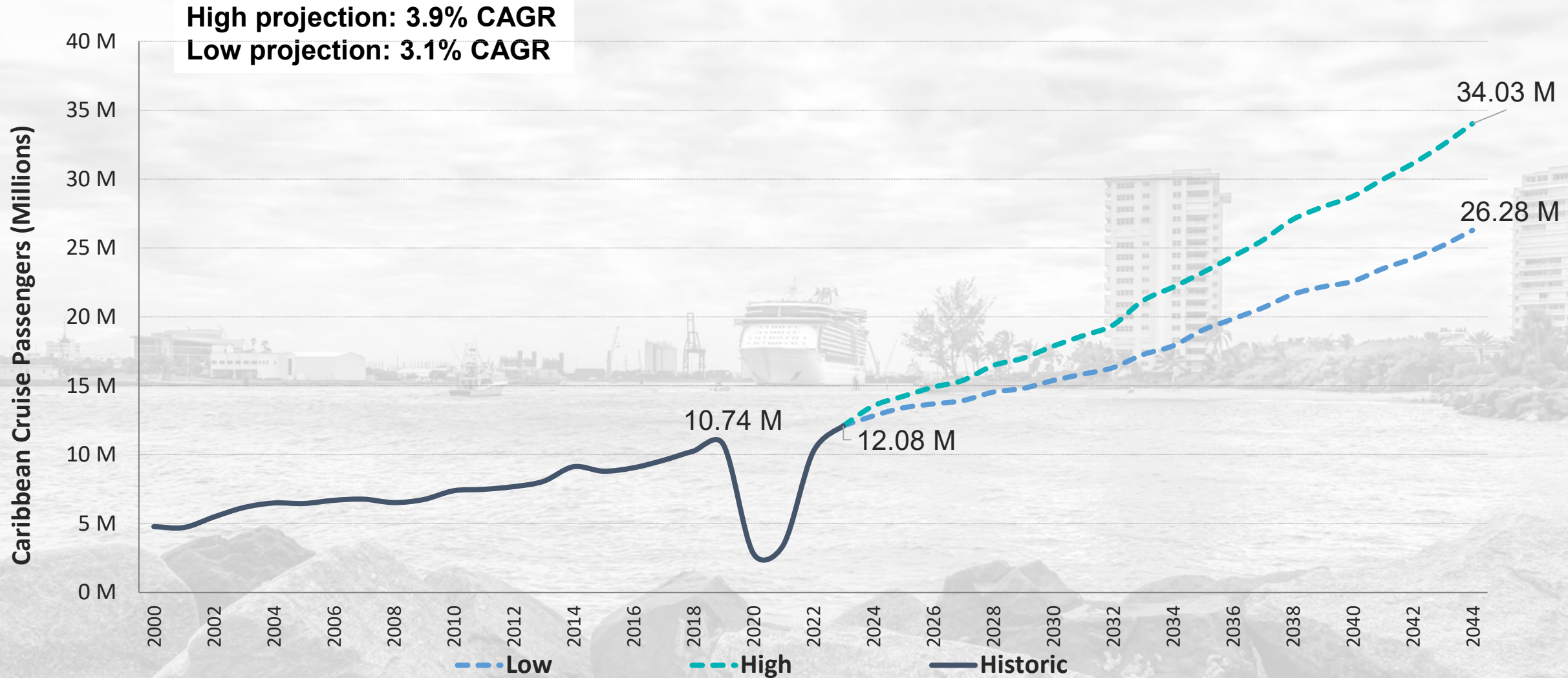


# Caribbean Passenger Projections



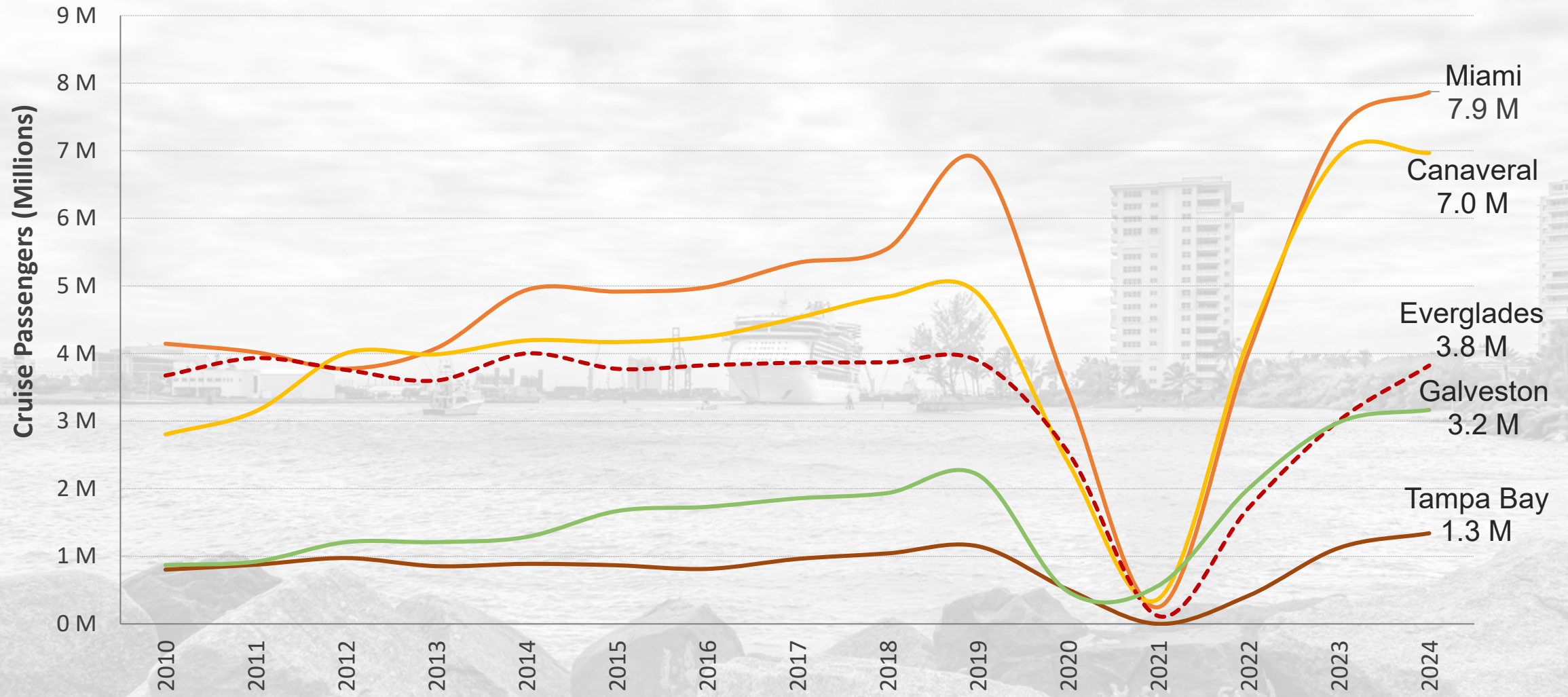


# Caribbean Passenger Projections





### 3 Top 5 Caribbean Homeports



2024 are estimates based on BA deployment database



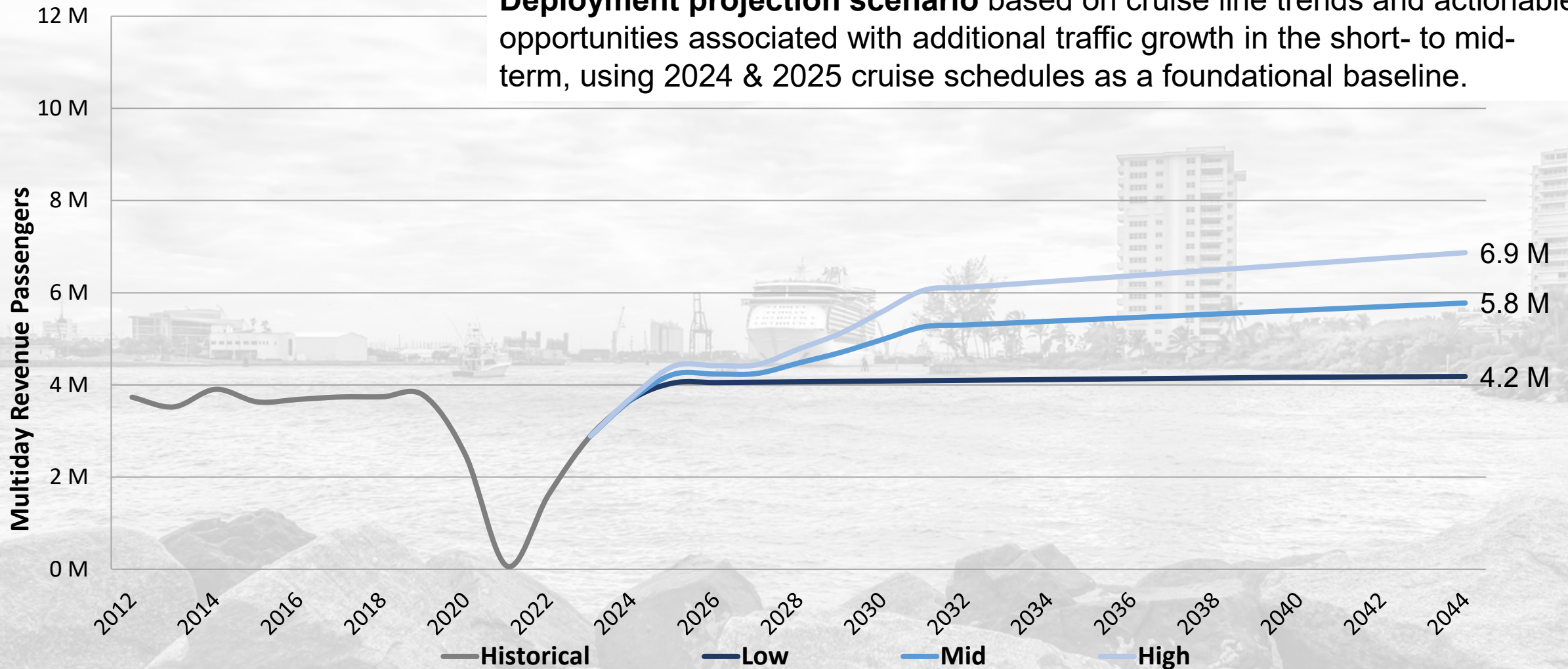
- Base (Low)
  - **Serves as the base projection**
  - Tied to lowest estimates from market capture methodology
  - Assumes no significant changes in cruise line deployments or terminal developments beyond current commitments
  - Acts as a cautious estimate
- Mid
  - **Builds on the base projection**
  - Assumes moderate growth through seasonal deployments and additional cruise brands
  - Driven by anticipated terminal renovations.
- High
  - **Extends the mid scenario** with the most optimistic outlook
  - Anticipates year-round deployments and significant growth due to terminal enhancements.

Deployment Change	Base	Mid	High
<b>Renovation of T21 (winter 2027) triggers Carnival or another brand to add two vessels to PEV</b>			
Seasonally	X	✓	X
Year Round	X	X	✓
<b>Additional seasonal deployments to PEV</b>			
Smaller Luxury Brands	X	✓	✓
European Contemporary Brand	X	✓	✓
<b>Renovation of T29 triggers Celebrity or another brand to expand its presence at PEV</b>			
Seasonally	X	✓	X
Year Round	X	X	✓

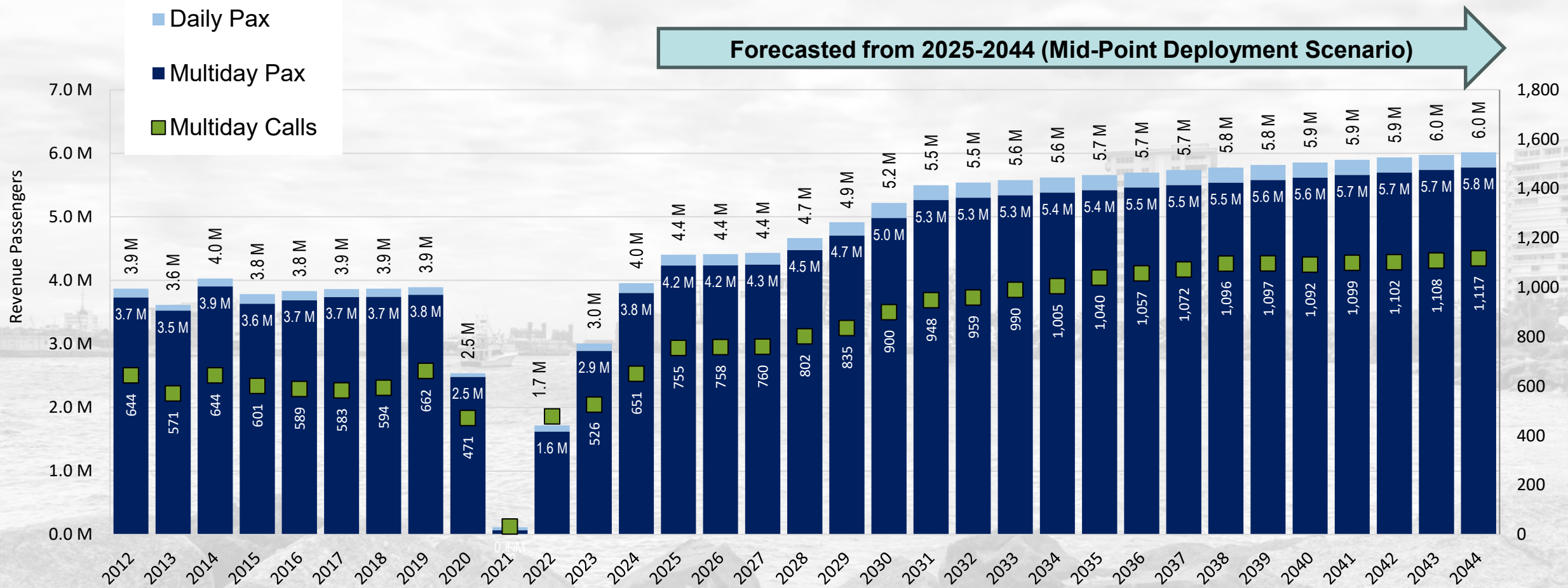


# Multiday Revenue Passenger Projections

**Deployment projection scenario** based on cruise line trends and actionable opportunities associated with additional traffic growth in the short- to mid-term, using 2024 & 2025 cruise schedules as a foundational baseline.



# Port Everglades Revenue Passenger Throughput





# 3 Berth & Terminal Demands

- For low, mid & high projections (under deployment scenario) – 8, 10 & 11 berths needed by 2044
- Investments to maintain current customers & attract additional/larger vessels and brands
  - Redevelop CT-19, 21, 26 & 29 (short to mid-term) and CT-2 & 18 (mid- to long-term)
  - Accommodate more larger vessels (1,300 ft berth length, 60-70 ft wide apron)
- Increase berth usage
  - Work with operators to increase utilization for existing infrastructure (500k PAX annually/berth)
  - Attract smaller ships for weekday berth filling
  - Add seasonal summer deployments (take advantage of Bahamas private island destinations)
  - Capture more of the short cruise market
- Permanent home for Baleária at CT-19
- Lack of employee parking in Port (on an 8-ship day it can be as high as 1,600)
  - Revenue and alternative parking locations (requiring shuttles) barely meet current cruise employee needs
- Alternative solutions for funding (cruise operator or others)

### 3 Berth & Terminal Demands

	2025–2029	2030–2034	2035–2039	2040–2044	NOTES
Market Capture Scenario 1 (Maintain / grow market capture)					
Low	8	8	9	10	<ul style="list-style-type: none"><li>Assumes PEV can maintain 2024/2025 market capture rate through duration of projection period (14.5%)</li><li>Unconstrained view of potential market available for PEV</li><li>Would require significant effort from PEV to maintain this capture rate, but not impossible</li></ul>
Mid	8	9	10	11	
High	8	9	11	12	
Market Capture Scenario 2 (Growth, but slight loss of market capture)					
Low	8	8	8	8	<ul style="list-style-type: none"><li>More realistic market capture projection range for PEV</li><li>Continued growth is anticipated at PEV, with a slow decline in market capture over the period, as seen historically</li><li>Assumes enhancements to existing facilities are undertaken</li></ul>
Mid	8	8	8	8	
High	8	8	9	9	
Deployment Scenarios					
Low	8	8	8	8	<ul style="list-style-type: none"><li>Uses PEV’s 2024-2025 schedules as foundational baseline and explores various deployment scenarios or opportunities.</li><li>Establishes a framework that spans from conservative baseline projections to more optimistic scenarios</li><li>Account for differing levels of cruise line commitments and terminal developments, which influence passenger volumes.</li></ul>
Mid	8	9	9	10	
High	8	9	10	11	



## 4. Liquid Bulk



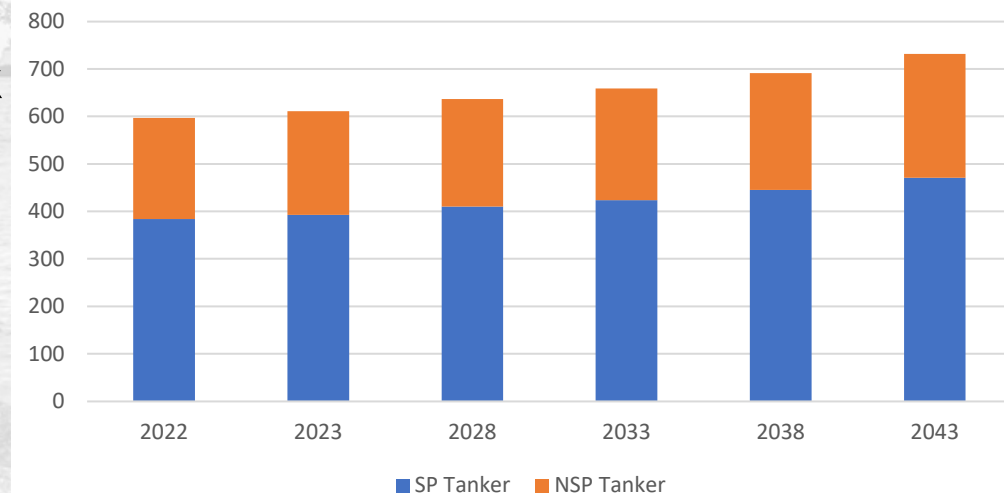


# Market Assessment Summary

- 129.9 Million Barrels in 2023
  - >350,000 barrels/day
  - 224 barges, 382 tankers
- Petroleum will remain constant near-term
  - Jet fuel will increase near-term and long-term
  - Other products will be relatively flat in the long-term
- Larger tankers will deliver petroleum imports
- Other FL ports not significantly investing in liquid bulk
  - Will not impact Port's jet fuel market
- LNG bunkering needs will increase
  - Current fleet of 88 ships; 175 on order
  - 20 cruise ships (mostly in Europe); 22 on order
- Considerations for methanol bunkering

Commodity	2022	2023	2028	2033	2038	2043
Jet Fuel	96	98	116	128	140	153
Gasoline	172	177	164	159	158	161
Diesel	50	52	48	46	46	47
Fuel Oil	6	7	6	6	6	6
Ethanol (Maritime)	4	7	7	7	7	7
Ethanol (Truck and Rail)	15	12	12	12	12	12

Vessel Calls Forecast

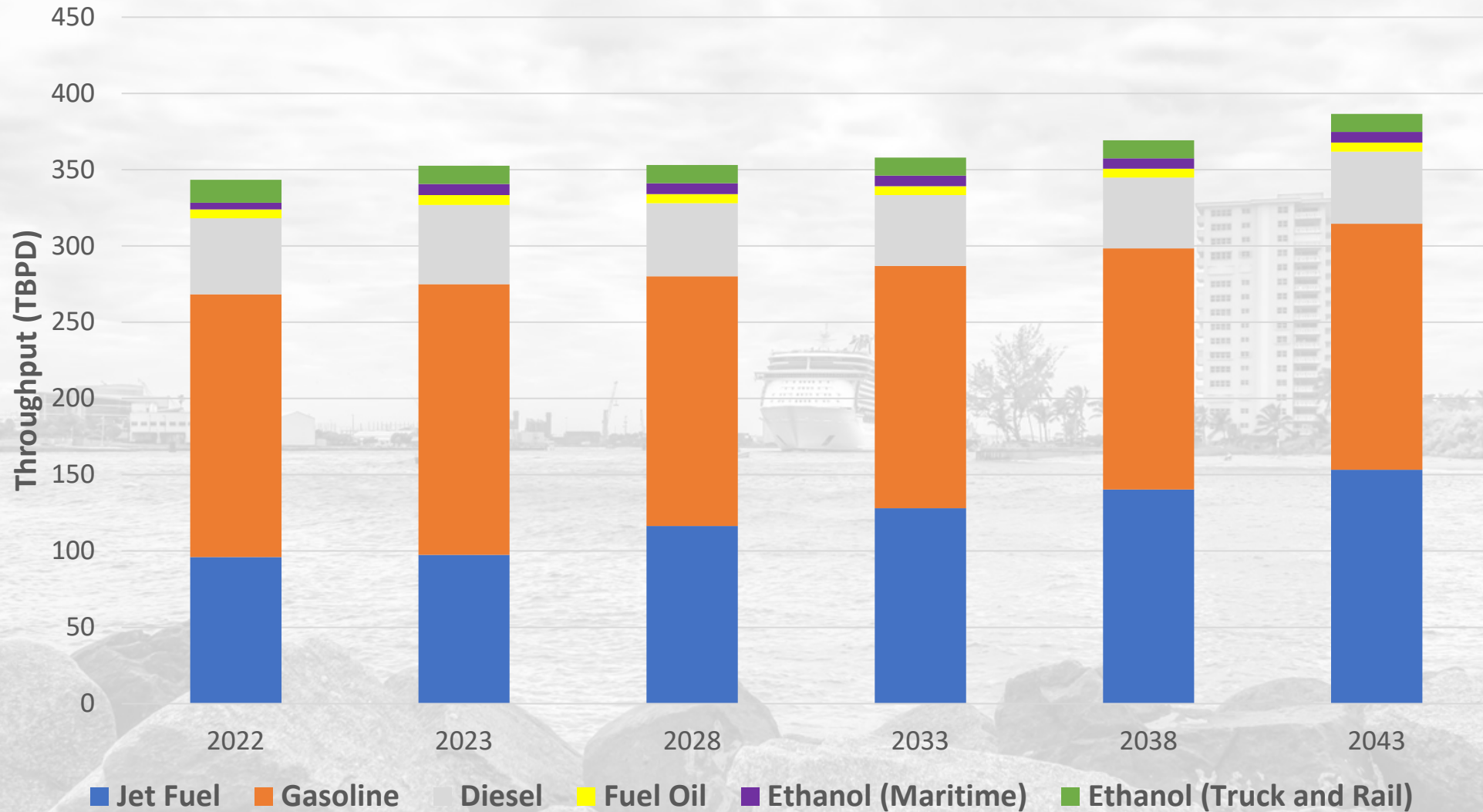


Note: SP = Self-Propelled; NSP = Non-Self Propelled



## 4

# Liquid Bulk – Throughput Projections (thousand barrels per day)



# Liquid Bulk – Berth & Terminal Demands

- Operators to determine procedures for storing larger inbound shipments from larger tankers
- Global Terminal Northport Rail Trackage
  - Ethanol import increase from 7,200 to 9,600 rail cars/year
- Bunkering with alternative fuels
  - Too early to determine if alternate bunkering fuels will increase significantly
  - First mover will have market advantage in Florida/Southeast
  - Consideration for LNG and methanol

**Silver Nova LNG fueling**





## 5. Containerized Cargo

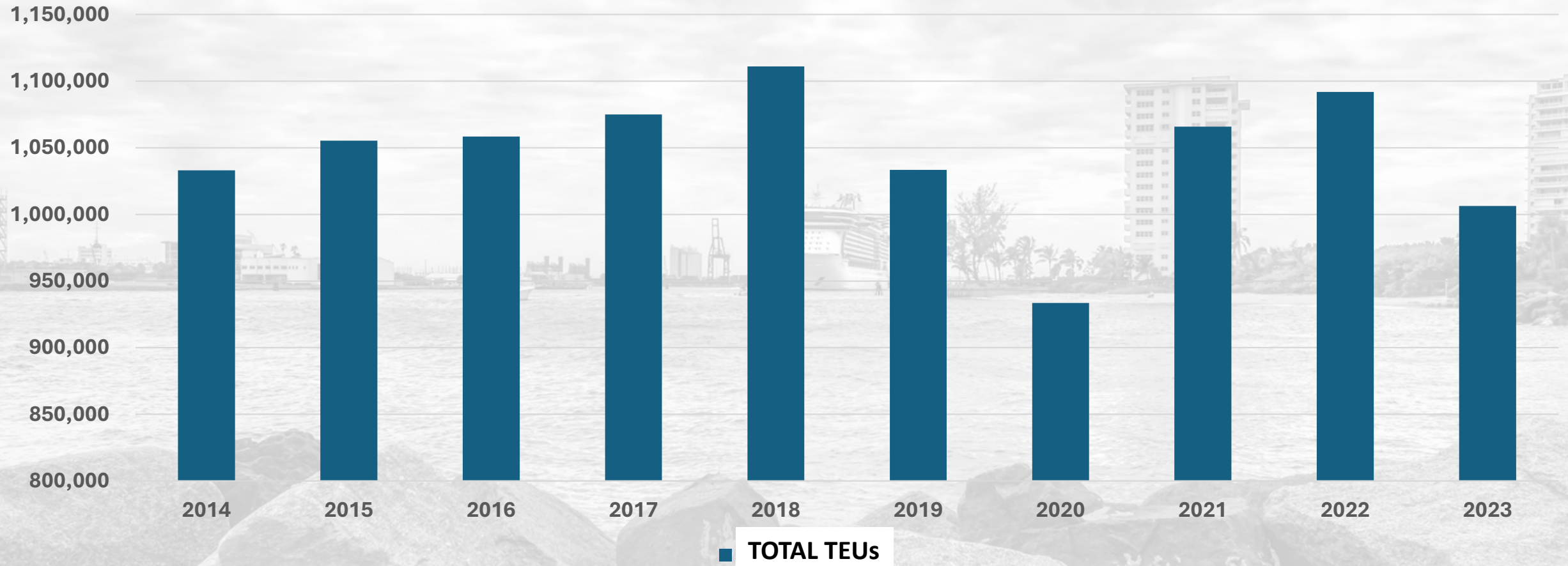




- 1.01M TEUs in FY2023
  - 6.37M tons; 1.3M tons of perishable imports
  - Significant variation in berth-foot-hour factors by berth (varying sizes of ships)
- Container market peaked in 2018
  - Impacted by COVID-19 and has not regained 2018 levels
- Several services relocated to be closer to BCOs
  - Ports of Jacksonville and Wilmington, NC
- Continued growth on the Caribbean, Central American and South American trade lanes
- Future Container Growth
  - New Mexican service
  - Potential Northern European, Mediterranean and Asian Services
  - Channel depth and width will limit ability to attract new direct services from Asia and Northern Europe (12,000 TEU+ ships)



# Containerized Cargo – Total Historical TEUs

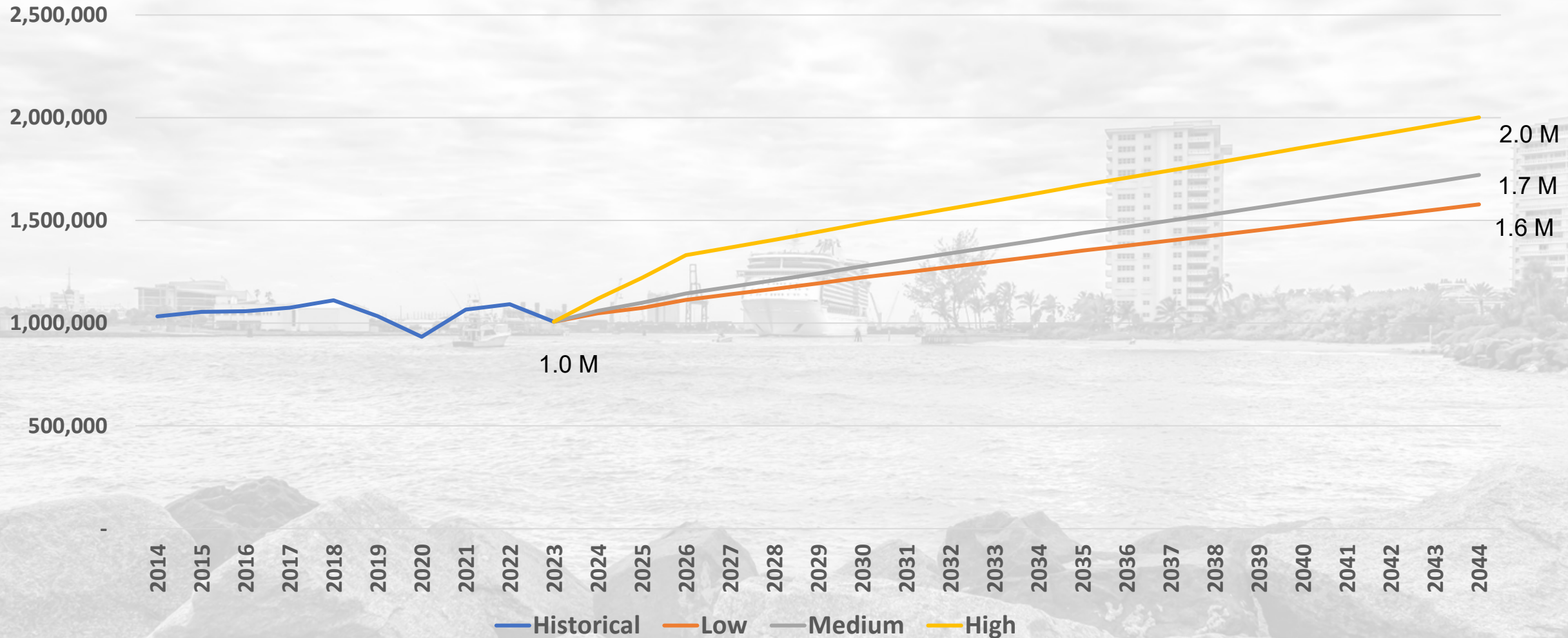


# Containerized Cargo Projections Methodology

- Four key components
  - Regression analysis for imports and population
  - Population projections from University of Florida Economic and Business Research
  - Review of GDP projections of trading partners for export containers – World Bank
  - Interviews with carriers and terminal operators
- Low Forecast
  - Based on medium Florida population growth
  - GDP forecasts trading partner GDPs for export
- Mid Forecast
  - Based on high Florida population growth
  - GDP forecasts trading partner GDPs for export
- High Forecast
  - Mid forecast plus..... addition of potential Mexican, Northern European and direct Asian cargo
  - Channel deepening and widening critical for attraction of fully laden Asian and Northern European services



# Containerized Cargo – Market Outlook (TEUs)



# 5 Berth & Terminal Demands

- Container capacity appears sufficient for now and has flexibility to grow
  - Southport operating at 53% of terminal capacity
  - Southport Berths 30+ are most productive berths (availability of cranes, larger ships)
  - Rubber-tire gantry crane (RTG) operator has highest TEU/gross acre at capacity
  - One operator has highest capacity (most acreage), but smallest TEU/gross acre at capacity (low-density operations)
- Berth capacities can improve
  - More STS cranes
  - Cranes on north side of Notch Expansion
- Container storage capacities can increase substantially
  - Backland storage densification – higher stacking and RTGs
  - Optimization of storage & consolidation of grids
- Cold Storage
  - Annual growth of 5% import, 7% export – demand for additional facilities



## 6. Non-Containerized Cargo



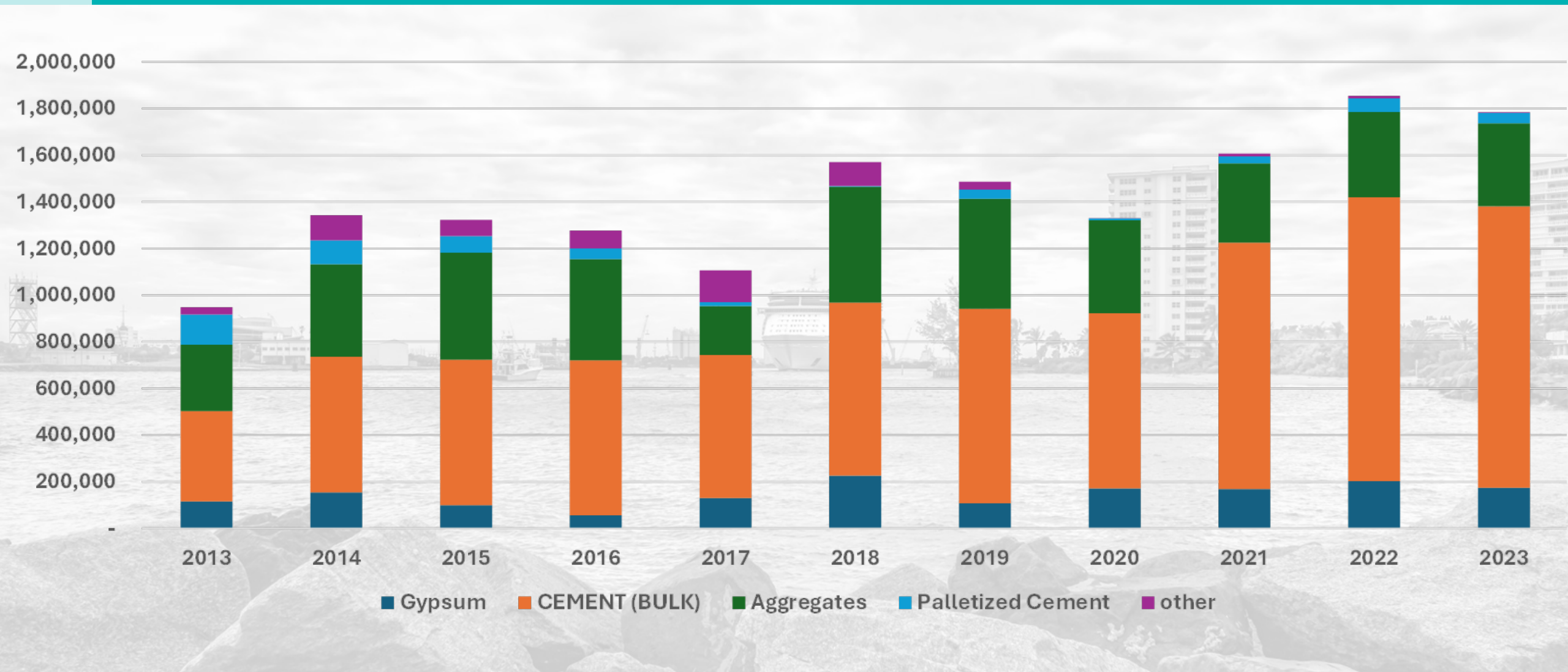


# 6 Dry Bulk Market Assessment

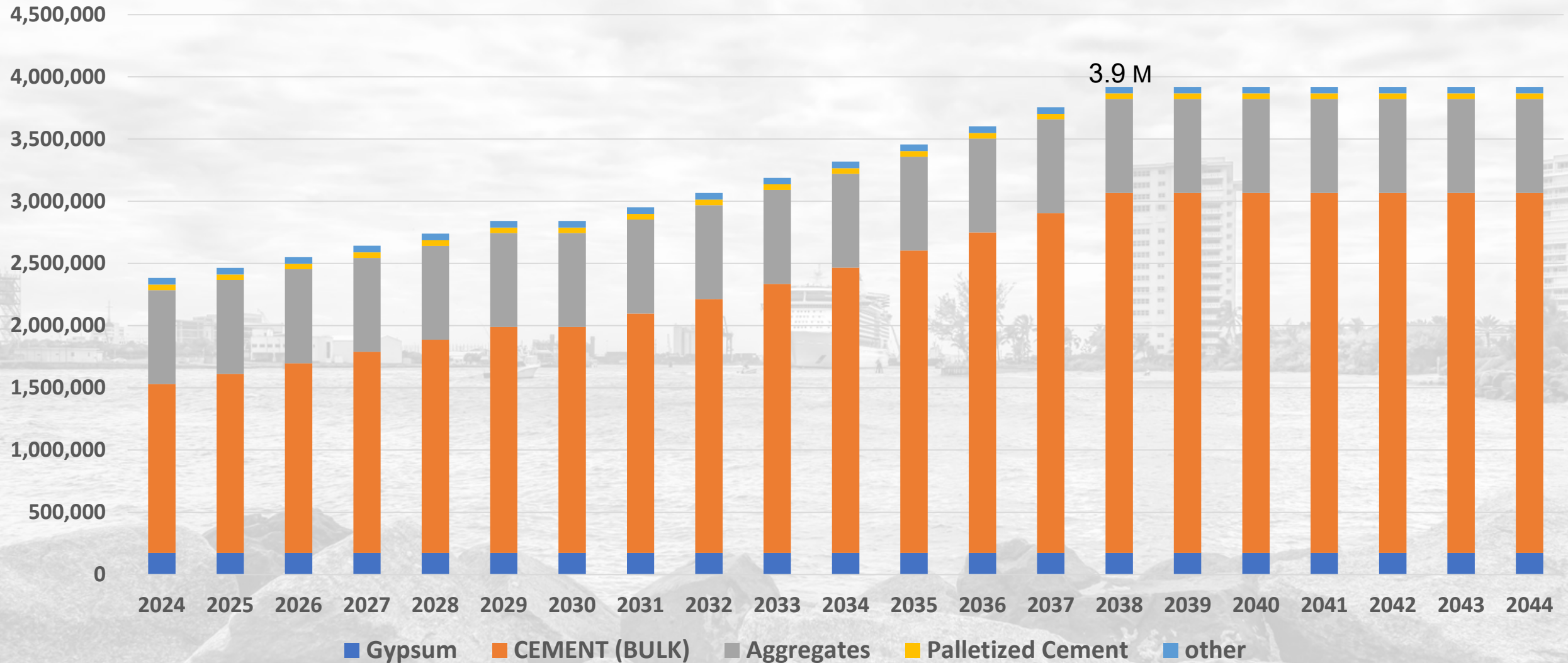
- Cement dominates; demand is increasing to service highway construction
  - Volume of cement imported at Florida ports has nearly doubled since 2013
- Domestic supply of limestone “drying up”; increasing import demand for aggregates
- Increased supply of Canadian stone and aggregates to serve Florida highway construction and building demand
- Cement will likely reach 2.6 million ton capacity by 2036
  - Growing from 1.2 million in 2023
  - Expansion required to accommodate 2044 forecast
- Potential for additional 200,000-250,000 tons annually of bauxite, copper ore, etc.
  - Based on interviews with dry bulk importers



# 6 Historical Dry Bulk Tonnage



## 6 Dry Bulk Projections (tons)





- Break Bulk Import
  - No growth and not likely to grow; dominated by steel imports
  - Little growth in steel (last 20 years); forecast <200,000 tons annually (next 20 years)
  - Constrained by outside storage limitations and cargo vs. cruise berth conflicts
- Yacht Tonnage
  - Peaked in 2018; declined during COVID; rebounded in 2023
  - Currently approx. 75,000 tons
  - Projected to double near term (5 years), then likely flat
- Auto Units
  - Peaked in 2021, but declined since
  - Auto market has not developed as expected; Jacksonville and Brunswick are key S. Atlantic auto ports
  - Limited export market to the Caribbean – 10,000 units per year
  - Auto imports and exports projected to be 15,000-30,000 units annually (next 20 years)

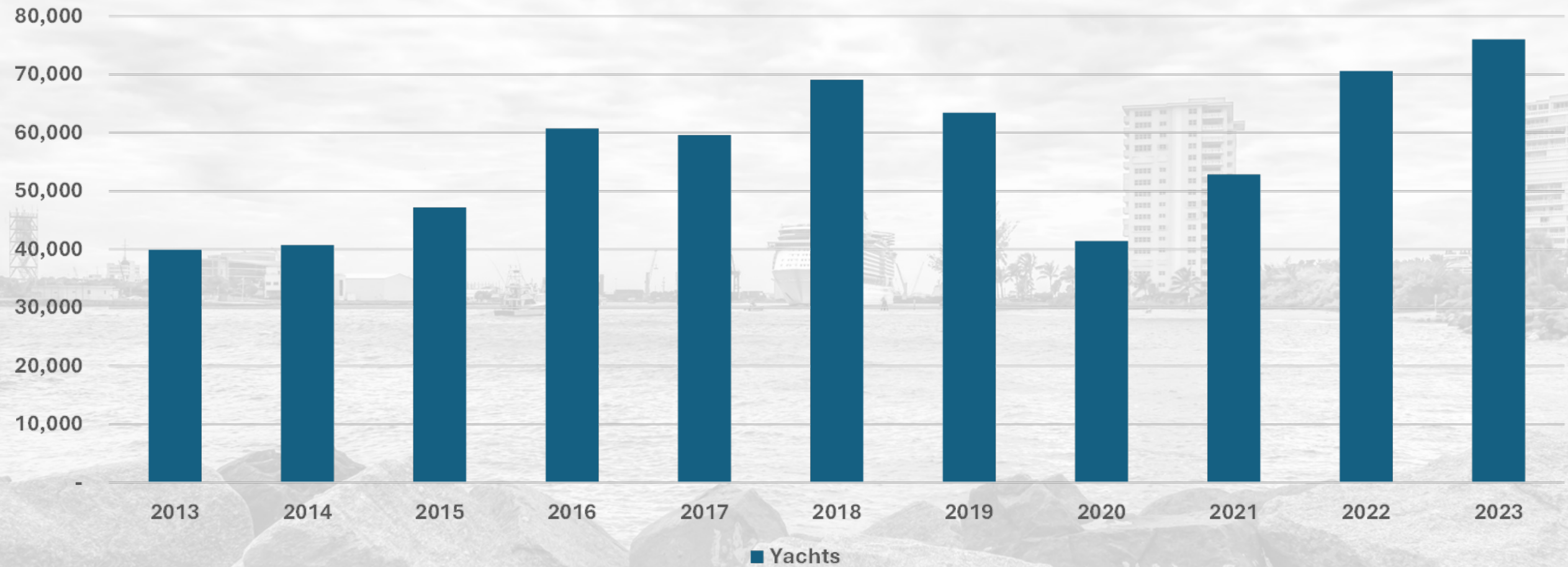
## 6

# Historical Break Bulk Tonnage



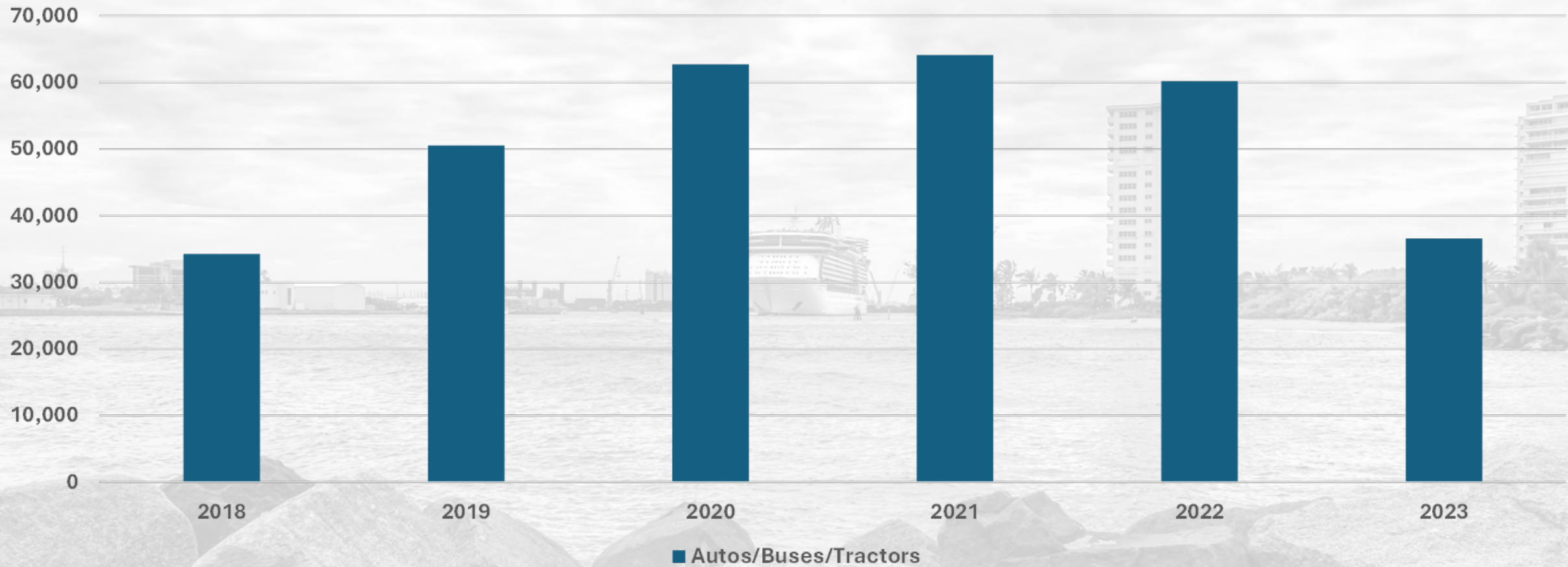


## 6 Historical Yacht Tonnage



## 6

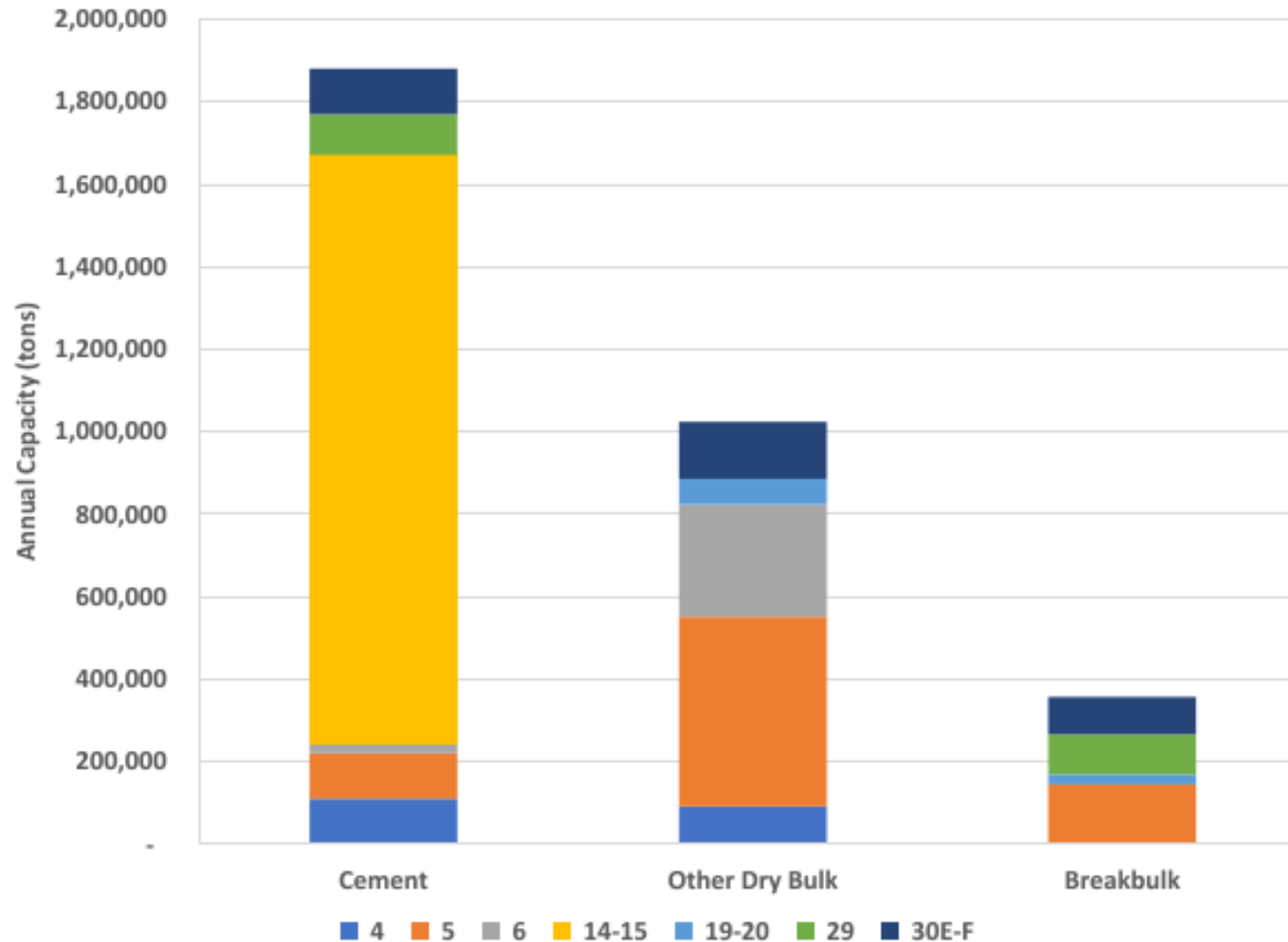
# Historical Auto Units





## 6

# Non-Containerized Cargo Berth Capacities



## Dry Bulk Berth & Terminal Demands

- Dry bulk has sufficient capacity when all berths are operational
  - 1.2M tons of cement @ 67% of berth capacity
  - 521,000 tons of other dry bulk @ 51% of berth capacity
  - Berths 14 and 15 are operating at 82% of cement capacity
  - Berth 5 operating at 97% of other dry bulk capacity (ash, bauxite, gravel, gypsum, sand)
- Few expansion opportunities; no room for future growth
  - Available static capacity vs discharge (40,000-50,000 tons per call)
  - Silo capacity of CEMEX and Lehigh
  - Reduced availability at Berth 5 due to increased cruise usage at Berth 4 (Disney)
  - Berth length issues with Berths 14 & 15
  - Northport reduced availability mid-October to mid-May peak cruise season
  - Impact during construction of upcoming projects (Slip 1 widening and Berths 7-8 bulkhead replacements)
- Additional cement capacity from use of less-preferred berthing locations on as-needed basis
- Dry bulk commodities are impacted by changes in cruise operations (increased berth utilization)



- Break Bulk Import
  - Outside storage limitations
  - Constrained by cargo vs. cruise berth conflicts
  - Low-density storage
- Yacht Tonnage
  - Require 15,000 SF of storage
  - Utilizes valuable near-berth storage area
- Auto Units
  - Projecting no growth for auto import/export
  - Low-density storage area



# 7. 2020 Update vs. 2024 Update



# Market Assessment Comparisons – 2020 (2018 data) vs 2024

	FY2025	FY2033	FY2038	FY2044
• Cruise (multi-day; rev PAX)				
• 2020	4.7 million	6.5 million	7.2 million	-
• 2024 (mid-range)	4.2 million	6.0 million	7.5 million	8.6 million
• Liquid Bulk (thousand barrels/day)				
• 2020	336	343	356	-
• 2024	354	358	369	386
• Containers (TEUs)				
• 2020	1.43 million	1.82 million	2.04 million	-
• 2024	1.22 million	1.67 million (2035)	1.85 million (2040)	2.0 million
• Break-bulk (tons)				
• 2020	332,841	332,841	332,841	-
• 2024	Forecasted at <200,000 (next 20 years)			
• Dry bulk (tons)				
• 2020	1.7 million	1.7 million	1.7 million	-
• 2024	2.4 million	3.2 million	3.9 million	3.9 million



## 8. Other Considerations



- Parking
  - Average maximum daily parking occupancy is 80% of total capacity
  - Peak cruise days exceeds parking capacity – only a few days (<20) a year, but this will increase over time
  - Port parking capacity is 5,538 vehicles (2 garages, 3 lots)
- Traffic Speeds & Safety
  - Vehicles often observed travelling higher than posted speeds (30 mph)
  - Horizontal curves with no advisory speed or curve warning signs
  - Pedestrian safety – limited sidewalks and crosswalks; ADA non-compliance
- Gates
  - Gate delays on cruise days (>1 hour noted)
  - Eller Drive gate queues extend into McIntosh Road intersection (5 entry lanes merge into 3 exit lanes)
  - McIntosh gate has duplicative function (with terminal gates)
- Rideshares
  - After drop off in Port, have to leave the Port to get a pick-up in the Port
  - Consideration for rideshare waiting lot within the Port

- Beautification
  - Traffic cones – temporary solution to a permanent problem
  - Increased landscaping
  - Screening of industrial areas and fencing
  - Public art opportunities
- Fire Station
  - Equipment is split between in-port and near-port facilities
  - Only FS in Broward with fuel fire fighting equipment
  - Existing facility is outdated, too small and not resilient
- Hotels, Restaurant and Other Uses
  - Multiple hotels adjacent to Port; Convention center hotel
  - Many restaurants in proximity to the Port
  - New parking garage





- Infrastructure was designed to operate under historical environmental conditions
- Proposed bulkhead projects are necessary and will promote resiliency
- Port drainage generally functions well but flooding in select areas
  - April 2023 & June 2024 events
- Port-wide flood vulnerability assessment and adaptation planning
  - Provide a prioritization process for the Port to identify specific infrastructure adaptation needs
  - Identify protection needs for critical upland facilities
  - Compliance with Resilient Florida grant program

- Port Decarbonization Considerations
  - Renewable (solar) power – rooftop, carport, battery storage systems
  - Equipment/vessels – battery-electric, hybrid, alternative fuels
  - Alternative fuels – hydrogen, ammonia, methanol, biofuels, LNG
- Shore Power & Terminal Electrification
  - Cruise shore power – no power constraints, but agreements needed with cruise lines
  - Cargo terminals asking about shore power
  - Cargo terminals considering electrification/densification
  - Power distribution to Southport needs upgrades



**Heron Garage Solar Installation**



## 9. Next Steps



- Phase 1 Completion
  - Element 1 (Existing Conditions Assessment) & Element 2 (Market Assessment)
  - Presented to County Administrator
  - Stakeholder Meeting #2
- Phase 2
  - Element 3 – Plan Development: 5-, 10- & 20-Year Plans
    - Market assessment summary for each line of business (cruise, liquid bulk, cargo)
    - Terminal design trends
    - Operational enhancement opportunities
    - Facility needs assessment
    - Affordability analyses – financial modeling
    - Project decision matrix
    - Master/Vision Plan projects and final recommended Plan
  - Element 4 – Impacts and Strategies for Implementation



- Completion of Phase 1
    - Element 1, Existing Conditions Assessment
    - Element 2, Market Assessment
  - Element 3, Plan Development
  - Element 4, Impacts & Strategies for Implementation
  - Element 5, Executive Summary
  - Finalization of Master/Vision Plan Update
  - Element 6, 3D Video
  - Element 7, Broward County Comprehensive Plan Update
- August 2024
- August – November
- November – January 2025
- January
- January – February
- February
- February – March

## **Stakeholder engagement meetings throughout**

- 40 meetings anticipated between July 2024 to March 2025



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# Questions and Discussion



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