

# Port of Alaska Modernization Program

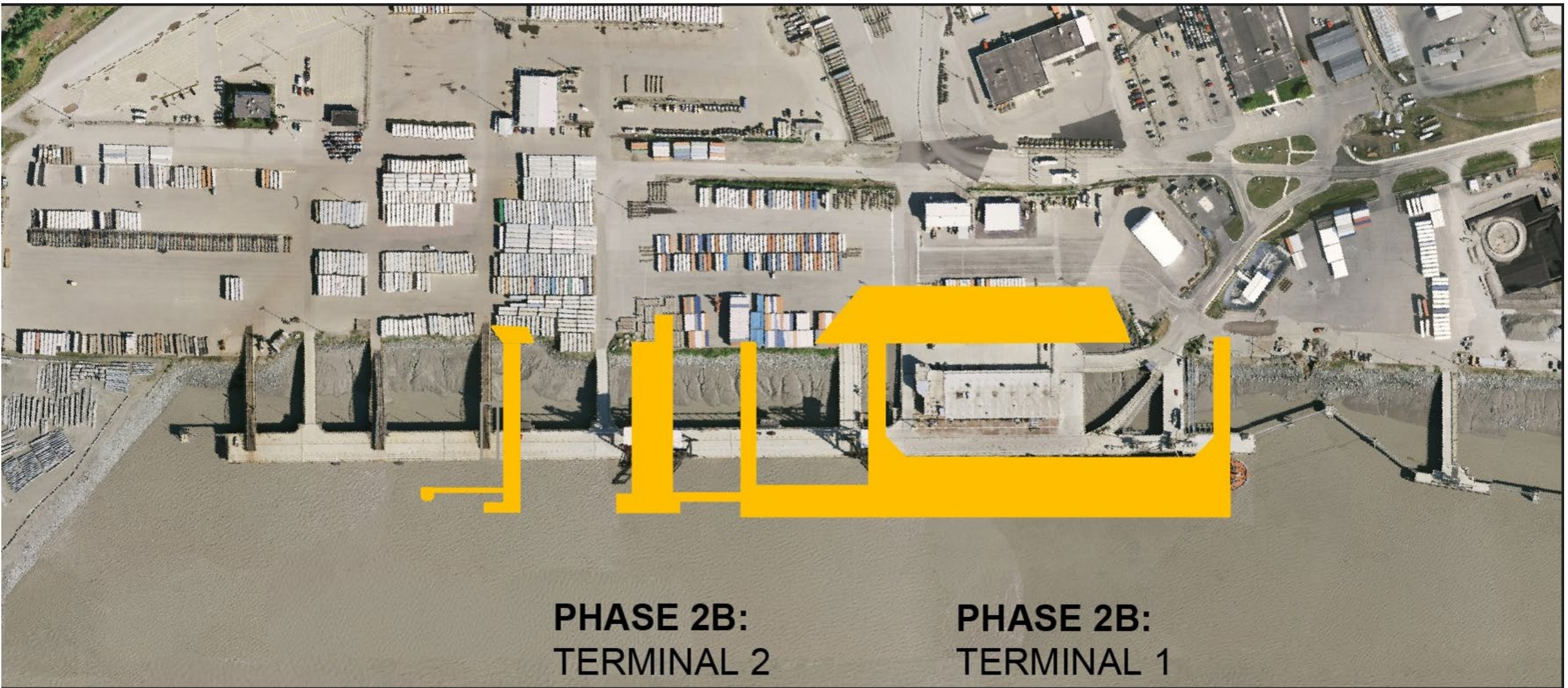
Enterprise/Utility Oversight Committee Presentation  
on  
Results of the December 20, 2022 Design Advisory Board Meeting

June 9, 2023

# The DAB Meeting Objective was:

- To affect a change to the PAMP cargo dock design from that which was approved by the Assembly on June 22, 2021, in AO 2021-56, to a cargo dock design that supports 100-foot gauge cranes and has a continuous deck of equal width end to end with crane rail that runs the entire length. Does the DAB concur?

# Current Approved Cargo Dock Basis of Design (AO2021-56)



**PHASE 2B:  
TERMINAL 2**

**PHASE 2B:  
TERMINAL 1**

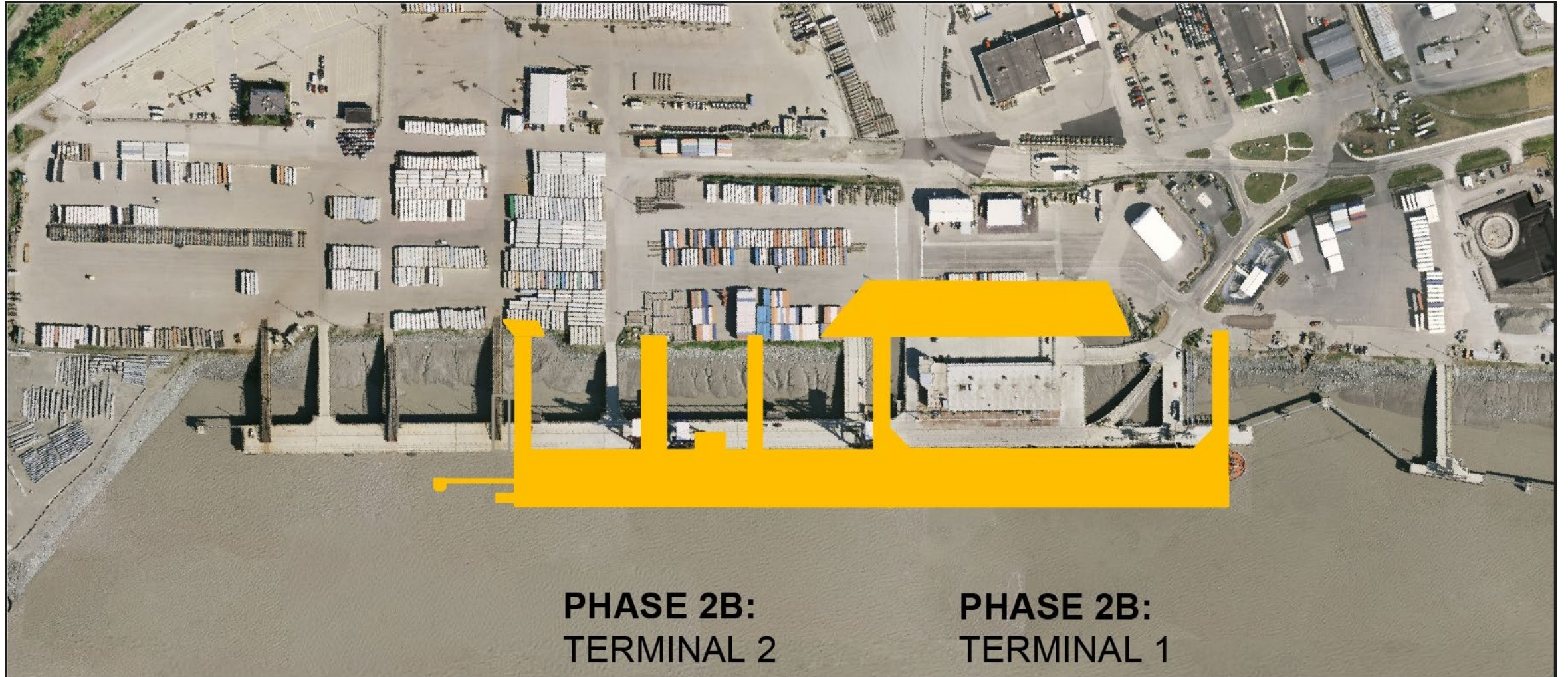


# Proposed Cargo Dock Basis of Design (Aug 22)

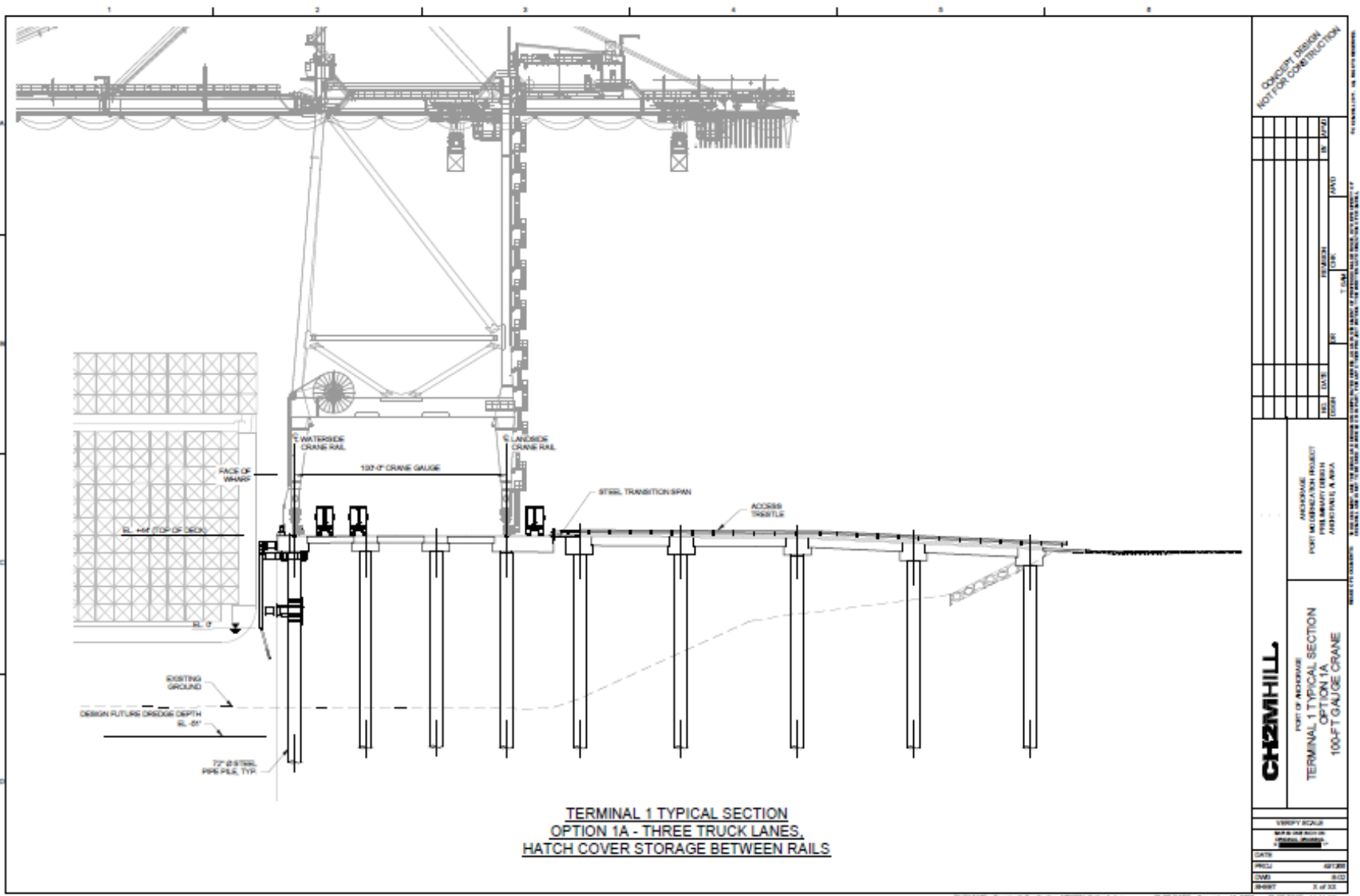




# Current Proposed Cargo Dock Basis of Design



# Side View of Cargo Docks With 100-Gauge Cranes



CONCEPT DESIGN  
NOT FOR CONSTRUCTION

NO.	DATE	BY	CHK.	APP.	PART

**CH2M HILL**  
 PORT OF ARCHERDAKE  
 TERMINAL 1 TYPICAL SECTION  
 OPTION 1A  
 100-FT GAUGE CRANE

SHEET SCALE SHEET NUMBER SHEET TOTAL	DATE PROJ. DWG. SHEET
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# Crane Size Growth: 1<sup>st</sup> Container Crane & Jumbo Crane





# Why This Design Should Matter to the Owner?

- As the facility owner; we should require maximum flexibility from **OUR** port infrastructure
  - PUAs give the cargo users preferential cargo dock access 2 days/week. The berths belong to the owner the other 5.
- The Port has 3 missions to support:
  - Support to commercial business operations (*which is all the users are interested in*)
  - Support to DoD as a Commercial Strategic Seaport
  - Support to FEMA and SOA DHS&EM as a port of entry for disaster response/recovery ops
- It provides continued support of current cargo carrier business models with no loss of efficiency; as well as the space for alternate fuels infrastructure and the ability to handle outsized break bulk cargo more effectively
- **At its simplest, this concept is a modern duplicate of the existing port infrastructure!** *Here's what I mean...*







# Why You Don't Need a Buss Bar

Georgia Ports Authority  
Port of Savannah  
Garden City Container Terminal

- 36 90-Gauge Cranes
- Powered by an electric cable
- Cable lays on the dock between the front legs and the bull rail and runs up to the spool on the crane
  - Cable rolls up or down off the spool as the crane changes position
- *That means no interference with TOTE's RO-RO ramp ops model and cranes that can be used in 2 berths vs. 1!*





TOTE's

***M/S Isla Bella***

(serves Puerto Rico)

Gross Tons: 36,751

LOA: 764' x 105'

TEUs: 3,100

Draft: 29'



Matson's

***M/S Lurline***

(Con-Ro serves Hawaii)

Gross Tons: 32,664

LOA: 870' x 114'

TEUs: 2,750 (+ 800 cars)

Draft: 38'



***\*As responsible port owners,  
we must prepare for change  
of every kind!***

# The fleet can be expected to grow

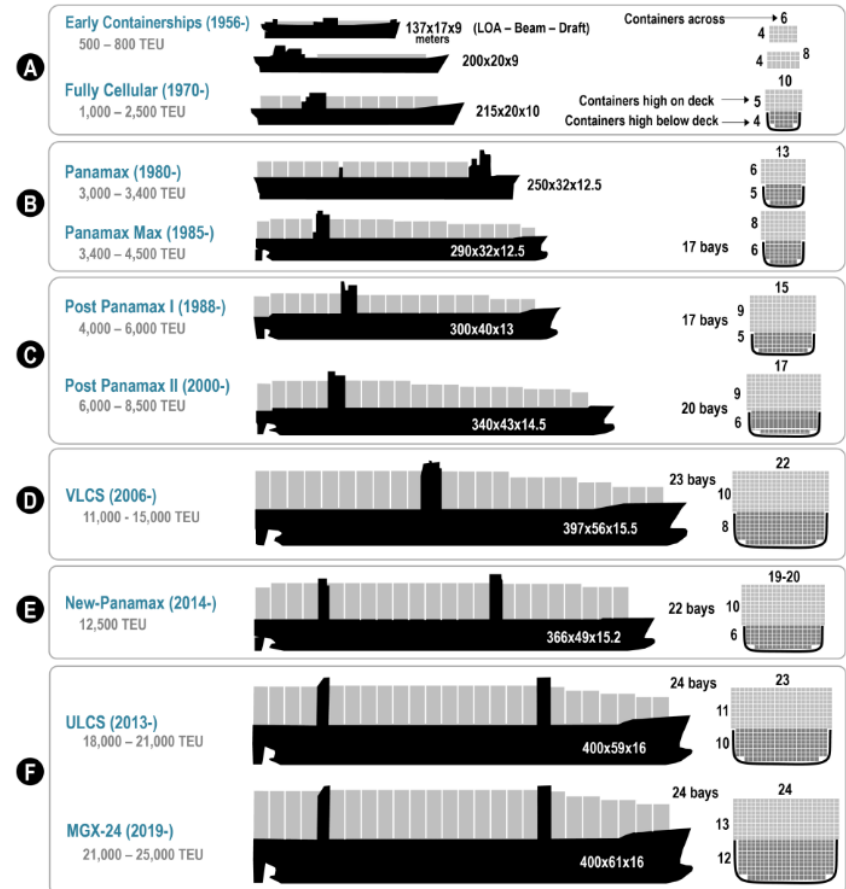
## Evolution of Containerships

We are here →

We WILL be here in the future →

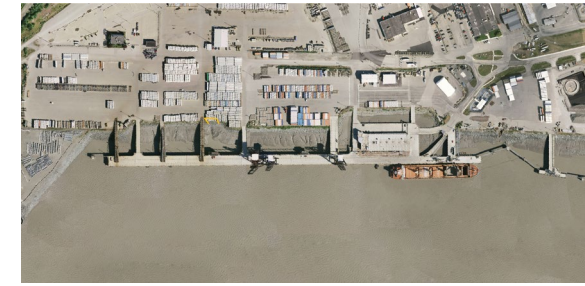
We MAY be here in the future →

- Current fleet is in the 1500 to 2000 TEU range.
- 3500 TEU is likely at our port with new line vessels.
- Are 6000 TEU vessels possible in the next 75 years?



Evolution of Containerships

# Vessel Calls at Existing Facility\*



## Terminal 3

- TOTE North Star
- TOTE Midnight Sun
- BB Fuel Millie
- Military - Cape Hudson
- Military – SNL York

## Terminal 2

- Matson Anchorage
- Matson Kodiak
- Matson Tacoma
- Matson Maunalei
- Matson Lihue
- GB Pacific Cargo
- Queen Elizabeth – Cruise Ship
- Military Cape Hudson
- Military Bob Hope
- Military Cape Rise
- Military Green Bay
- Military Cape Orlando
- ANP Ship So Yang
- Military - Cape Henry

## Terminal 1\*\*

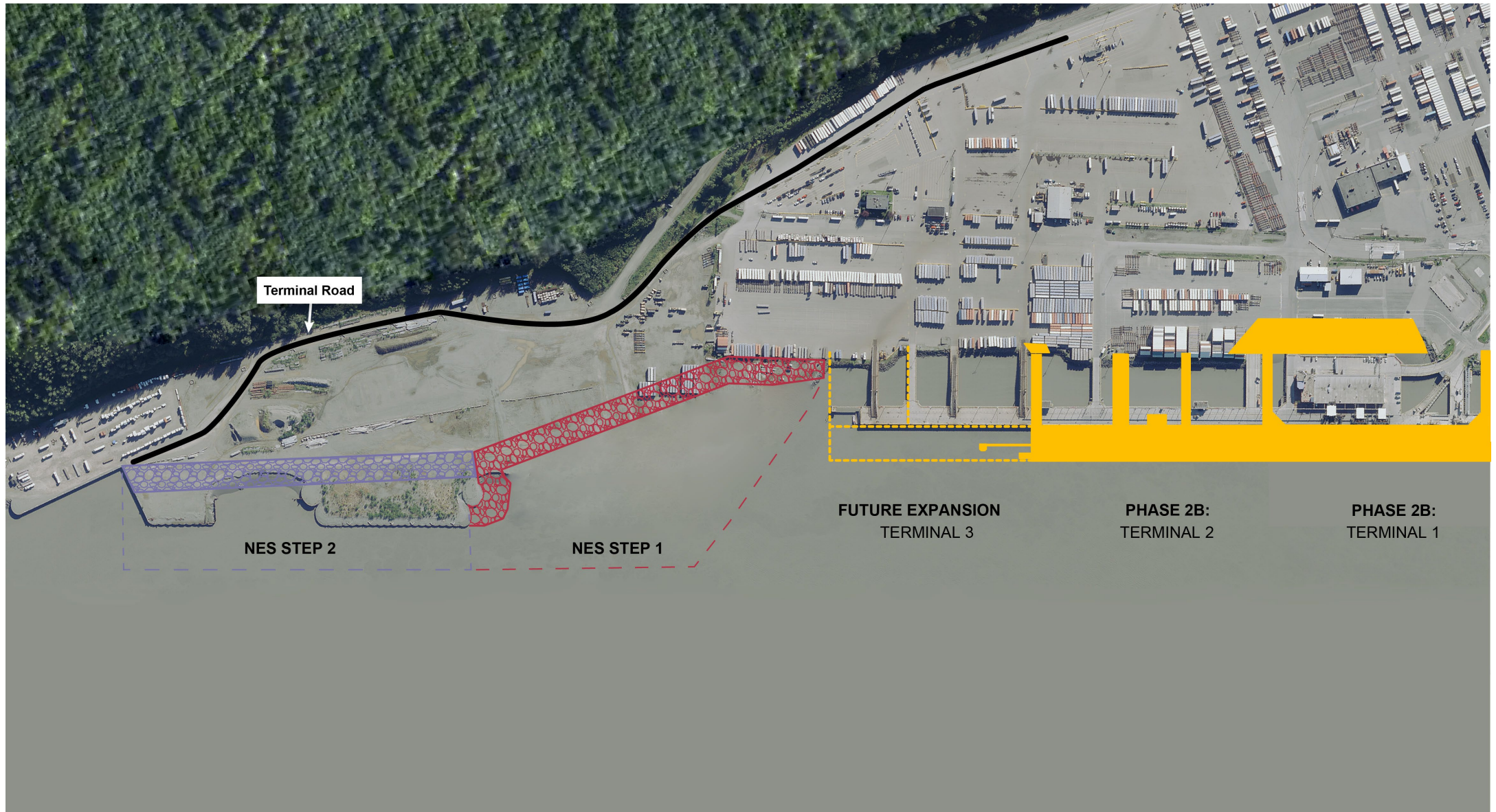
- Matson Kodiak
- Matson Tacoma
- Bearing Marine Arctic Bear
- Holland America New Amsterdam
- Holland America Maasdam
- Military Ocean Jazz
- Military USS Comstock

\*From POA berthing records

\*\* Excludes POL vessels & tugs



# *With Room to Grow If/When the Business Case IDs the Need!*





# A Look at Container Ports Around the Country

<- Port of Los Angeles



Ports of NY & NJ

<- Port of Tacoma







<- Port of San Diego

...and the Port of Rotterdam ->

***\*Did you spot the common theme?***





# Jacksonville Port Authority

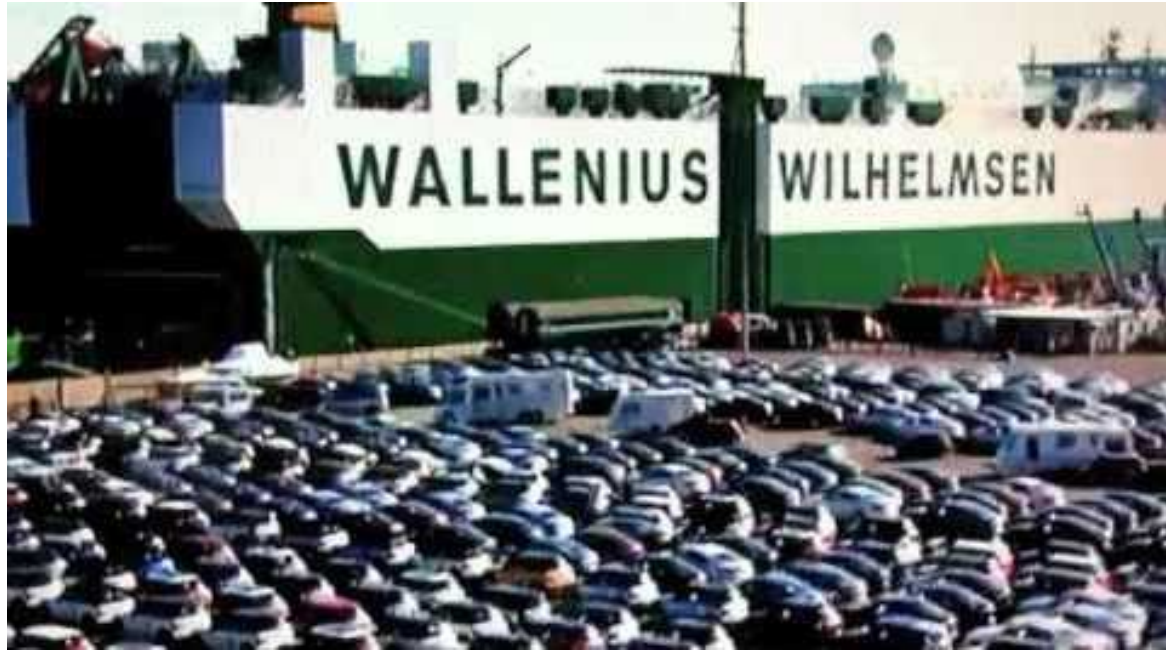


# What RO-RO Is To Us





# What RO-RO Is to the Rest of the Port Industry







**This is also RO-RO  
At the Port of Alaska!**





The Industry  
Standard  
Model for  
Container  
Delivery





# What's the Cost to the Real Stakeholders\* of Not Being Prepared to Support Industry Standard Container Vessels?



- Loss of Terminal 2: While less efficient, TOTE can continue service in T1 by moving ramp(s) onto one or more T1 trestles. Other LO-LO vessels can be brought in to service the market temporarily if needed.
- Loss of Terminal 1: Only 2 vessels in the world can operate efficiently in this T2 configuration. The average LO-LO vessel will take 5 to 7 days to service because deck width can't support the T1 mobile cranes.



# The Cost vs. Benefit of Changing (2 Points of View)

- The User Asks: Is the increased cost for changing the basis of design providing my company a level of benefit worth the value of the higher rates I have to pay?
- The Owner Asks: Is the increased cost for changing the basis of design providing a level of benefit to Alaskans—with respect to what is needed in facility resilience, flexibility, and business continuity to support our 3 missions—worth it when compared to the cost of doing so later, or of **NOT** having it when it was needed because we chose to wait?

# Additional Cost to PAMP to Widen Terminal 2

## Assumptions:

- \$2,245/sq ft present-day structural cost of terminal deck (i.e. existing Terminal 1 design)
- Utilities built to accommodate STS crane operation
- One additional marine construction season needed
- 3% escalation per annum to midpoint of Terminal 2 construction schedule

	<b>Widen to 120 ft</b>	<b>Widen to 134 ft</b>
Structural Costs	\$107,400,000	\$136,900,000
Utility Costs	\$3,500,000	\$3,500,000
Additional Mobilization	\$12,500,000	\$12,500,000
General Conditions (8%)	\$9,900,000	\$12,200,000
Contingency (10%)	\$13,300,000	\$16,500,000
<b>TOTAL</b>	<b>\$146,600,000</b>	<b>\$181,600,000</b>
<b>Escalation to 2029 \$\$</b>	<b>\$175,000,000</b>	<b>\$216,800,000</b>



# Modification of Terminal 1 to accommodate *ORCA*-class vessels

- Two trestles added to Terminal 1 layout
- Can be built in future, as independent structures
- Additional cost:

	Per Trestle	Trestle Pair
Backlands Stabilization	\$6,000,000	\$12,000,000
Trestle Construction	\$24,800,000	\$49,600,000
Additional Mobilization	\$5,000,000	\$10,000,000
General Conditions (8%)	\$2,900,000	\$5,800,000
Contingency (10%)	\$3,900,000	\$7,800,000
<b>TOTAL</b>	<b>\$42,600,000</b>	<b>\$85,200,000</b>
<b>Escalation to 2030 \$\$</b>	<b>\$52,400,000</b>	<b>\$104,800,000</b>

- Assumptions:
  - Costs based on current Terminal 1 trestle design
  - Platforms without services built as independent structures
  - One-year total construction time
  - 3% escalation per annum to 2030, following Terminal 2 construction



Construction  
of additional  
trestles





# It's the Owner's Responsibility to:

- Ensure that the 75-year design selected will have the flexibility to support the total Port of Alaska mission into the future—no matter what that future may look like—without adversely affecting the current users' business models in the present;
- **NOT** to *guarantee their profitability, and*
- **NOT** to knowingly *give one user a competitive advantage over another*

In the end, how we proceed will be  
a *policy call that the Assembly—the facility owner—must make  
based on federal, state, and local operational needs...*  
and that we will execute to the best of our ability once it's made!





Thank you!  
Questions?