Item No.: 8g_supp
Meeting Date: April 28, 2026

Pier 91/ Pier 66 Cruise Shore Power Extension Project

Early Work Amendment Authorization for Progressive Design Build Contract

Action Requested

Request Commission authorization for the Executive Director to approve funding to execute an Early Work Amendment to the alternative public works Progressive Design Build contract, MC-0322060, for the T91/P66 Cruise Shore Power Extension (C801983) (includes C802116 – P91 South Bollards) project to procure long-lead materials in advance of the Guaranteed Maximum Price Amendment. Total requested for this action is $5,200,000 for a total project authorization of $20,650,000.

Project Purpose

- **In July 2024, Commission Order No. 2024-08 was passed mandating that all homeport cruise ships connect to shore power by 2027.**
- To meet the mandate, the existing shore power systems need to be extended at Pier 91 and Pier 66.
  - Currently, the shore power cables cannot reach from the berth connection point to plug-in locations on all shore power capable ships.
- This project will provide maximum flexibility in how ships with different shore power configurations berth at the pier so they can connect to shore power.

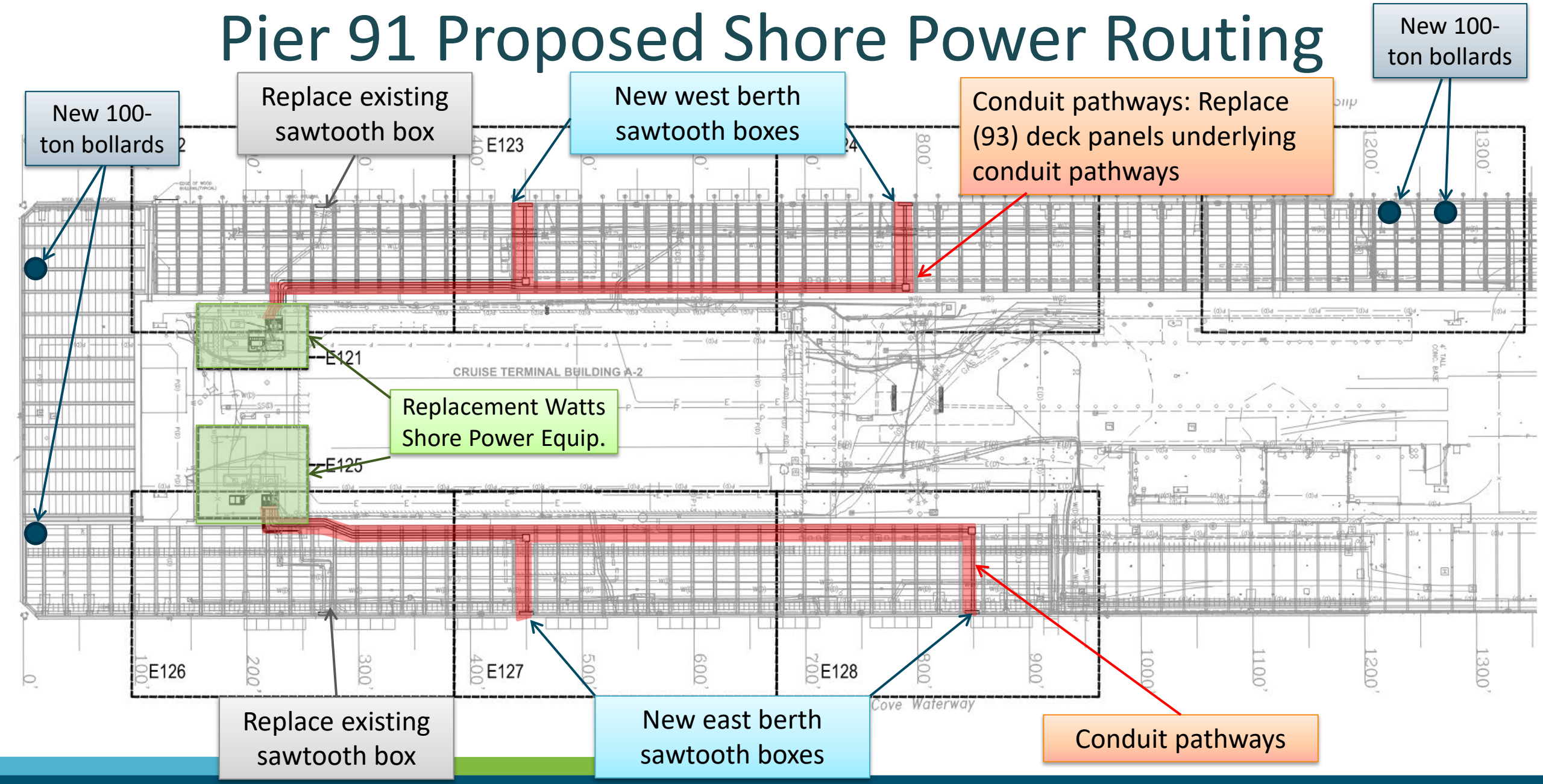
Details of Request

- Skanska USA Building Inc. (Skanska) has completed 60% design of the T91/P66 Cruise Shore Power project during GMP Development. Long lead materials were identified for early procurement to ensure on-time delivery to meet project deadlines:
  - P91
    - Procure (93) pre-cast deck panels that will be replaced underlying preferred conduit pathway
      - Identified for replacement due to material condition during Validation and Design
    - Procure (12) additional pre-cast deck panels currently rated as “critical” condition with operational load restrictions.
    - Procure all electrical cabling for east berth and west berth shore power (22- week lead time plus 1-week for delivery)
  - P66
    - Procure all electrical cabling

Pier 91 Status

- **60% Design complete. GMP development in ongoing.**
  - The conduit route through the ballast on the wharf close to bulkhead was identified as the optimal solution.
    - This approach was selected based on:
      - Cost efficiency,
      - Straightforward construction process
      - Absence of in-water permitting requirements
      - Minimal risk of encountering unforeseen subsurface features
  - (2) new sawtooth boxes are recommended on the west berth at footmark 450’ and 790’
  - (2) new shore power connection points are recommended on east berths at footmark 450’ and 849’
  - Replacement of the existing sawtooth boxes on the east and west berths to modernize the equipment and allow for maximum flexibility in the use of the mobile cable positioning devices (CPD).
  - (2) new 100-ton bollards near the 1,200’ footmark of the west berth
  - (2) new 100-ton bollards on south end of P91
  - Replacement of (93) deck panels underlying preferred conduit pathway
  - Replacement of (12) “critical” condition deck panels on P91 within project footprint
  - Replacement of Watts shore power equipment at the end of service life

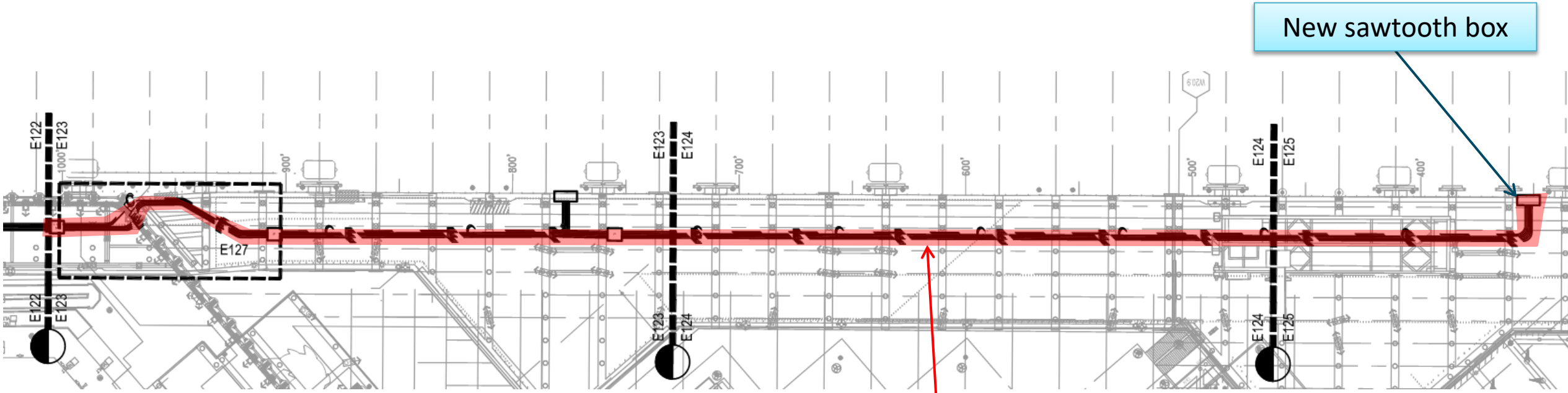
Pier 91 Proposed Shore Power Routing



Pier 66 Status

- **Advance Design and GMP development for the shore power extension project at P66.**
  - (1) new shore power connection point will be installed at footmark 352’
  - Route conduits over the wave barrier wall to route the conduit from the south to north end of the pier at footmark 352’
  - Install new hangars for new conduit routing

Pier 66 Proposed Shore Power Routing



Cost Breakdown

Cost Element	Current Request	Total Cost
Planning through Validation	**$0**	**$2,450,000**
Pier 91	$0	$1,620,000
Pier 66	$0	$830,000
GMP Development	**$0**	**$5,000,000**
Pier 91	$0	$3,800,000
Pier 66	$0	$1,200,000
Material Pre-Procurements (Watts)	**$0**	**$8,000,0000**
Pier 91	$0	$7,000,000
Pier 66	$0	$1,000,000
Early Work Amendment (Long-lead Material Procurement)	**$5,200,000**	**$5,200,000**
Pier 91	$4,377,000	$4,377,000
Pier 66	$700,000	$700,000
P91 South Bollards (C802116)	$123,000	$123,000
Remaining Amount to be Authorized (Construction-Final GMP)	**$0**	**$39,150,000**
Pier 91	$0	$27,000,000
Pier 66	$0	$10,000,000
P91 South Bollards (C802116)	$0	$2,150,000
	Total*	**$59,800,000**

*Overall costs have increased since last authorization due to added scope and design refinement. $5M of net changes due to added scope and will draw from existing project budgets, including $2M from S. P91 Bollards (CIP # C802116) and $3M reduction in budget forecast for Dock Rehabilitation project (CIP# C801294).

Project Schedule

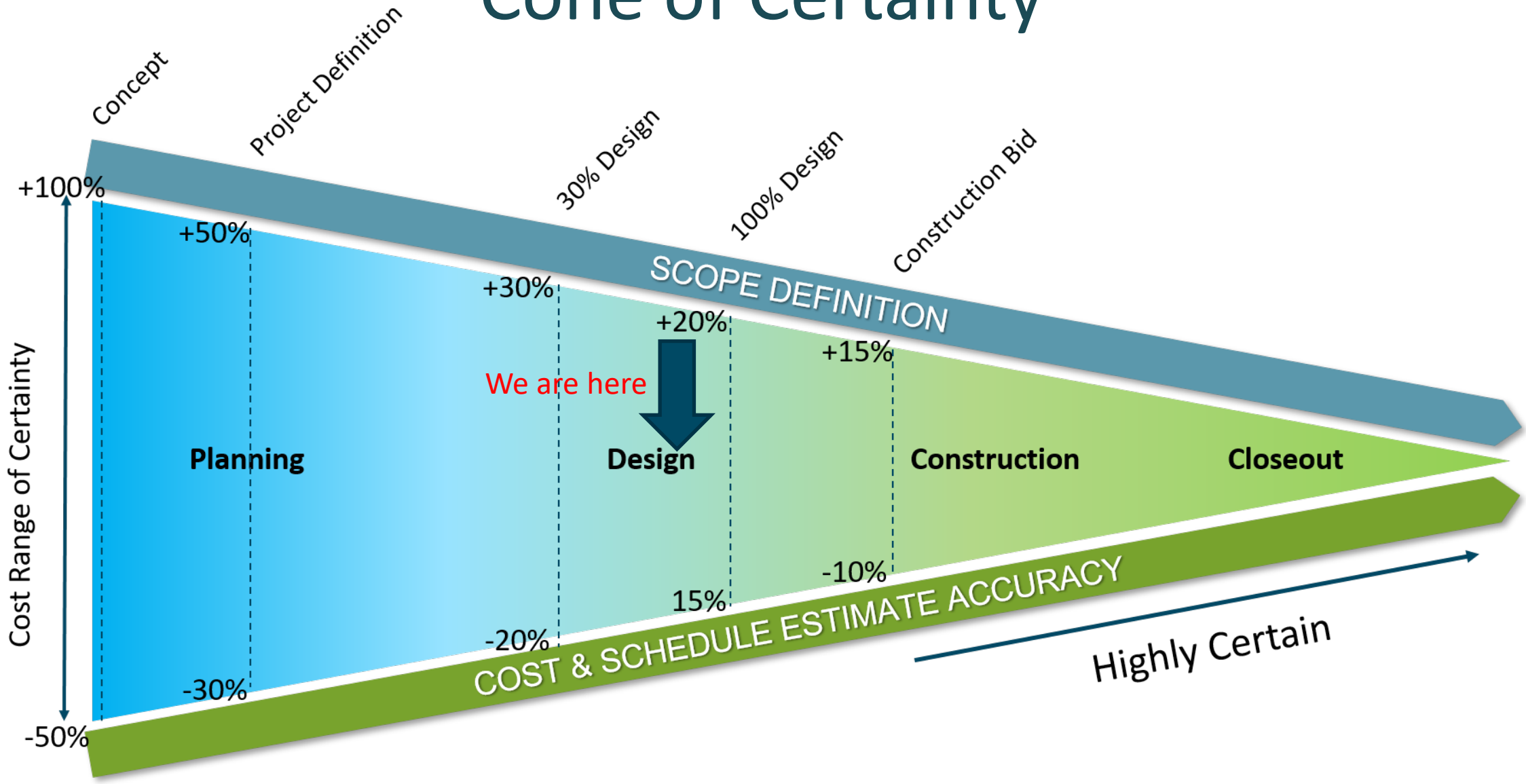
Phases	Anticipated Dates
Commission Authorization – T91 Mobile Cable Positioning Devices (CPDs) and T91 Cruise Shore Power Extension North initial design funding	August 8, 2023
DORA – Progressive Design Build Procurement and Preliminary Design	October 16, 2024
Commission Authorization – Watts Marine, LLC Purchasing Contract	April 22, 2025
Commission Authorization - Progressive Design Build Contract – Validation Phase	July 8, 2025
Commission Authorization – Post-Validation Amendment funding	December 9, 2025
Commission Authorization – Early Work Amendment (Mini GMP)	April 28, 2026
Commission Authorization – GMP Amendment funding	Q3 2026
Construction	Q4 2026 – Q2 2027

Next Steps

- Final design development and final GMP development Q2 2026 – Q3 2026
- Commission Authorization Final design/Construction Q3 2026
  - Final GMP, scope, schedule
- Construction Q4 2026 – Q2 2027

RISKS	DESCRIPTION	PROBABILITY	IMPACT	MITIGATION
Constrained Schedule	Delivery required by 2027. Minimal work windows due to cruise season, commercial fishing season, tribal agreements, and fish window if in-water work is needed have high potential to delay in-service date past cruise season start in 2027.	High	High	Utilize Progressive Design Build project delivery to accelerate timeline. Pre-purchase of long-lead items.
Seattle City Light Terminal 91 Operations Agreement	Existing operations agreement between cruise lines and SCL does not account for increased connections during peak power usage times during the week. Negotiation of new agreement when Port takes ownership of the shore power equipment may result in higher usage costs, and interruptions in power delivery during the week.	Med	High	Early engagement with SCL to do system impact study and begin negotiation of agreement terms for power delivery.
Supply chain uncertainty	Supply chain logistics could delay project delivery. Tariffs could impact ability to procure long-lead electrical equipment by 2027 and create uncertainty in pricing.	Med	High	Adding cost contingencies to account for tariff price impacts. Early execution of Watts contract to begin procurement of long-lead shore power equipment in advance.
Dock Rehabilitation – deck panel condition	The deck panels in DU#9202 on Pier 91 have continued to degrade rapidly. Ongoing discussions with the Dock Rehab project team have potential to add/change scope.	Med	Low	Coordinated evaluation of the deck panels and potential solutions- incorporating limited scope into shore power to replace only underlying deck panels.
Coordination with other projects at Terminal 91	There are many other projects scheduled on Pier 91 with similar timelines to the cruise shore power project: gangways, water line replacement, dock rehabilitation, west berth dredging.	High	Med	Identification of all on-going and upcoming construction work at Terminal 91. Requirement of logistics plan by PDB to account for constraints of other projects.
Permitting	Permitting assumptions are aggressive and assume no in-water work window constraints and that the project is considered repair and maintenance under SEPA and the shoreline code. Any change in assumptions will delay the project.	High	High	Progressive Design Build project delivery will allow for early collaboration on design and permitting to the extent feasible.

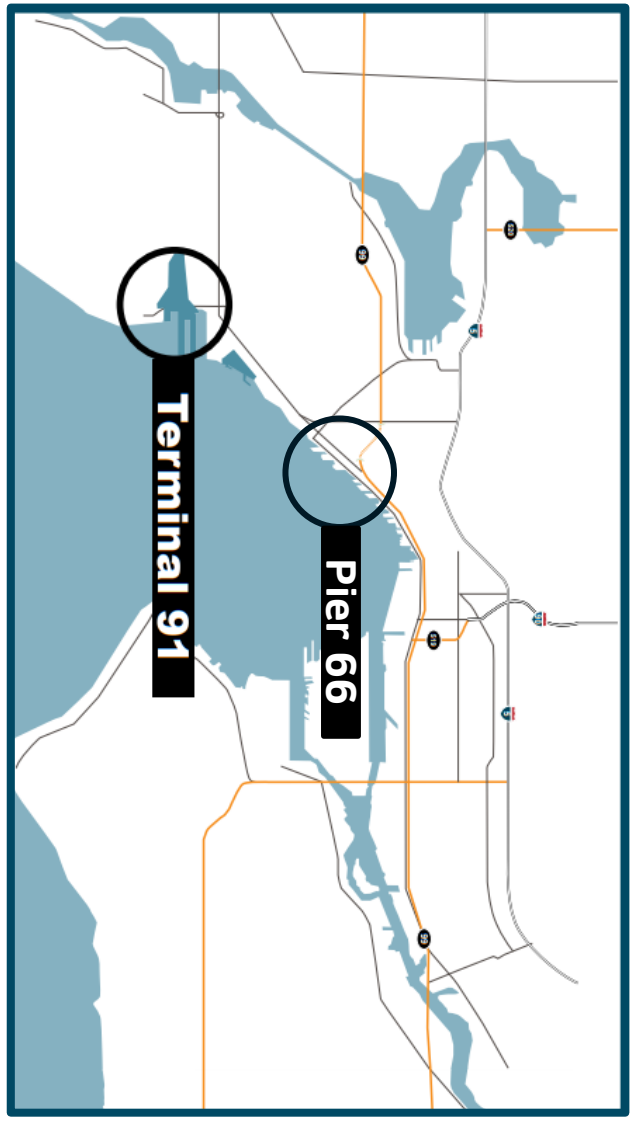
Cone of Certainty

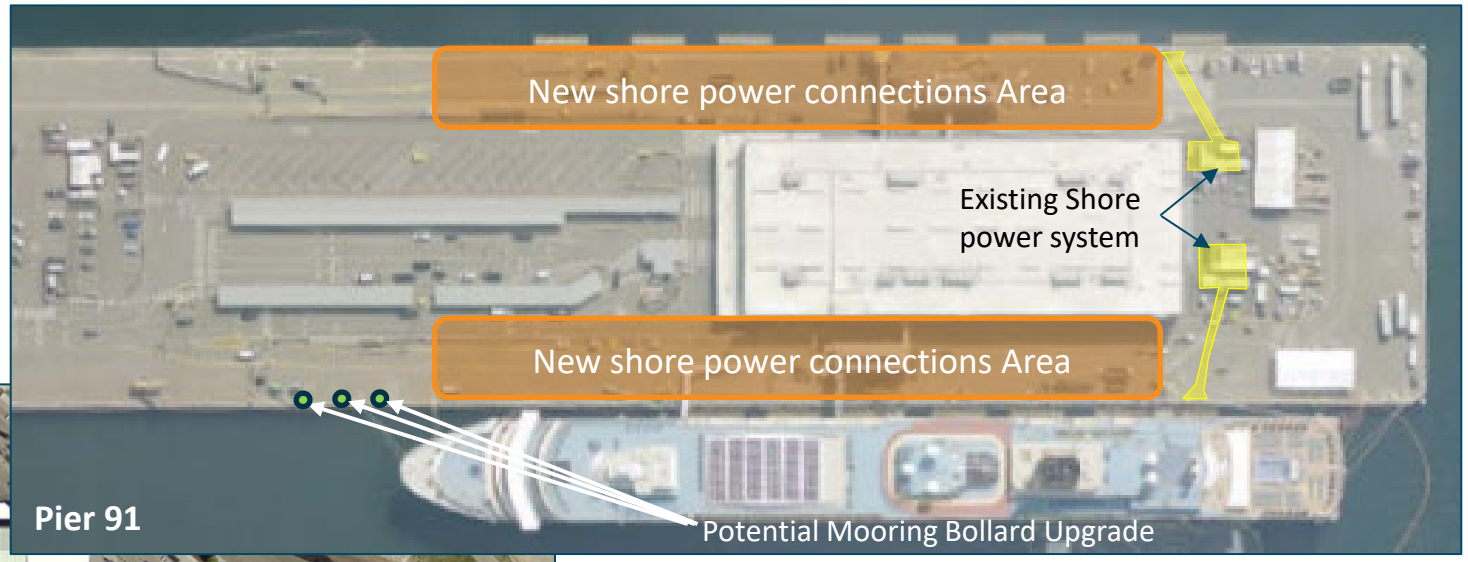


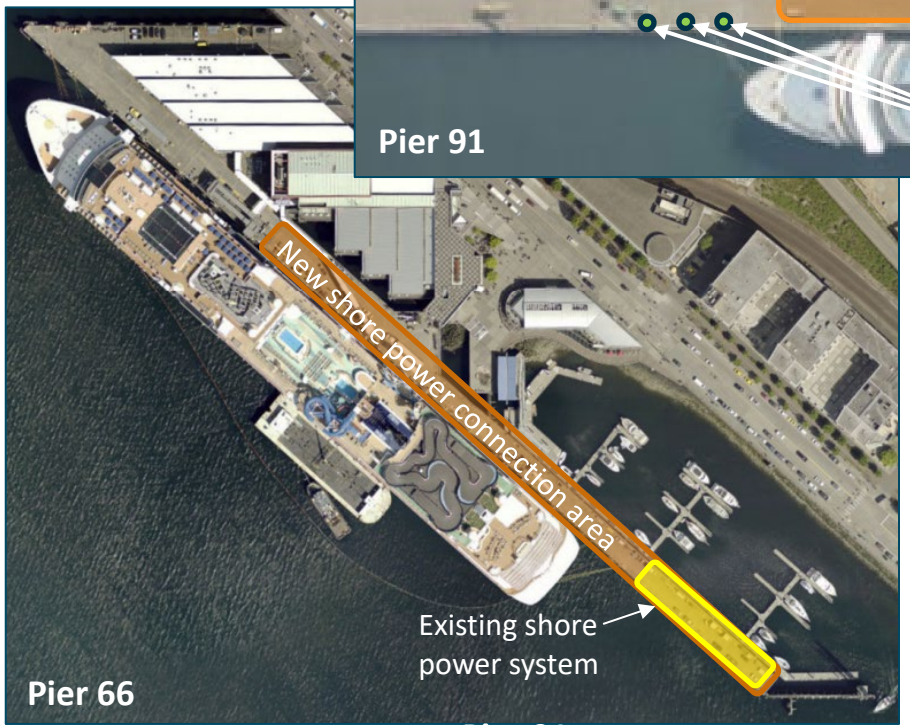

Questions?

Appendix

Project Areas – Pier 91/Pier 66



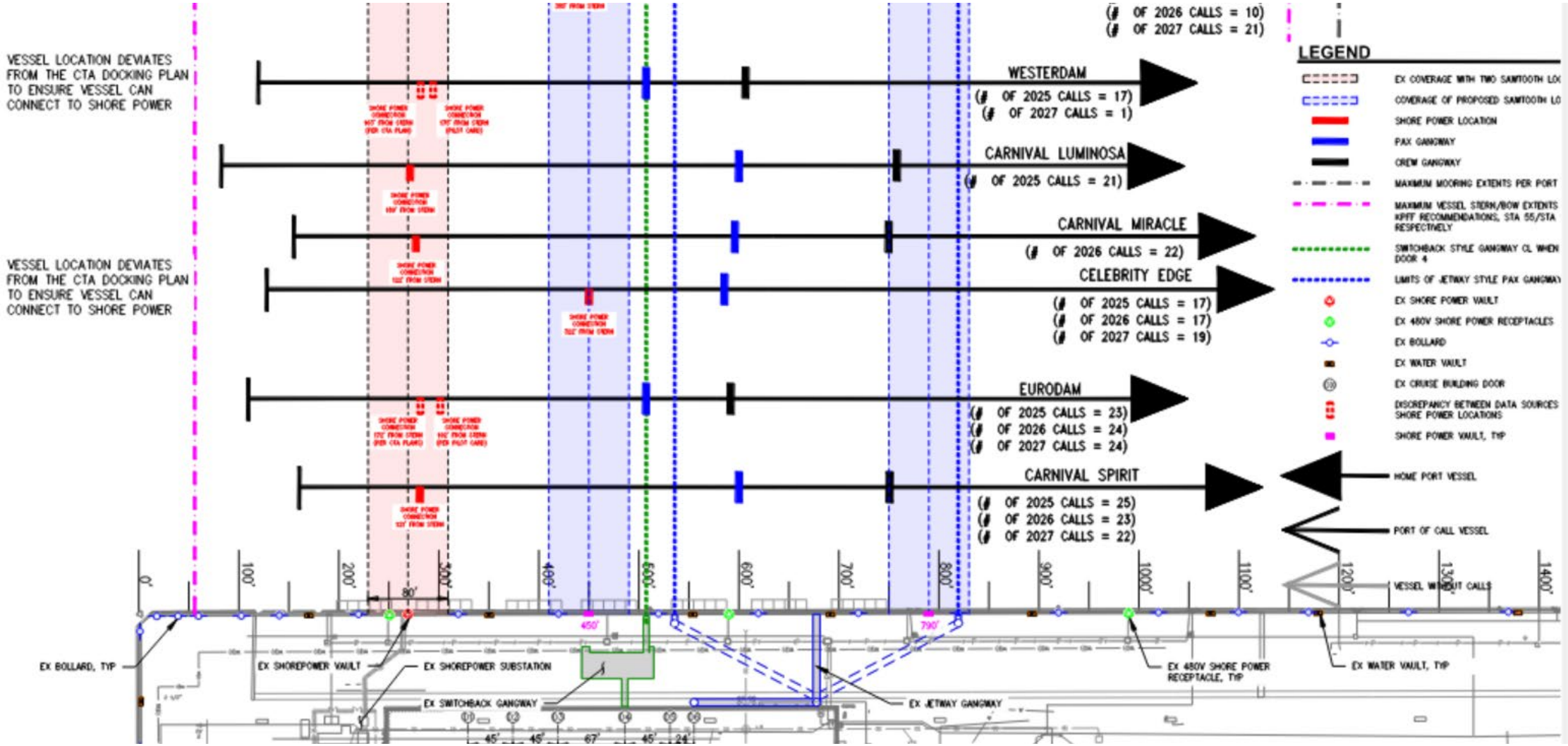




Project Scope

- Design and construct all necessary infrastructure upgrades to (2) Pier 91 cruise berths and Pier 66 cruise berth to meet project goals, including :
  - Conduct a berthing and mooring study for all known current and future ships to determine optimal connection locations, distribution pathways, and required mooring bollard upgrades.
  - Extend the existing shore-power system to allow all known current and future ships of different configurations to connect to shore-power
  - Ensure compatibility of the extended cruise shore power system with existing equipment and facilities, including the mobile cable positioning devices (CPD).
  - Procure all permits
  - Replacement of existing shore power equipment that has reached end of service life at Pier 91.
  - New mooring bollards at Pier 91
  - Potential limited deck panel replacements at Pier 91

Example Terminal 91 Berthing Analysis



Example Terminal 91 Mooring Analysis

T91W - Quantum - 40% Pretension

8 lines bow, 8 lines stern

ARRANGEMENT PLAN

35 knot Wind at 41° True | 0.0 ft Sig Wave Height | 0.0 ft Sig Swell Height | Ref: 1700263 T91 Mooring
35 knot Current 270° True | Period 6.0 secs at 90° | Period 2.0 secs at 160° | Analysis for Time: 0700 Mar 01 2007

Movement of Vessel 2.10 (fwd) 0.70 (low) 0.1° (port) 0.00 (up) | Water Level 11.36 ft steady | Draft 27.9 ft | 0.1 Disequilibrium
at its Srbd Target 0.78 (fwd) 1.70 (low) -0.1° (stbd) 0.00 (up) | Bottom Clearance 18.5 ft | Trim 0.0 ft | after 75 iterations

Line	1	2	3	4	5	6	13	14	15	16	18	20	22	24	28	30
to Bollard/Hook	C	C	B	B	D	D	F	F	'G	'G	'F	'F	Q	Q	O	N
Pull-In (ft)	2.95	2.91	3.10	3.13	2.82	2.76	3.67	3.64	3.50	3.37	3.16	3.16	2.96	3.01	2.31	2.58
Total Line Length	111.2	107.5	138.6	141.5	80.3	75.4	149.7	145.9	129.2	119.0	104.7	108.2	96.7	95.0	142.1	231.6
Inline Motion (±)																
Winch Slippage																
Wave Direction	130°	130°	130°	130°	130°	130°	330°	330°	50°	50°	50°	50°	50°	50°	50°	55°
Tension (kips)	133S	135S	132S	132S	123S	125S	100S	99.5S	131S	125S	116S	113S	136S	124S	181S	146S
% of Strength	41%	42%	41%	41%	38%	39%	31%	31%	41%	39%	36%	35%	42%	38%	56%	45%

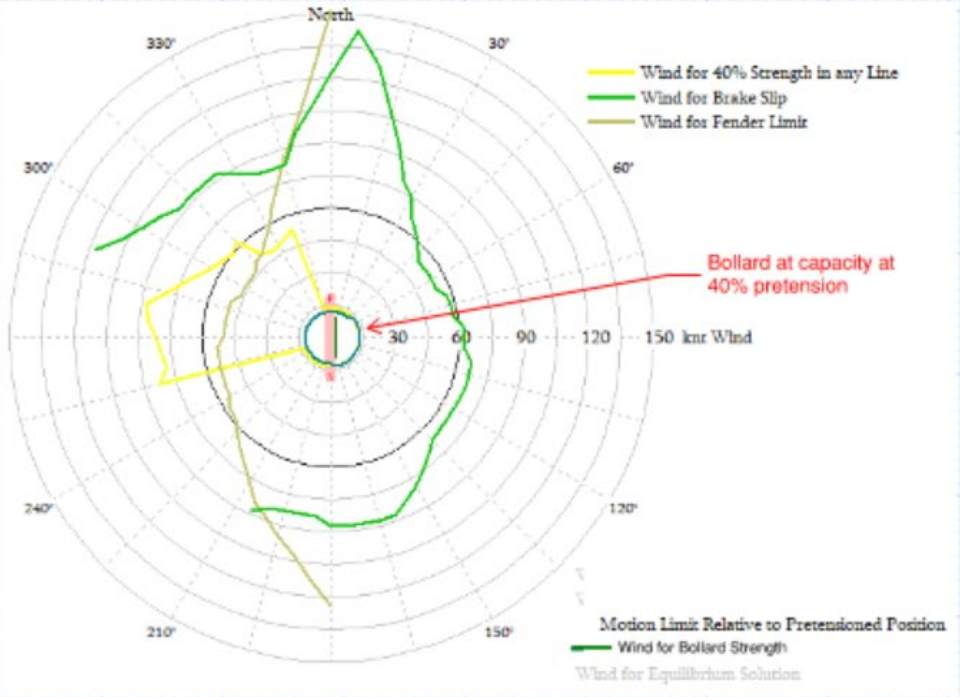
Auto-Calculation

Fender	aa	bb	cc	dd	ee	ff	gg
Tbrust (kips)	51	259	260	262	271	279	287
Compression (ft)	0.30	1.70	1.70	1.73	1.81	1.89	1.96
Pressure (kips/ft²)	0.3	1.0	1.0	1.0	1.1	1.1	1.1

Bollard/Hook	B	C	D	F	N	O	Q	'F	'G
X-Force (kips)	-102.6	-78.5	-12.4	167.5	-139.7	-147.0	105.4	133.4	133.8
Y-Force (kips)	242.2	253.9	244.3	94.2	29.2	78.0	195.9	159.3	204.6
Other X-Load									
Other Y-Load									
Total Force	264.0	267.7	248.7	199.9	145.7	181.5	258.5	229.4	256.4
% Bollard Strength	120%	121%	113%	181%	66%	82%	117%	104%	117%
Direction in Plan	-23°	-17°	-3°	61°	-78°	-62°	28°	40°	33°
Bollard Uplift	23.3	32.1	45.0	54.8	29.2	72.3	131.7	97.1	77.1

MOORING RESULTS TABLES

Analysis for Time: 0700 Mar 01 2007 (initialised at 0700 Mar 01 2007)
Ref: 1700263 T91 Mooring
Remarks: Remarks:
Water Level: 11.36 above datum
Draft: 27.9
Trim: 0.0



WIND CAPACITY ROSE

kpff 1601 Fifth Avenue, Seattle, WA 98101 kpff.com

POS T91 CRUISE SHORE POWER

40% PRETENSION OPTIMOOR RESULTS SUMMARY AT T91W - QUANTUM

PROJECT NO. 250049 | DATE 10/29/2025 | BY CH | REFERENCE SHEET | SKETCH NO. 1