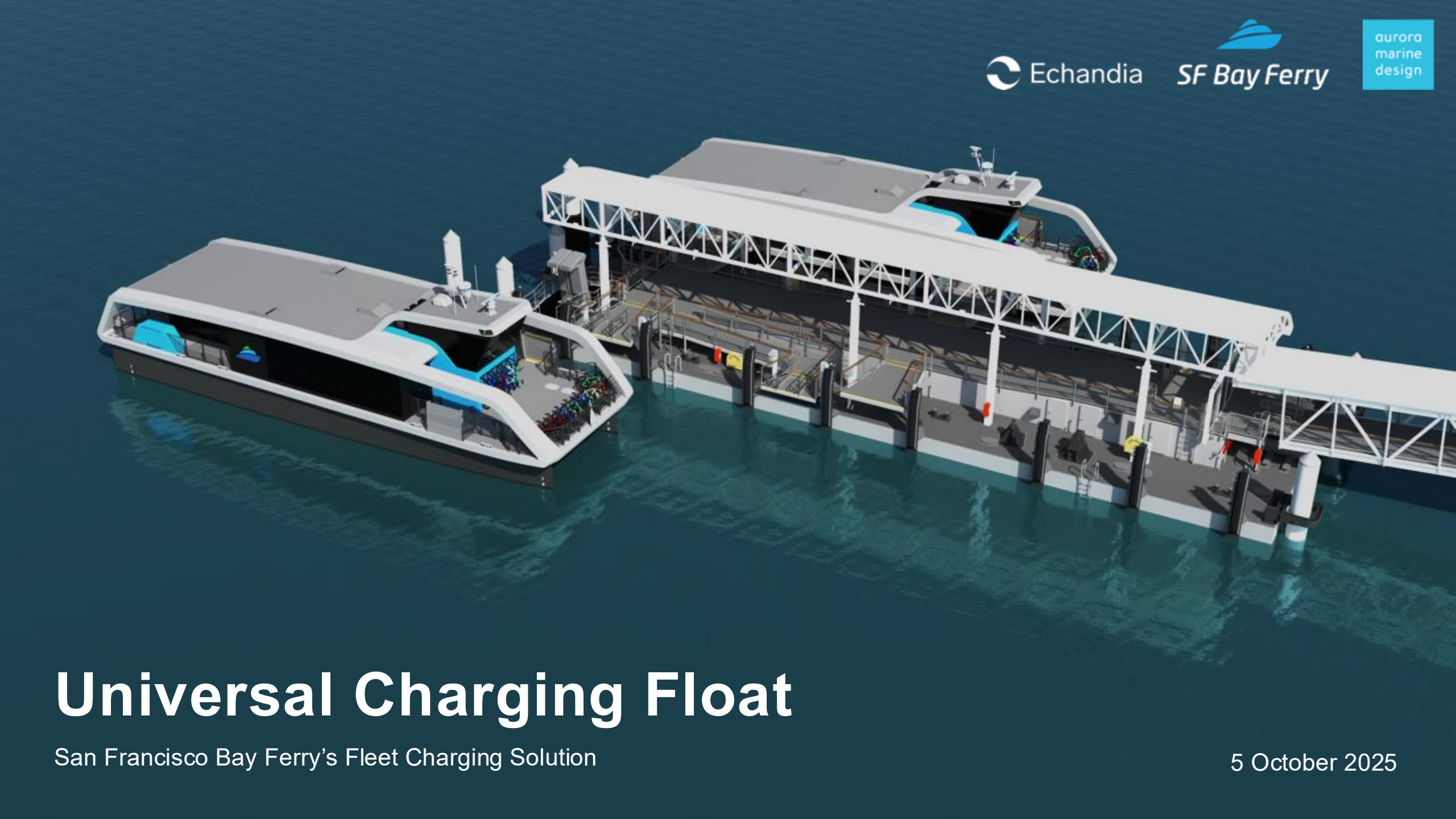


Universal Charging Float

San Francisco Bay Ferry’s Fleet Charging Solution

5 October 2025

Zero-Emission Transition

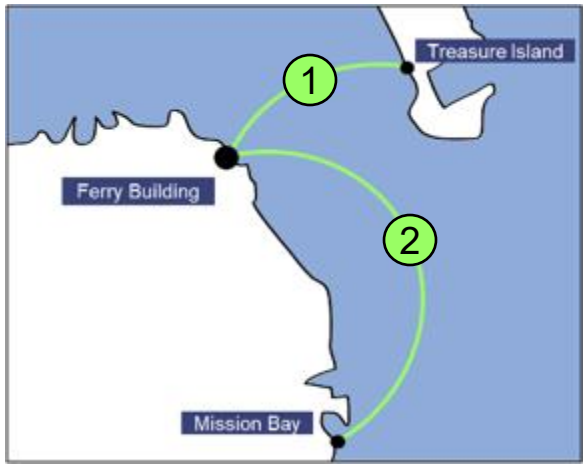
San Francisco Bay Ferry
A SERVICE OF WETA

- Cleanest ferry system in the US
- Global progress, US lagging
- Scarce regional operating funds
- Regulation
- Historic capital funding levels
- Highest-rated US transit service

2025	18	11	3.5 M
2050	35	21	6.0 M

Phased Transition

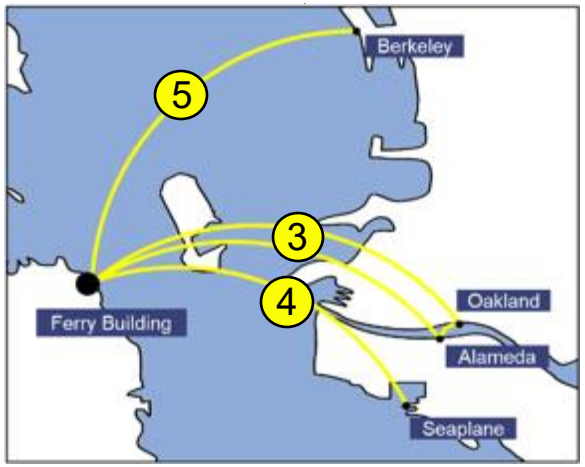
Phase 1 - Inner Central Bay



1 Treasure Island

2 Mission Bay

Phase 2 – Central Bay

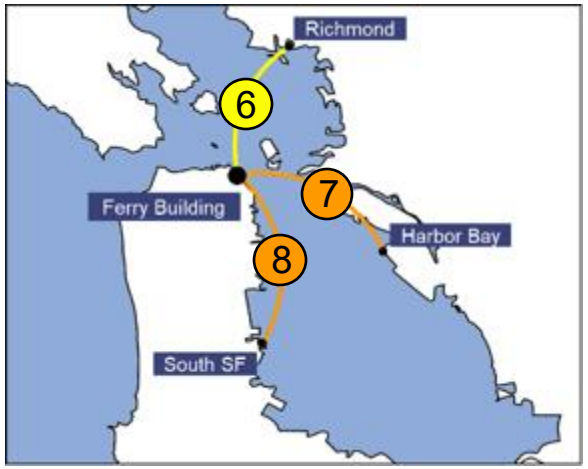


3 Oakland/Alameda

4 Seaplane

5 Berkeley

Phase 3 – Long Run Central Bay

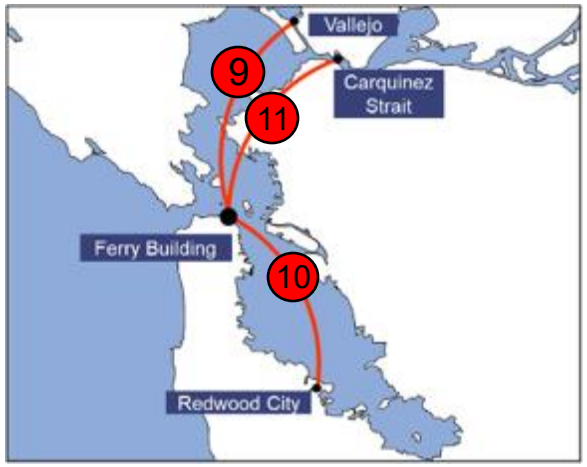


6 Richmond

7 Harbor Bay

8 South SF

Phase 4 – Long Runs



9 Vallejo

10 Redwood City

11 Carquinez

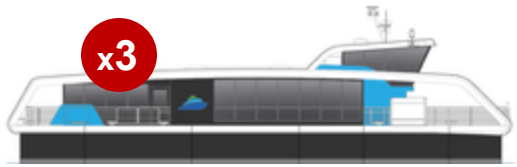
Feasible with Current Vessel Technology

Feasible with Current Vessel Technology - Operational Changes Required

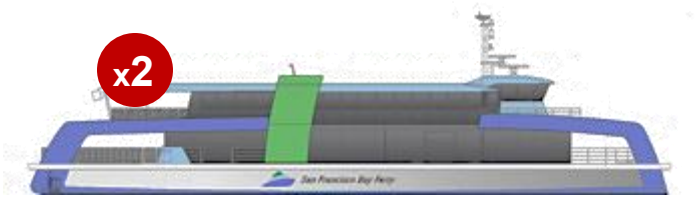
Feasible with Current Vessel Technology - Significant Operational Changes Required

Not Currently Feasible – TBD Future Technology Required

San Francisco Bay Ferry
A SERVICE OF WETA



NEW 150 PAX Vessels



NEW 400 PAX Vessels

CONVERTED 400 PAX Vessel

NEW & CONVERTED Charging Floats

Electrification Phases 1&2

- 150-passenger battery electric ferries
  - Up to three vessels
  - Awarded to All American Marine
  - First expected early 2027
- 400-passenger battery electric ferries
  - Up to two vessels
  - Awarded to Nichols Bros.
  - First expected early 2027
- 400-passenger battery electric ferries
  - One vessel
  - Conversion commencing 2026
- Universal Charging Floats
  - Up to four battery floats for San Francisco and Alameda terminals
  - Award expected October 2025

San Francisco Bay Ferry
A SERVICE OF WETA

Zero-Emission Transition Funding Secured: $252M

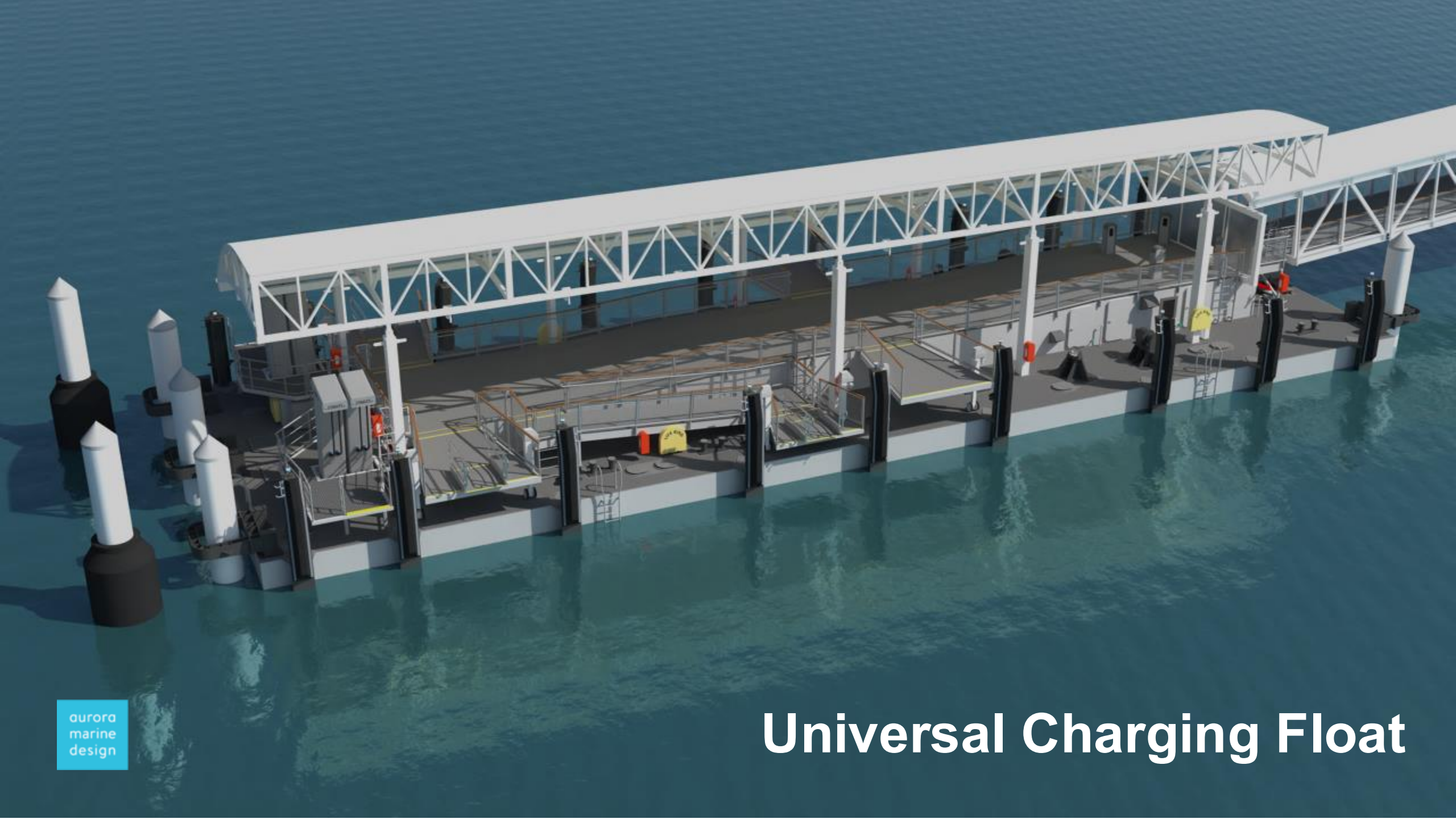
Federal - $131.9M

- EPA Clean Ports
- FTA Passenger Ferry Grant Program
- FTA 5307/5339 formula funds
- DOT Carbon Reduction Program

State - $76.9M

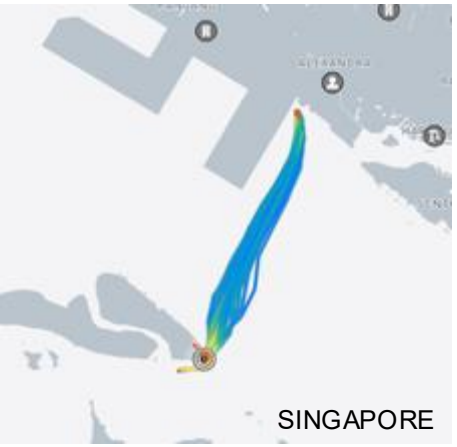
- Transit Intercity Rail Capital Program
- State Transit Assistance
- Low Carbon Transit Operations Program
- CEC Clean Transportation Program
- VW Mitigation Funding

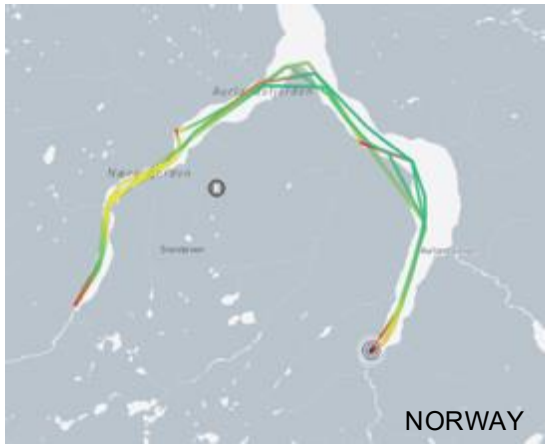
San Francisco Bay Ferry
A SERVICE OF WETA

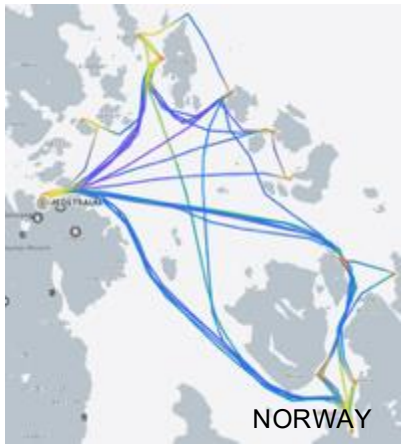


Universal Charging Float

Service Complexity







ELECTRIC FERRIES ARE OPERATING DAILY WORLDWIDE

What makes SF Bay Ferry's transition so complex?

- Need to support **3+ CLASSES OF ELECTRIC VESSELS** – each with unique capacity, speed & range requirements
- Need common charging at multiple terminals in **SIX DIFFERENT CITIES**
- Continue to **SUPPORT DIESEL FLEET** during the transition

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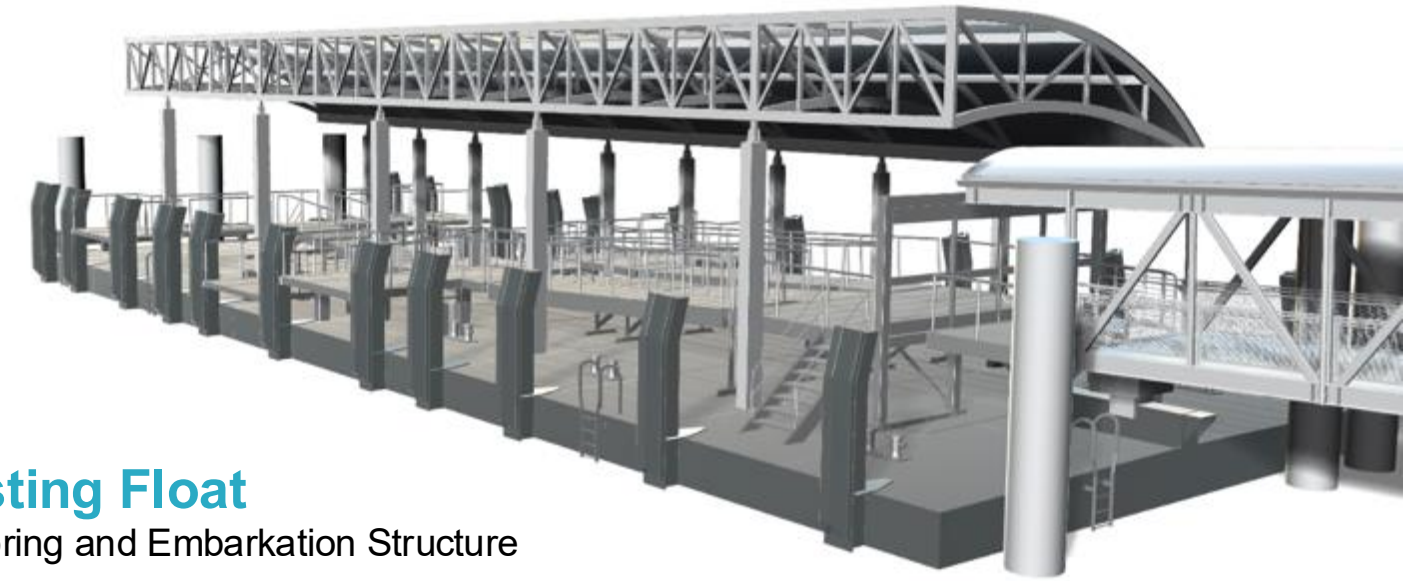
The Regulatory Challenge

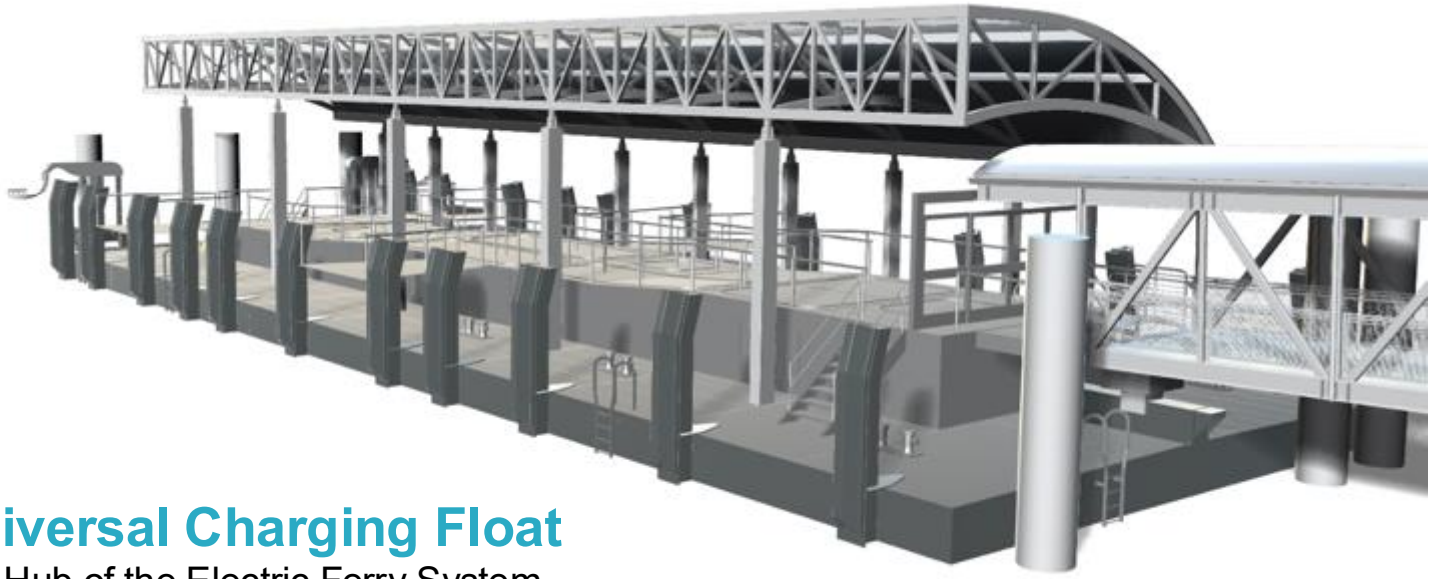
- Charging floats are **UNCHARTED TERRITORY**
- Large number of Stakeholders
- USCG has no jurisdiction
- Recently adopted building code now has provisions for floating structures
- Building a “vessel” to landside building regulations
- **SAFETY** first and foremost

The UCF Conversion Solution

- Repurpose and Re-use
- Minimize visual impact
- Leverage existing permitting



Existing Float
A Mooring and Embarkation Structure



Universal Charging Float
The Hub of the Electric Ferry System

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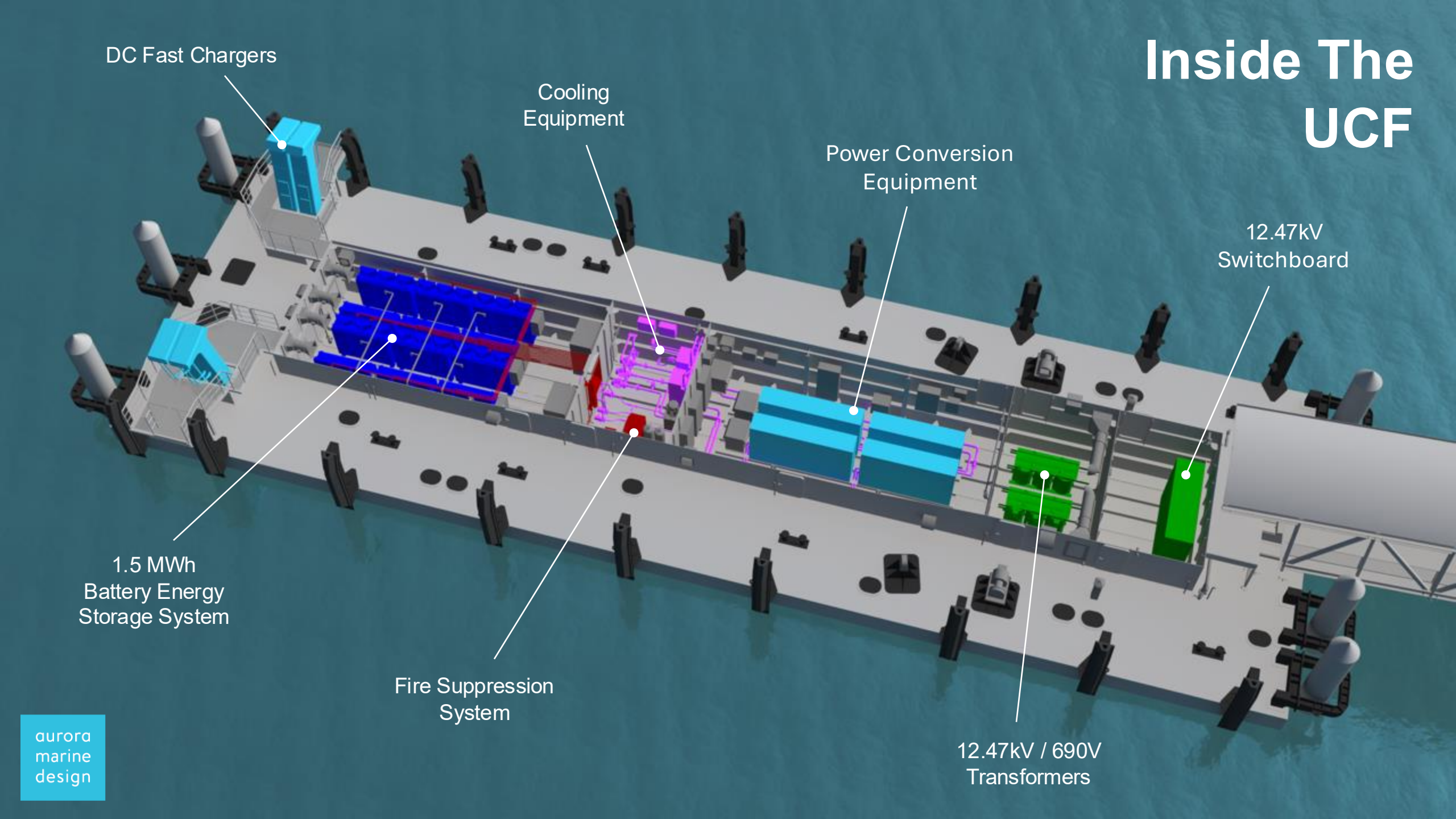
Inside The UCF



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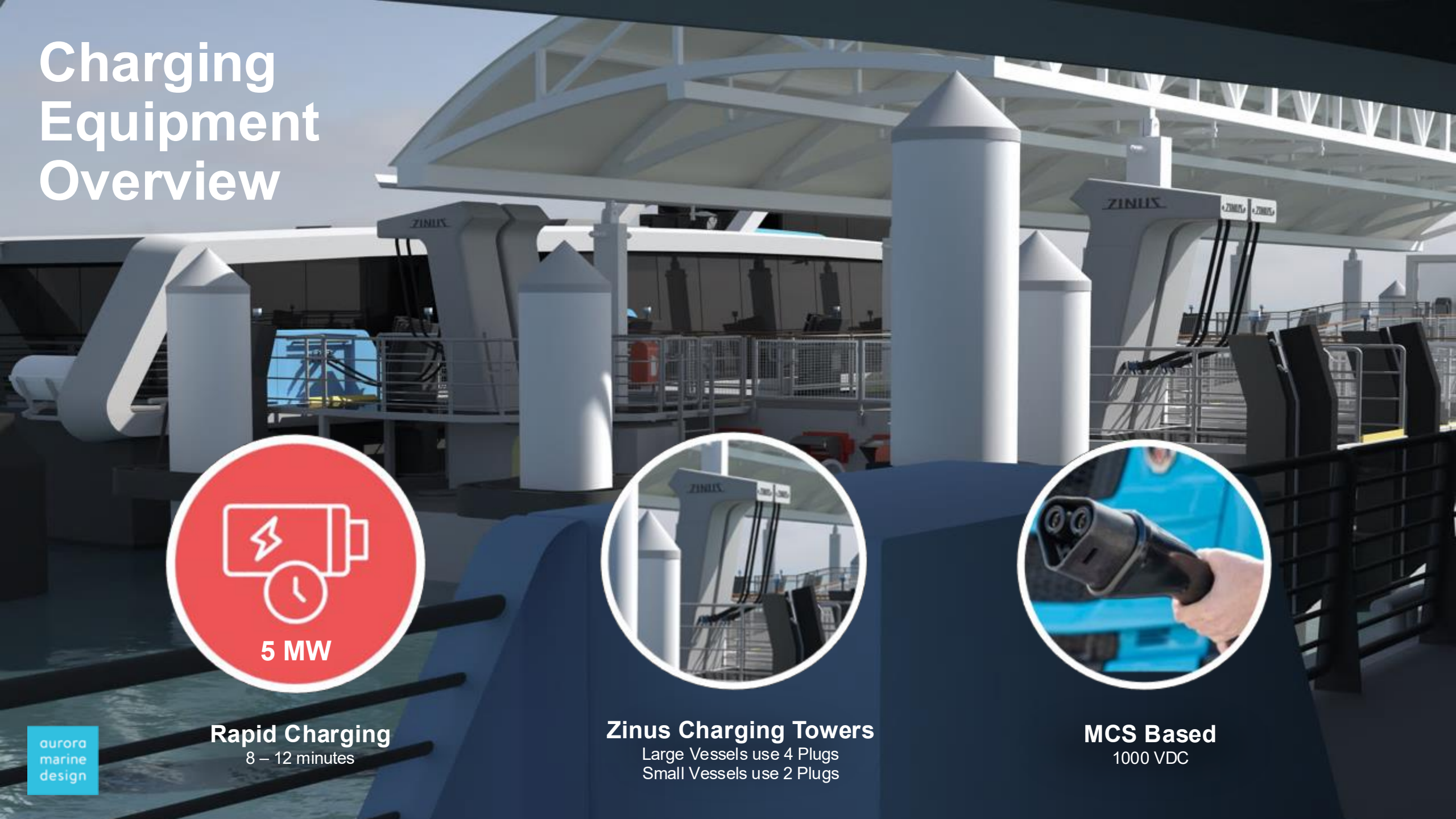
Charging Equipment Overview



5 MW

Rapid Charging
8 – 12 minutes

Zinus Charging Towers
Large Vessels use 4 Plugs
Small Vessels use 2 Plugs

MCS Based
1000 VDC

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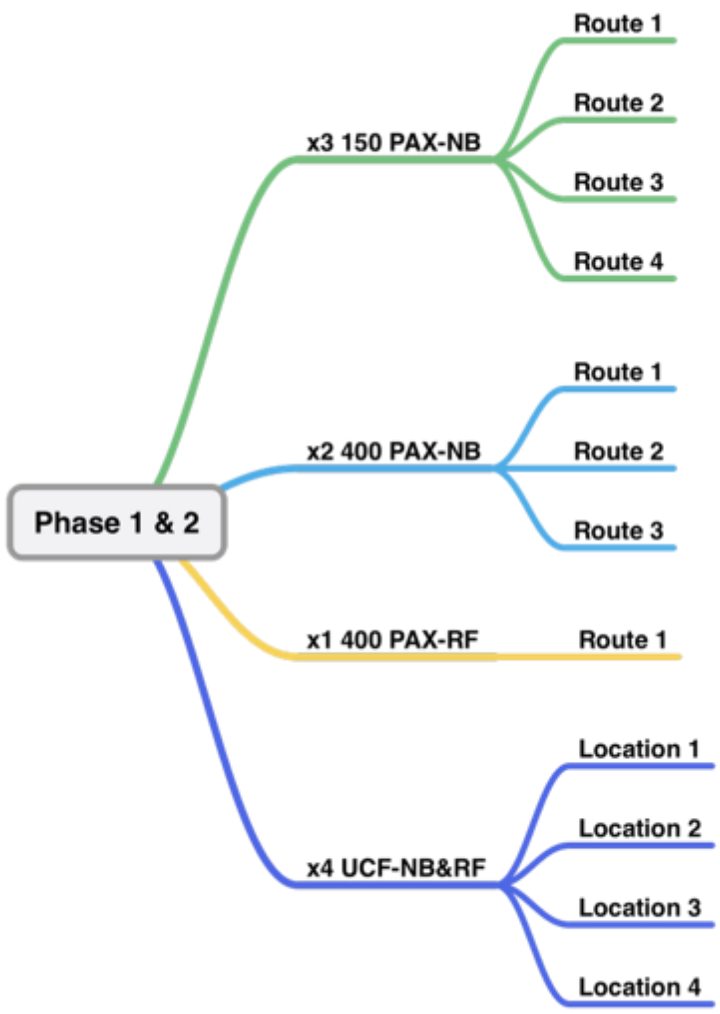
The Technical Complexity



Design

- Load Profiles
- Customer Requirements
- Emergency Return to Port Provision
- Charging Power & Times Available
- Authorities Having Jurisdiction

510kWh

1603kWh

1276kWh

1501kWh

Delivery

- 2-Naval Architects
- 1-Integrators
- 1-Project Partner
- 4-Authorities
- 3-Shipyards

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WÄRTSILÄ

ABS

ALL AMERICAN MARINE

ELLIOTT BAY DESIGN GROUP

FIFI4MARINE

NICHOLS BROS. BOAT BUILDERS

Echandia

Powering the UCF

1501 kWh

Phase 1 & 2 — x4 UCF-NB&RF — Location 1

The Numbers

• Cycle & Charges per Day	20
• Operational Days per Year	360
• Design Life in years	15
• Cycles at End of Life	108,000
• RMS Charge Rate	3.0
• Energy per Cycle kWh	800
• % SoH at End of Life	88%

Delivered Energy = Cycles x Energy Used
= 86.4GWh

Energy Delivered, Not Just Installed

86.4 GWh is Equivalent to

- **Powering 24,62 EU House for 1 year**
- **Diesel Fuel Equivalent 2.3MG / 8.9ML**
- **EV Driving Distance (KM) 288~566MKm**

Echandia

Collaboration

Vision

Design

Execution

Execution starts long before the first vessel is built. What you see today is the result of people committed to the process, project and **to each other**.

Echandia

Questions?

Echandia

SF Bay Ferry

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Safe
Reliable
Efficient