



A Strategic Alliance for Maritime Innovation and a Sustainable Blue Economy

Washington Maritime Blue is a non-profit (501c3), strategic alliance formed to accelerate innovation and sustainability in support of an inclusive blue economy. Maritime Blue works to create a world-class, thriving, equitable and sustainable maritime and ocean industry through knowledge sharing, joint innovation, entrepreneurship, commercialization, business and workforce development.

Industry Members



Community Partners



A Strategic Alliance for Maritime
Innovation and a Sustainable Blue Economy

Research Institutions



Public Partners





Blue Ventures

Supporting Entrepreneurship
and Capital Investment



Equity Engagement

Career Connected Workforce
and Employer Development



Joint Innovation

Collaborative Project
Management for Innovation



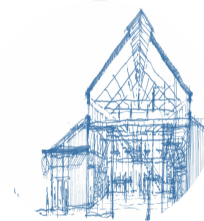
Strategic Initiatives

Knowledge Sharing and
Leadership Coordination



Quiet Sound

Reducing Noise Impacts on
Southern Resident Orcas



Blue Hub

Home for Collaboration and
Business Development



Leading **Strategic Initiatives** to support profitability, visibility,
and opportunities across the Blue Economy



Green Shipping Corridors



Innovation Cluster Model





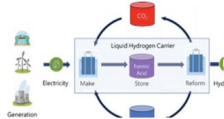
Members come together through **Joint Innovation Projects (JIPs)** to collaborate and implement key demonstration projects



Zero-Emission Foil Fast Ferry



Tacoma Tideflats 5G Network



Green Hydrogen Shore Power



Covid 19 Detection & Planning



Cost-Benefit Analysis for West Coast Offshore Wind





Our growing **Blue Ventures** innovation programs work to support founders and startups at every stage of their journey.



Our programs have **IMPACT**

Wins and Deals

- \$300M + in Private Capital Investments
- 3 Exits (1 pending)
- Several Demos & Customer Acquisitions
- Over %500 increase in revenue
- At least 400 jobs created





Fostering **Equity Engagement** and a 21st century workforce through career connected learning and employer driven engagement

**Youth Maritime Collaborative:
Expanded Maritime Cohort:
Youth Maritime Accelerator Project:
Maritime Blue Career Launch Program:**

2020-2022

Total Interns Served: **47**

Total Stipends Earned: **\$52,000**

Total Career Awareness Events: **27**

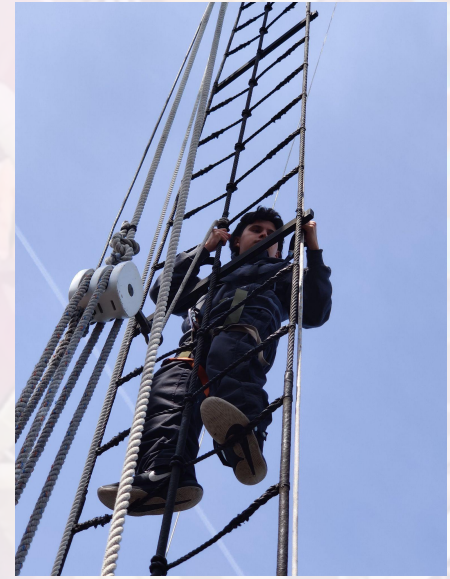
Total Youth Served: **304**

Total Employer DEI Training: **26**

Race/Ethnicity Demographics of Youth Served:

African-American 22%, Hispanic/Latino

44.4%, Asian 26.4%, Caucasian 6.7%





QUIET SOUND

A collaborative, non-regulatory program to **reduce the impacts to Southern Resident Killer Whales** from large commercial vessels

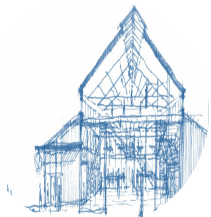
Current Projects

- **Organizational governance**
- **Whale Report Alert System**
- **Voluntary vessel slow down**
- **Underwater noise research**
- **Tech Challenge**

Working Groups

- **Vessel operations**
- **Evaluation & adaptive management**
- **Monitoring whales & vessel noise**
- **Innovation & vessel quieting**
- **Whale notification system**





Building the **Blue Hub** for collaboration, innovation, and engagement for our members, partners, and stakeholders

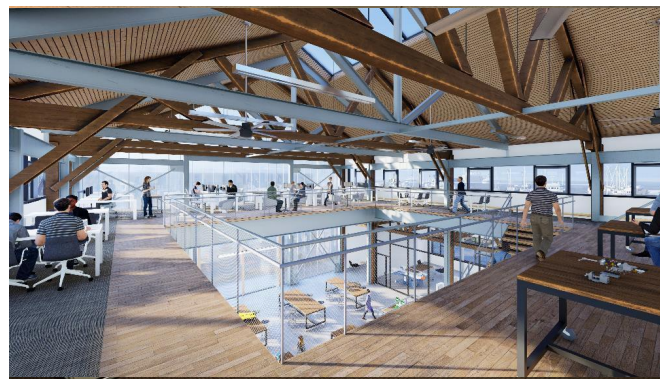
Members/Sponsors have access to:

- Board and meeting rooms
- Executive office space
- Collaborative work space



Maritime Innovation Center @ Port of Seattle

- Design and Planning for 20,000 sqft
- Full “Living Building Challenge”
- Growing collaborative work and event space





We seek to co-create a workplace culture and community that aligns with the values of the Blue Economy: diversity, equity, inclusion, and health.



Joshua Berger
President/CEO



Jennifer States
VP of Projects & Strategy



Devon Thorsell
VP of Operations



Rachel Aronson
Director, Quiet Sound



Josh Carter
Director, Blue Ventures



Veasna Hoy
Director, Equity Engagement



Robert Brown III
Program Manager,
Equity Engagement



Cassidy Fisher
Program Manager, Joint
Innovation Projects



Karina Martija-Harris
Manager, Tacoma
Maritime Incubator



Angel Menchaca
Operations Manager



Caitlin O'Morchoe
Manager, Quiet Sound



LeAsia Johnson
Manager, Youth Programs



**A Strategic Alliance for Maritime
Innovation and a Sustainable Blue Economy**

www.maritimeblue.org

[#WaMaritimeBlue](#), [#BuildBackBlue](#)



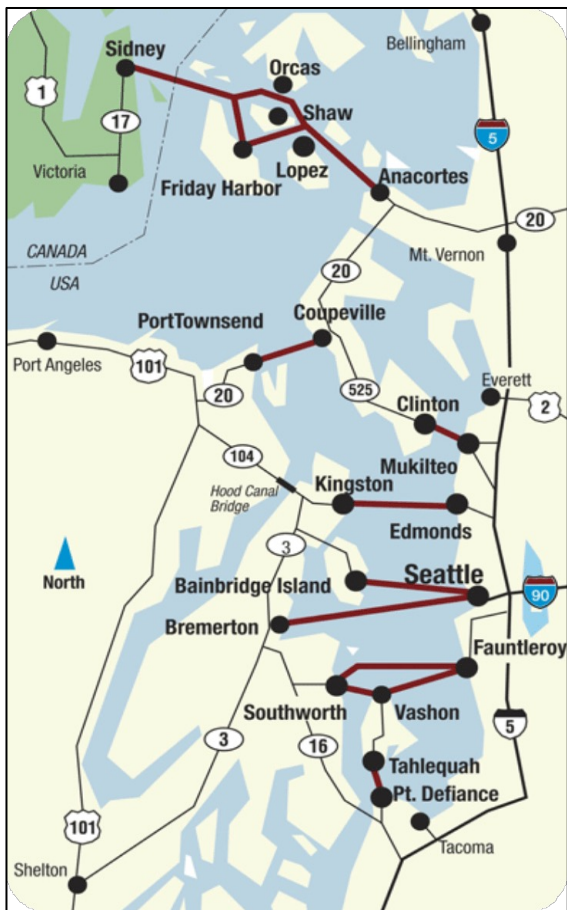


WASHINGTON STATE FERRIES

Electrification Program

Norwegian Smart Energy Network Discovery Expedition Visit
Patty Rubstello, WSDOT Assistant Secretary of Washington State Ferries
October 24th, 2022





Our Ferry System

Largest ferry system in the United States



21 auto-passenger ferries



10 routes serving 20 terminals



23.9 million riders in 2019



10.5 million vehicles in 2019



450 sailings per day

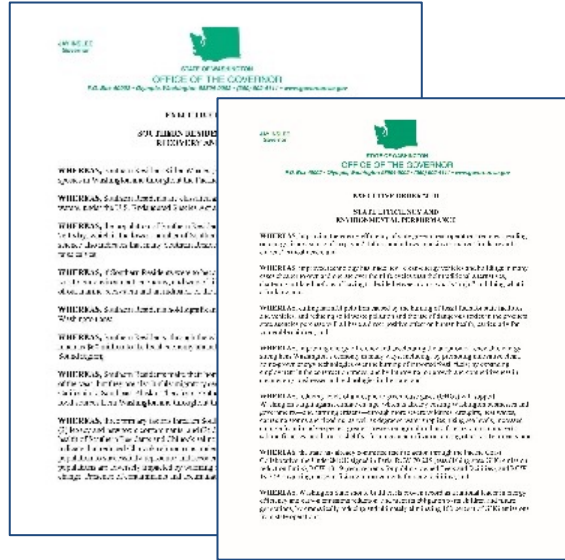


1,800 employees

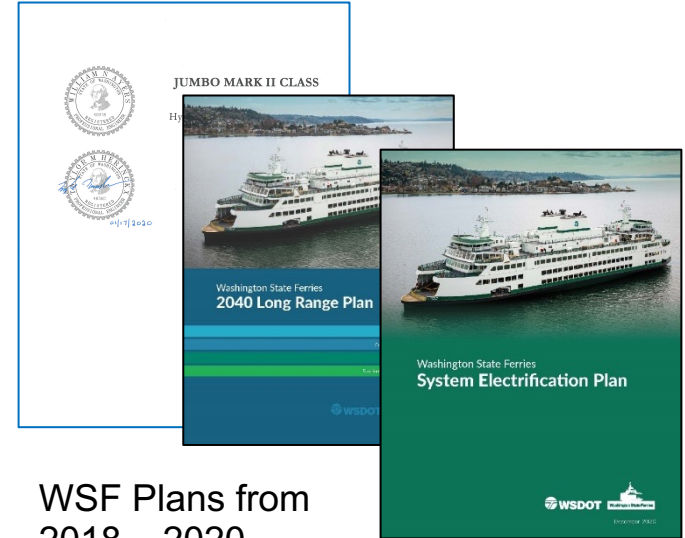
Launch of WSF Electrification Program



RCW 70A.45.050 –
Greenhouse gas emission
limits for state agencies
(2020)



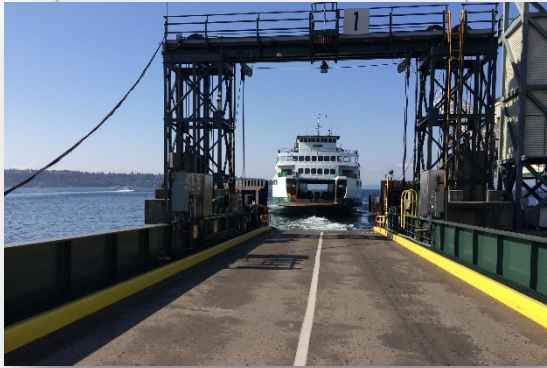
Governor Inslee's Executive
Orders 2018-01 and 2020-01



WSF Plans from
2018 – 2020

Program Elements

Terminal improvements

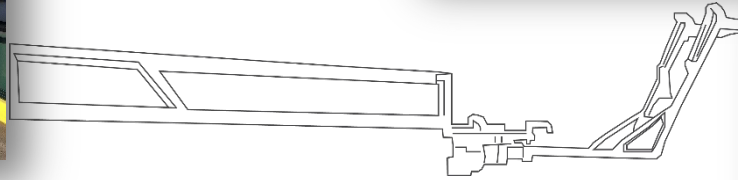


16 Terminal electrifications

Vessel improvements



6 existing
vessel
conversions



*Rapid charging system
(in development)*



16 hybrid electric vessels

Meeting Emission Reduction Regulations

Two scenarios evaluated:

With Shore Charging

CO₂e reductions:

53% by 2030

76% by 2040

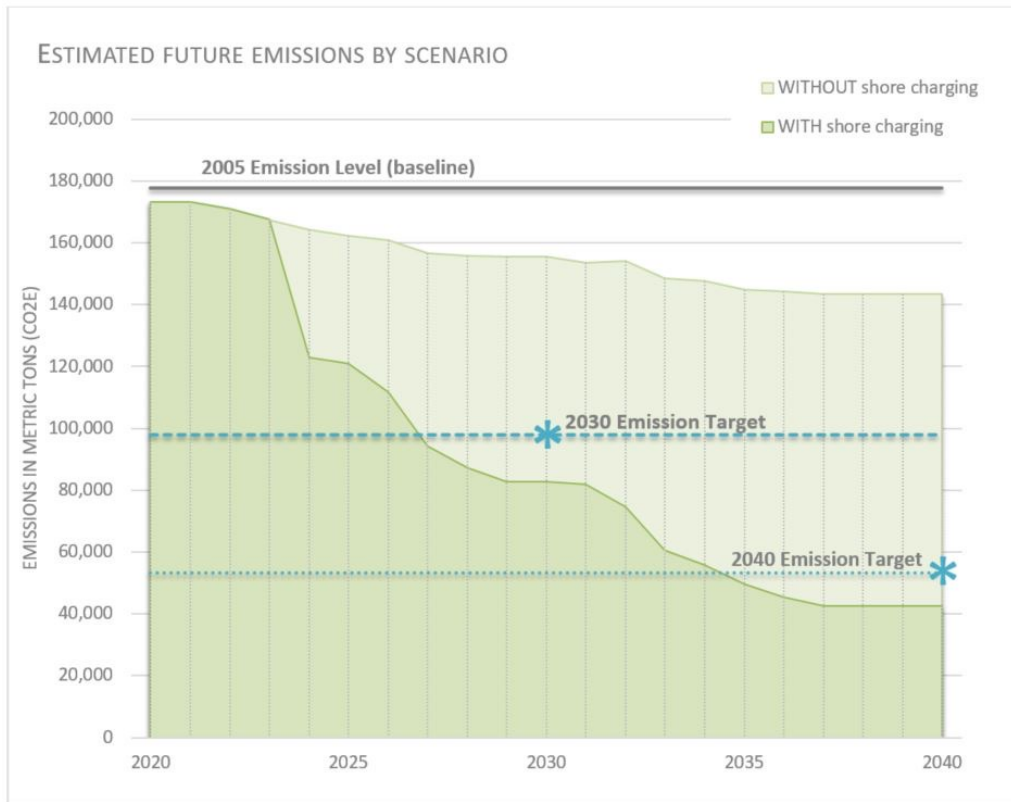
Meets requirements of RCW 70A.45.050.

Without Shore Charging

CO₂e reductions:

20% by 2040

Not compliant with RCW 70A.45.050.



Funding

- With the passage of the 2022 Move Ahead Washington transportation package, the program received \$1.03 billion
- With \$1.33 billion secured to date, the program has funded the following elements:
 - ✓ 5 hybrid electric Olympic Class vessels
 - ✓ Up to 4 vessel conversions
 - ✓ Central Puget Sound terminal electrification



Jumbo Mark II Conversions



Reduce total WSF fuel consumption by 26% (5 million gallons/yr)



Comparable reduction in particulates



Reduced maintenance costs



Lifecycle cost savings of \$60 million for the 3 converted vessels



Hybrid Electric Olympic Class



Flexible vessel design that can operate on most system routes, with or without shore charging



300 million gallons of diesel fuel saved over 60 years



\$55 million lifecycle cost savings for five new vessels



Passenger comfort (quieter operations in most vessel areas)



Upcoming RFP this fall to build five vessels



Terminal Electrification

- 16 terminals, powered by 5 different utilities



Seattle
City Light



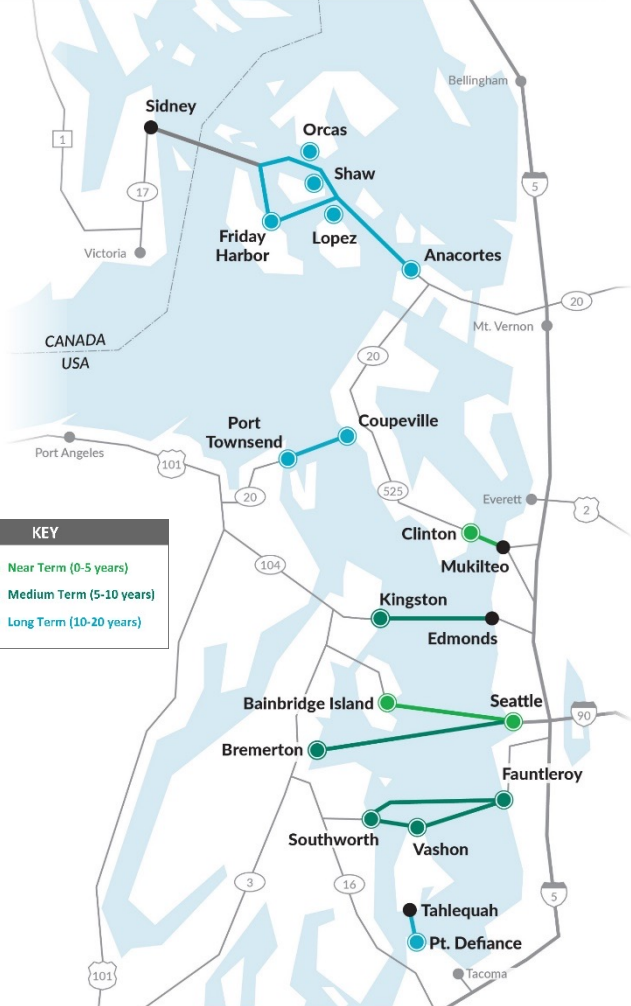
PUGET
SOUND
ENERGY

PUD
Jefferson County
Public Utility District

T
TACOMA POWER
TACOMA PUBLIC UTILITIES



KEY	
	Near Term (0-5 years)
	Medium Term (5-10 years)
	Long Term (10-20 years)



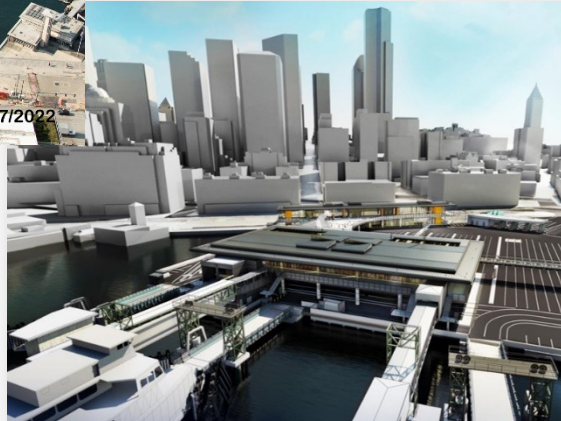
Partnerships



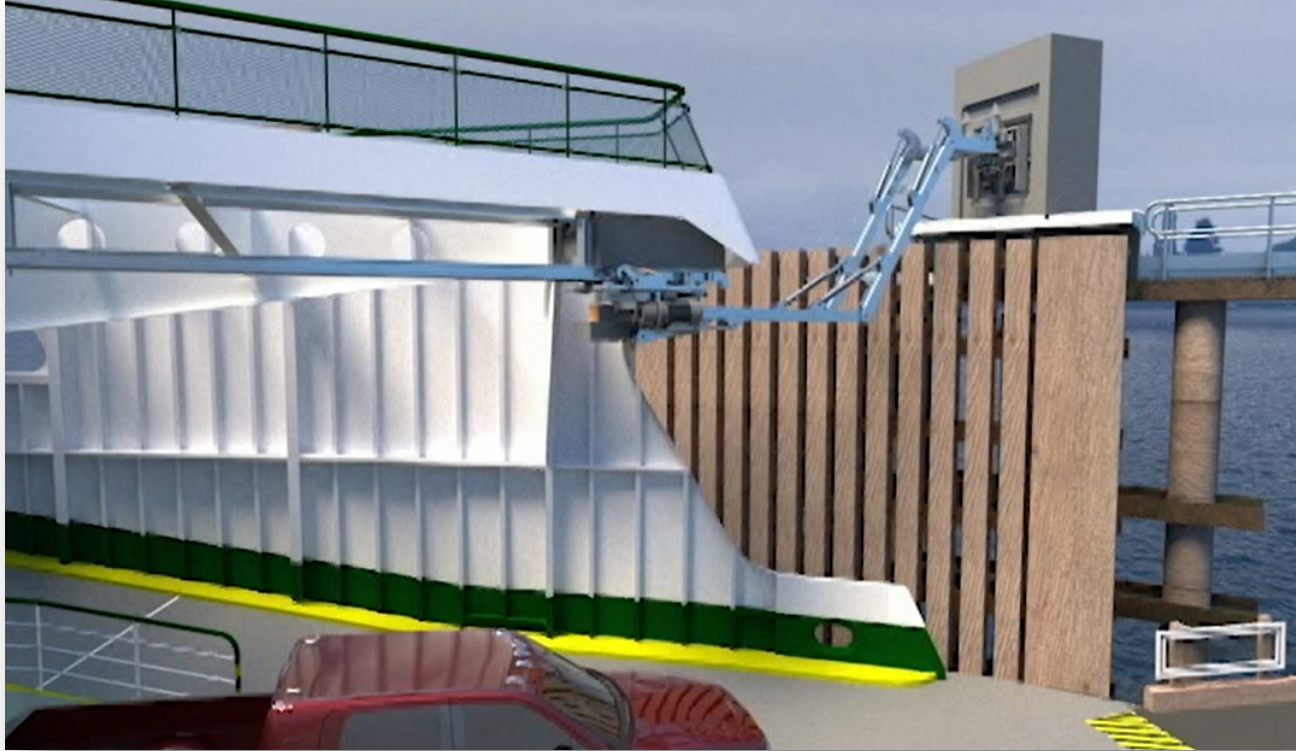
**Seattle
City Light**



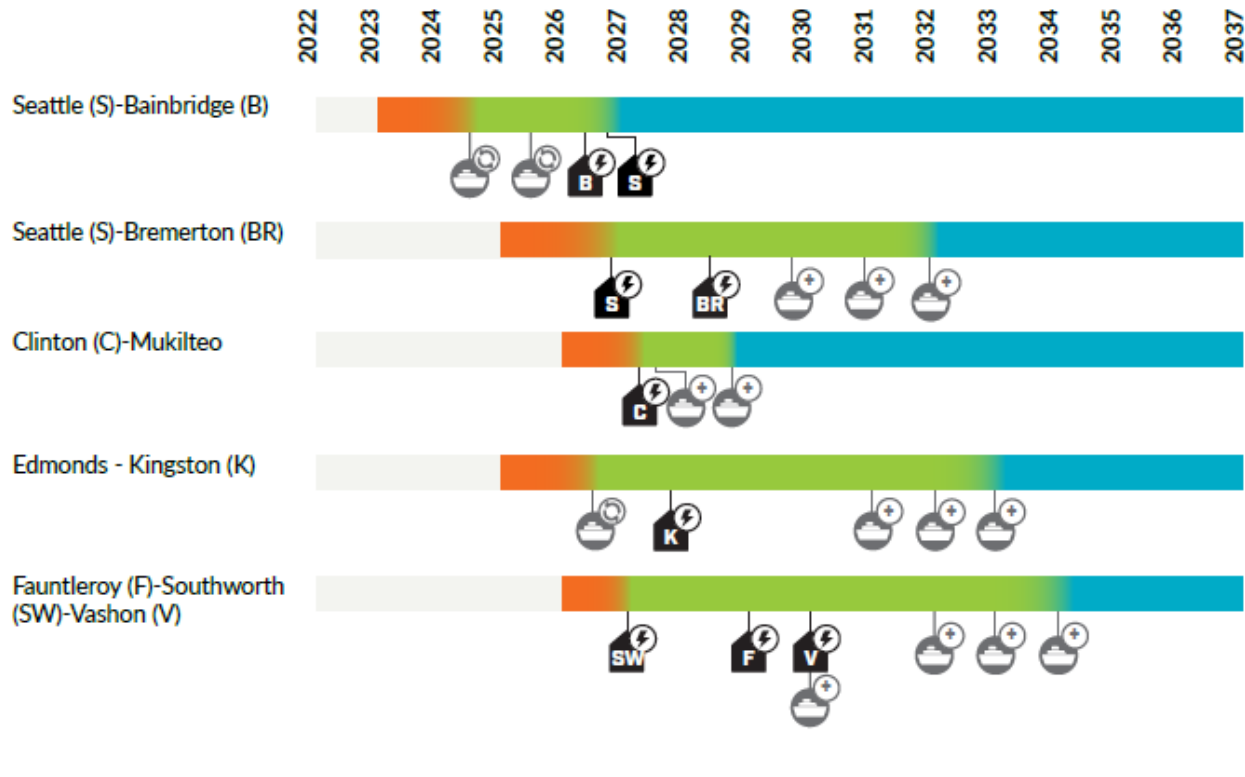
Colman Dock Terminal Construction & Electrification – Seattle



Rapid Charging System



Implementation Schedule*



Key

Construction*

*At least one component of route electrification is underway.

Partial electrification**

**At least one component of route electrification is complete.

Full electrification***

***All components of route electrification are complete.

Route Components



Electrified terminal

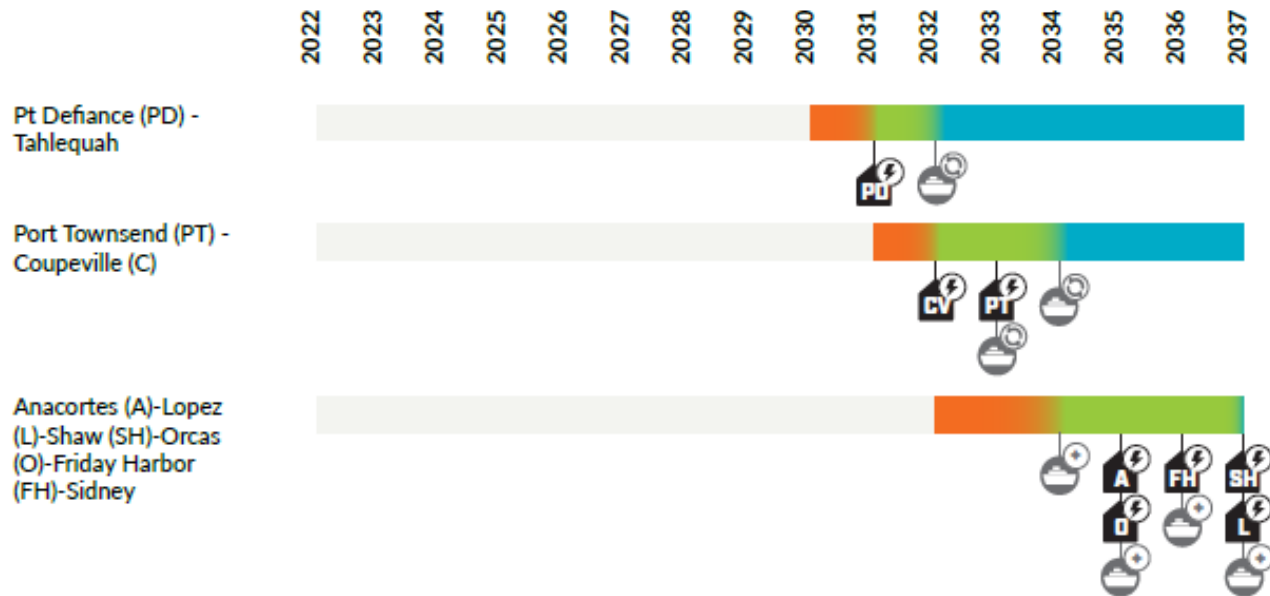


Vessel conversion



New vessel

Implementation Schedule*



Key

Construction*	*At least one component of route electrification is underway.
Partial electrification**	**At least one component of route electrification is complete.
Full electrification***	***All components of route electrification are complete.

Route Components

- Electrified terminal
- Vessel conversion
- New vessel

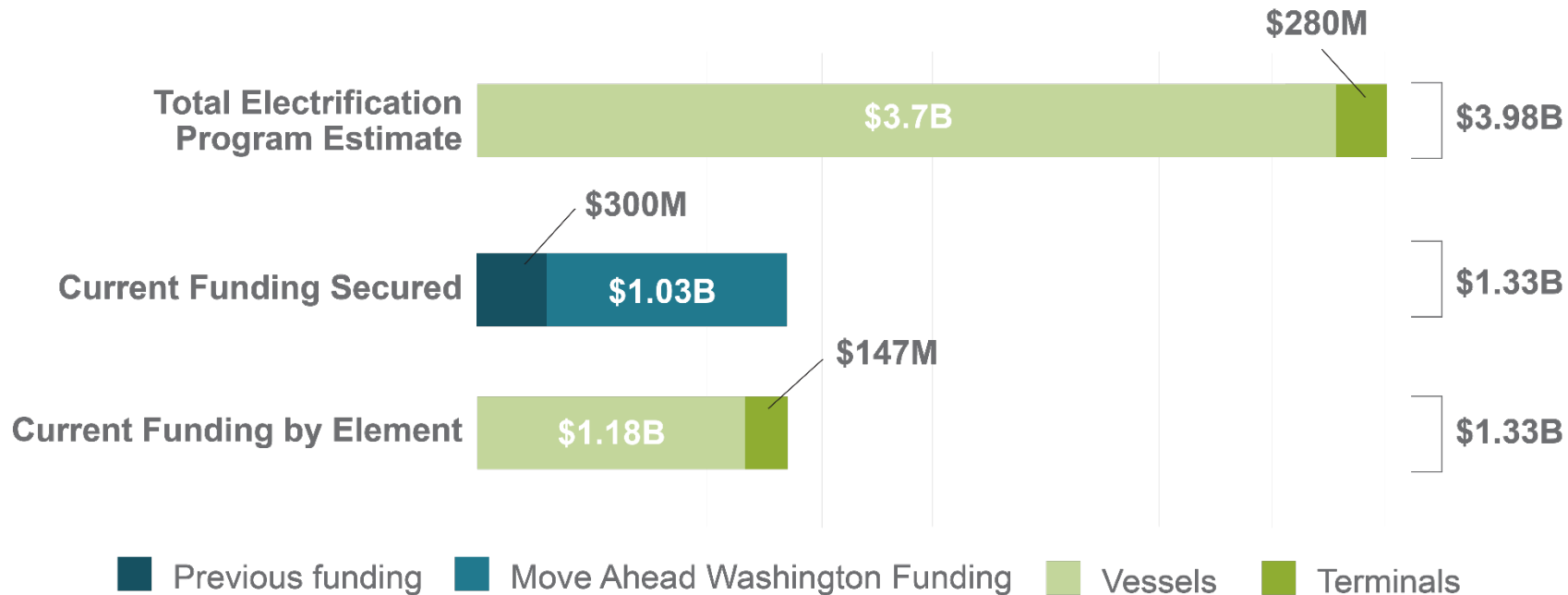
Questions?



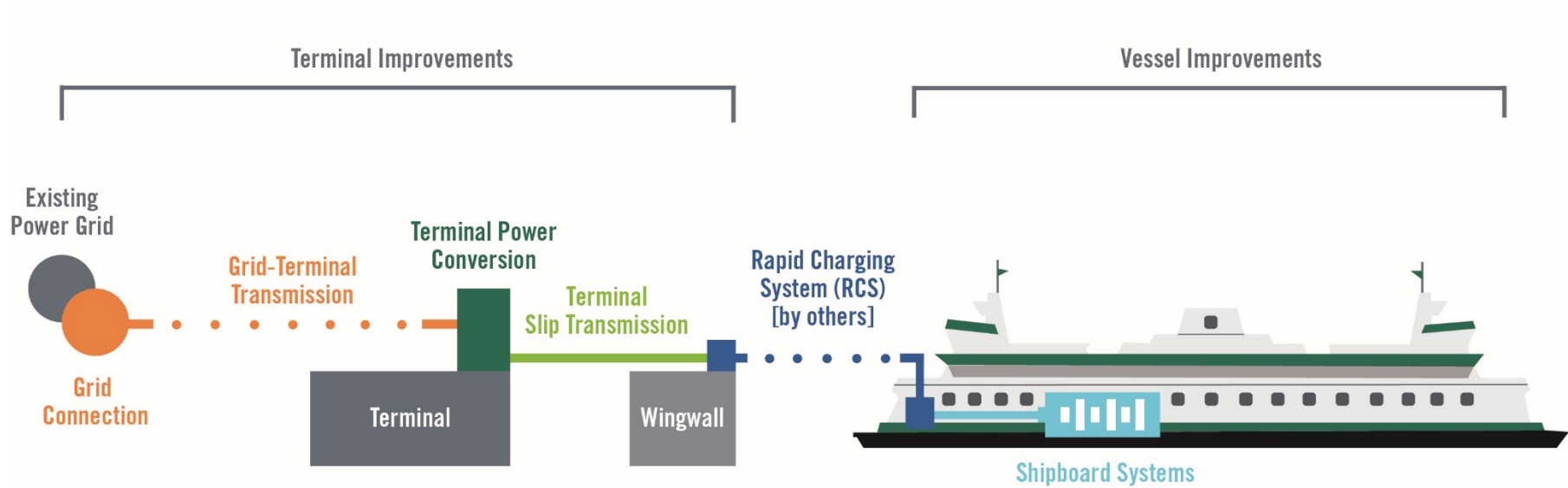
Patty Rubstello
Assistant Secretary
Washington State Ferries
rubstep@wsdot.wa.gov

Back pocket slides

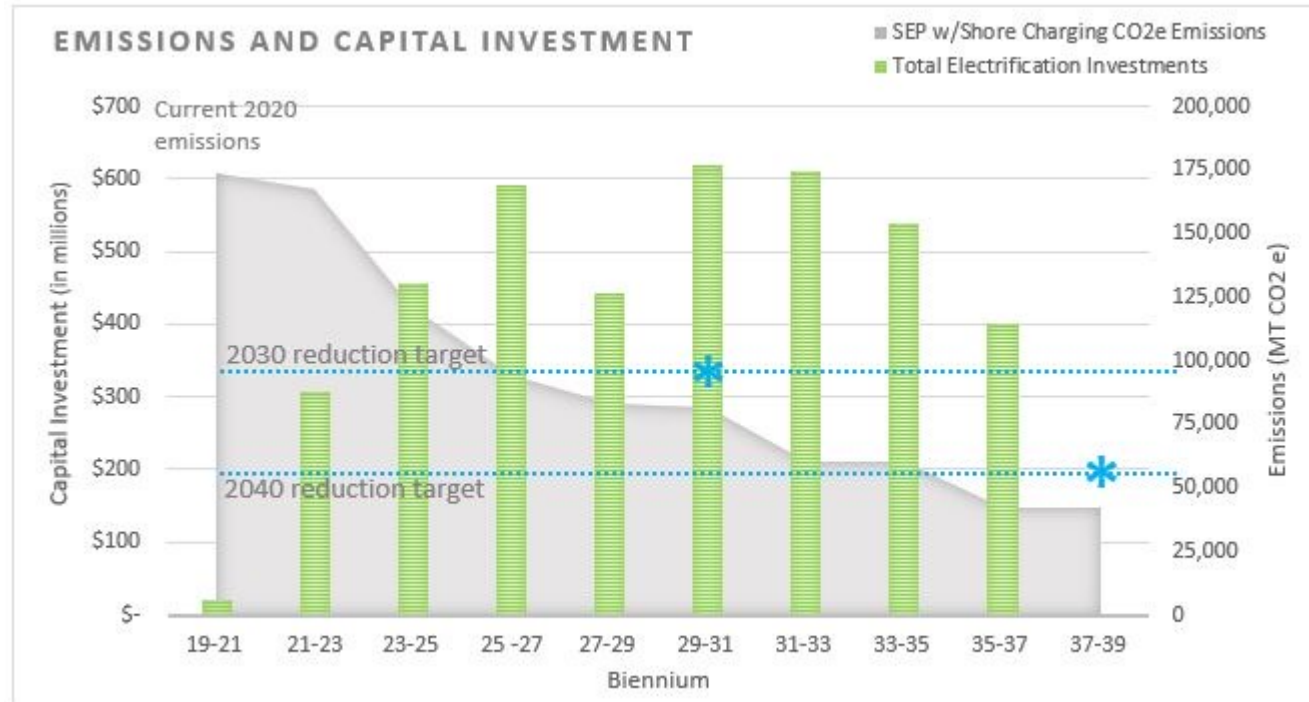
Funding



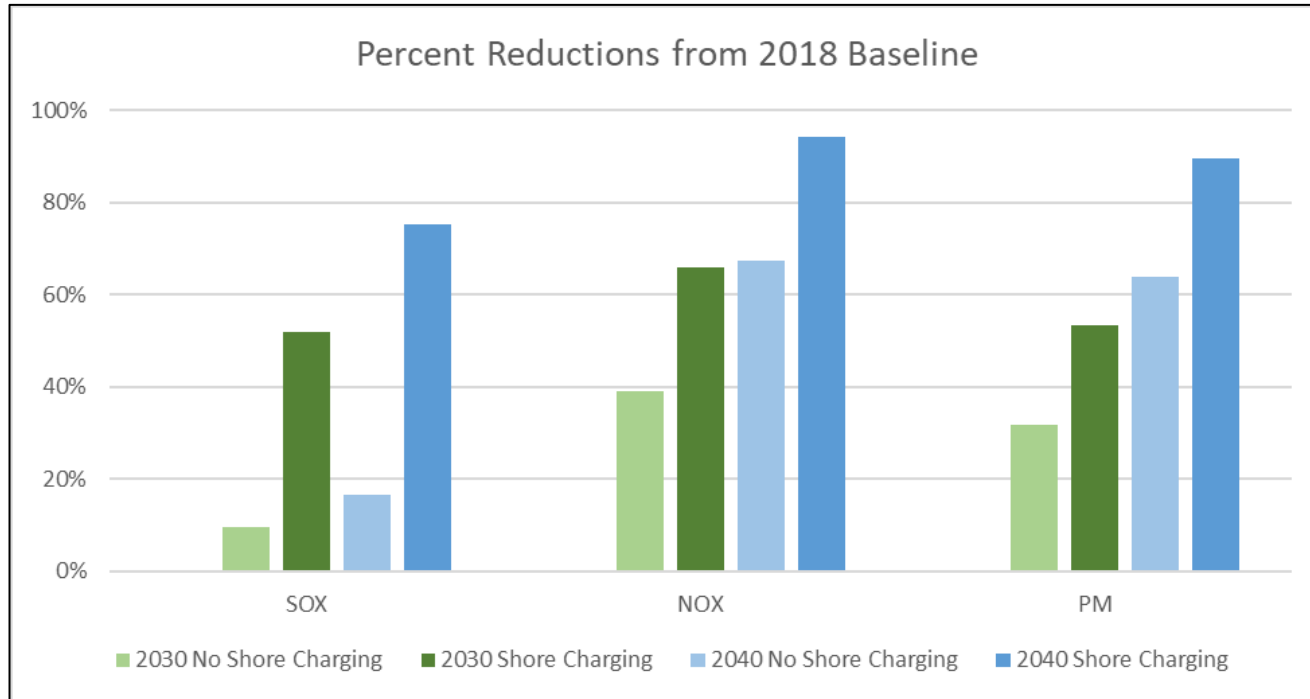
Electrification System Components



Greenhouse Gas Reductions



Improved Air Quality in Local Communities



Planning the Maritime Clean Energy Transition

Port of Seattle

Stephanie Jones Stebbins, Managing Director, Maritime

October 24, 2022

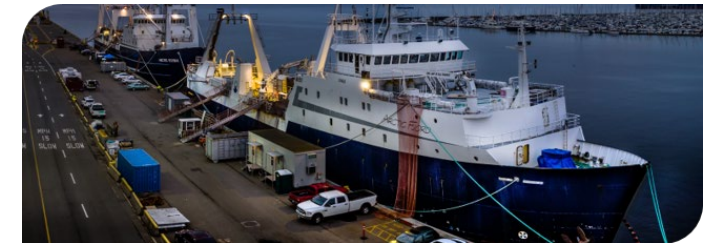


Port of Seattle's Maritime Role



Cruise Seattle

Largest Homeport on the West Coast



Commercial Fishing

Home of the U.S. North Pacific Fishing Fleet



Northwest Seaport Alliance

4th Largest Cargo Gateway in the U.S.

Seattle Waterfront Clean Energy Strategy

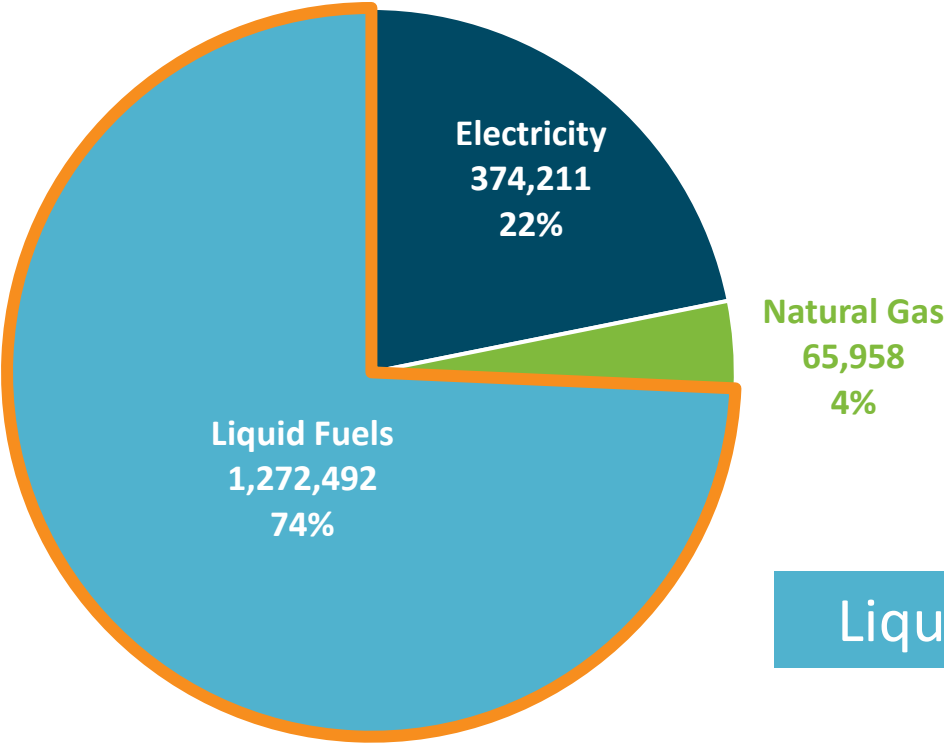
A roadmap of clean energy infrastructure investments to deploy zero emissions fuels and technologies and increase energy resilience

- Facilitate Port and Maritime Industry clean energy transition
- Reduce impacts to near-Port communities
- Increase resilience of critical infrastructure
- Optimize City power grid resources
- Identify financial strategies, business models & policies to support implementation
- Identify industry and port tenant interests and investment priorities. Develop industry partnerships and joint-innovation projects



On-Terminal Energy Usage by Fuel Type (2019)

Total (MMBtu) and % of Energy Usage



End-Use Load Categories	
• Buildings	• Cruise Vessels
• Cargo Handling Equipment (CHE)	• Cargo Vessels
• MD/HD Trucks	• Harbor Vessels
• Fleet Vehicles	• Other (Rail)
• Ground Transport	• Other (Refrigeration Plugs)
• Public EV Charging	

Liquid fuels dominate the Port’s onsite energy use

Planning for Clean Fuels and Technology

Next Steps:

- Solutions development
 - » traditional and “non-wires”
 - Overarching strategy road map
 - » Capital investments
 - » Supportive policies
 - » Joint implementation framework
- ➔ Utility collaboration is vital
- ➔ Industry engagement is critical to characterize needs, identify opportunities and develop solutions



Exploring Maritime Hydrogen Applications

Potential applications:

- Heavy duty vehicles, vessels and equipment
- Energy storage and grid support
- Maritime fuels

Hydrogen Studies with National Labs

- Pacific Northwest National Lab, Sandia National Lab, Seattle City Light
- Hydrogen Node and Heavy-Duty Vehicle Fueling
- Large Volume Hydrogen Storage Risk Assessment

Pacific NW Hydrogen Hub

- Maritime “hard to decarbonize” end uses



EXPLORING A GREEN CORRIDOR

FIRST MOVER COMMITMENT

Leading the Zero Greenhouse Gas Emission Transition

- Home Port
- Port of Call



Alaska

Haines
Juneau
Skagway
Sitka

Canada

Victoria

VANCOUVER

SEATTLE

USA



Vancouver Fraser
Port Authority



GLOBAL
MARITIME
FORUM



Thank you!

