



WASHINGTON STATE FERRIES

Electrification Program

SE Alaska Conference
Matt Von Ruden, Program Administrator
Thursday, Feb. 2, 2023



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



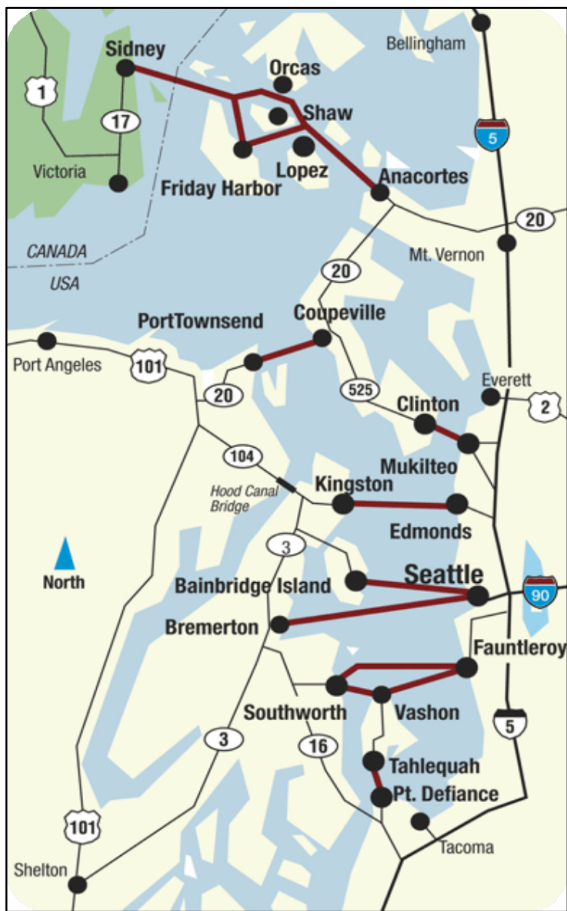
10.5 million vehicles in 2019



450 sailings per day



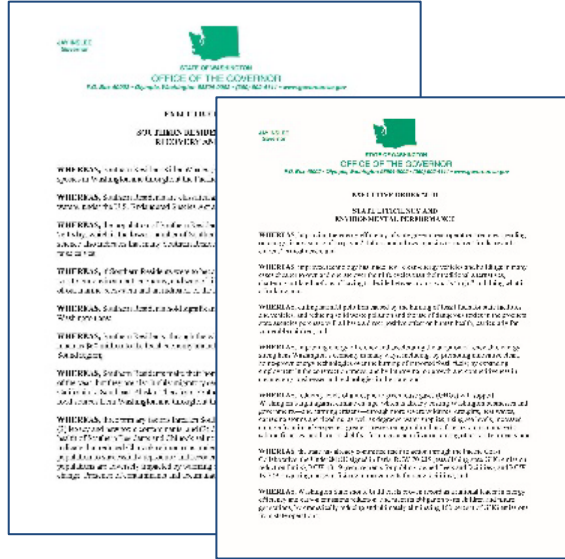
1,800 employees



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

Meeting Emission Reduction Regulations

Two scenarios evaluated:

With Shore Charging

CO₂e reductions:

53% by 2030

76% by 2040

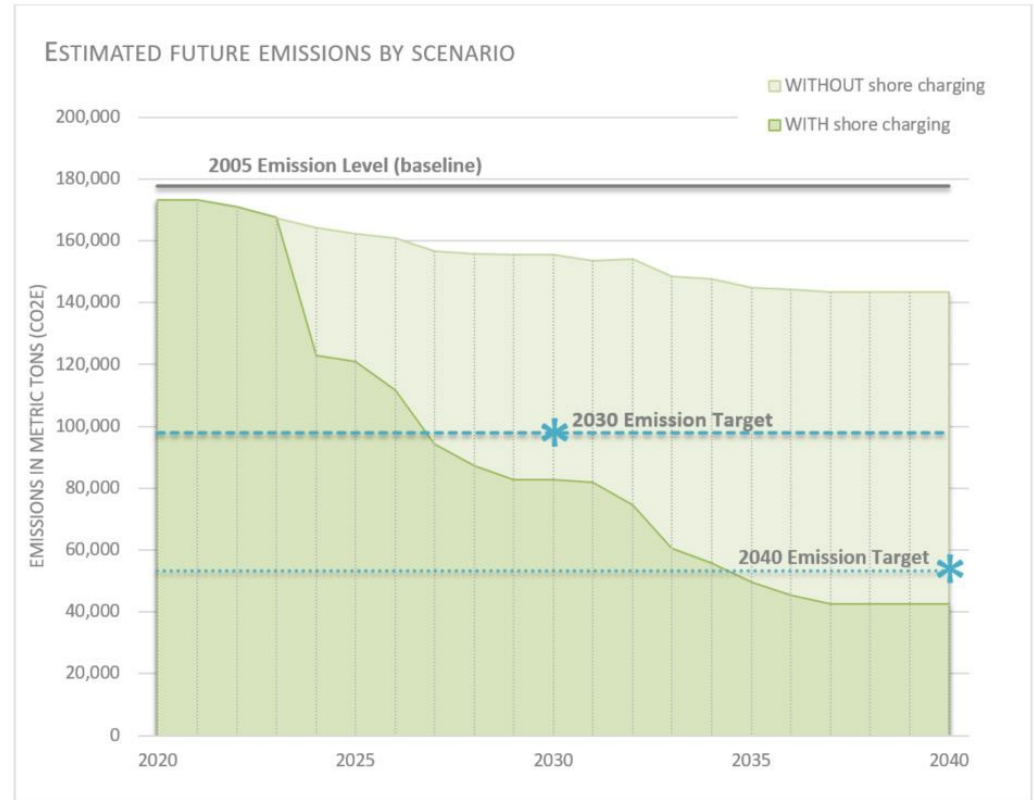
Meets requirements of RCW 70A.45.050.

Without Shore Charging

CO₂e reductions:

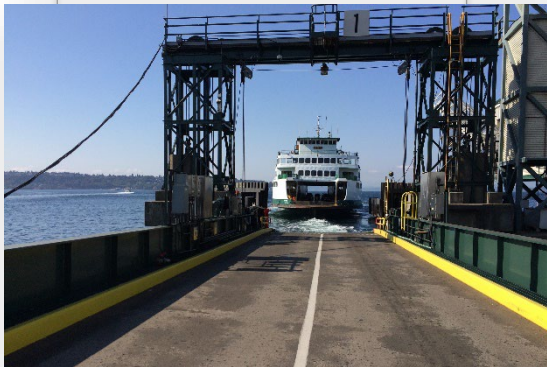
20% by 2040

Not compliant with RCW 70A.45.050.



Program Elements

Terminal improvements

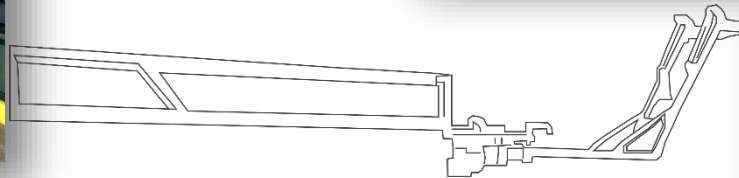


16 Terminal electrifications

Vessel improvements



6 existing vessel conversions

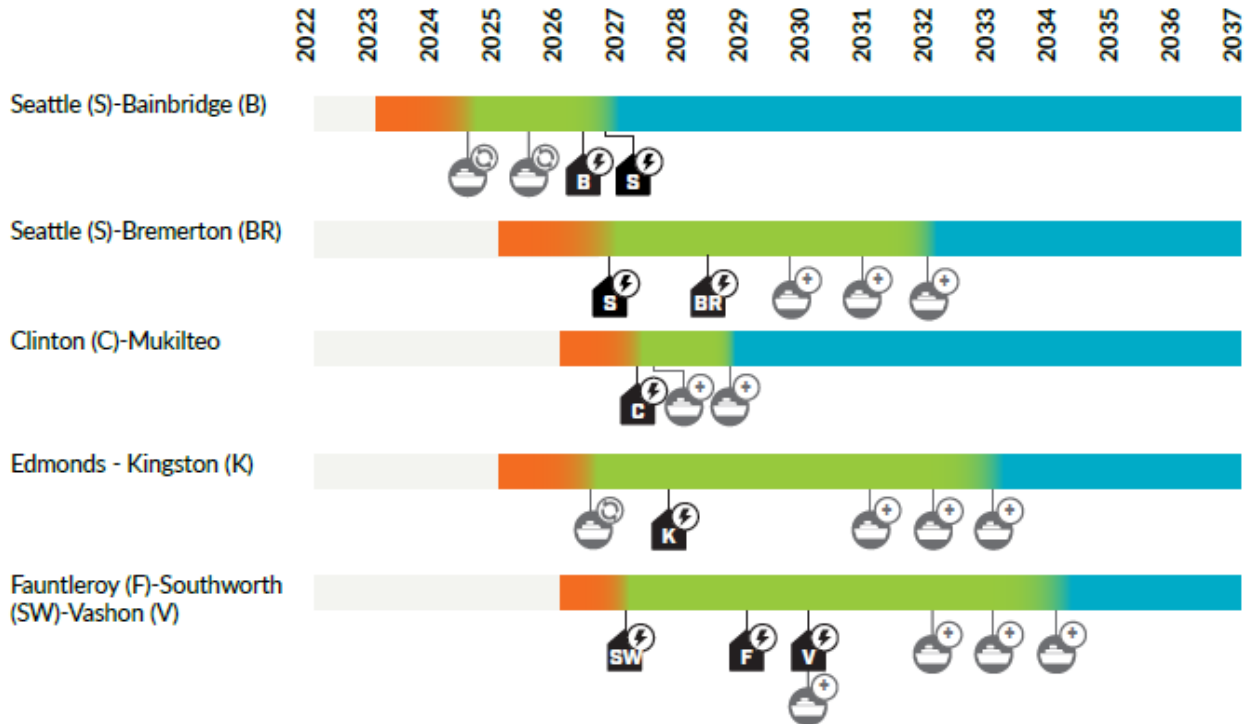


Rapid charging system
(in development)



16 hybrid electric vessels

Implementation Schedule*



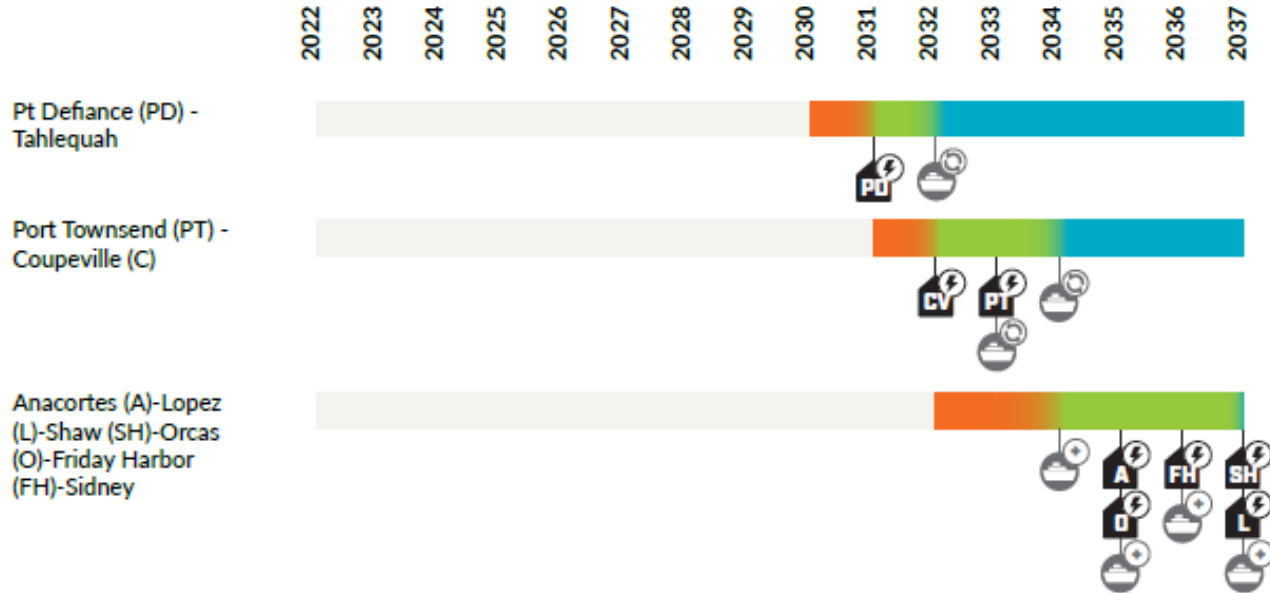
Key

- 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

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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 spring 2023 to build five vessels



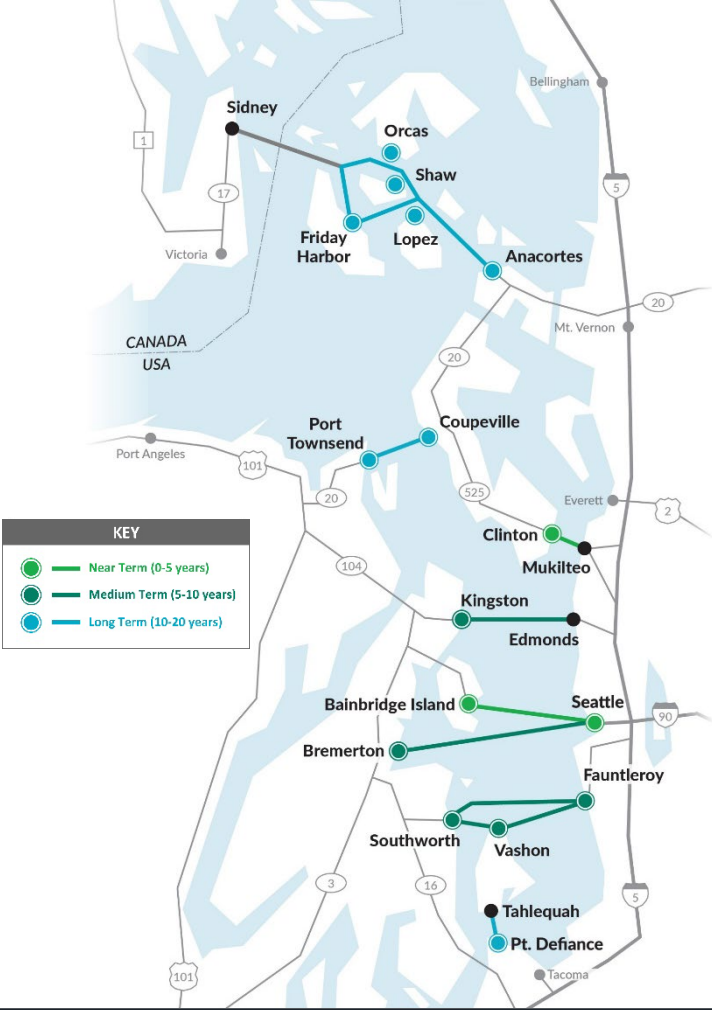
Hybrid Electric Olympic Class

- Request for Proposal (RFP) scheduled release, spring 2023
- Design-build
- First vessel to be delivered 2027
- Hybrid electric
- Rapid charging system

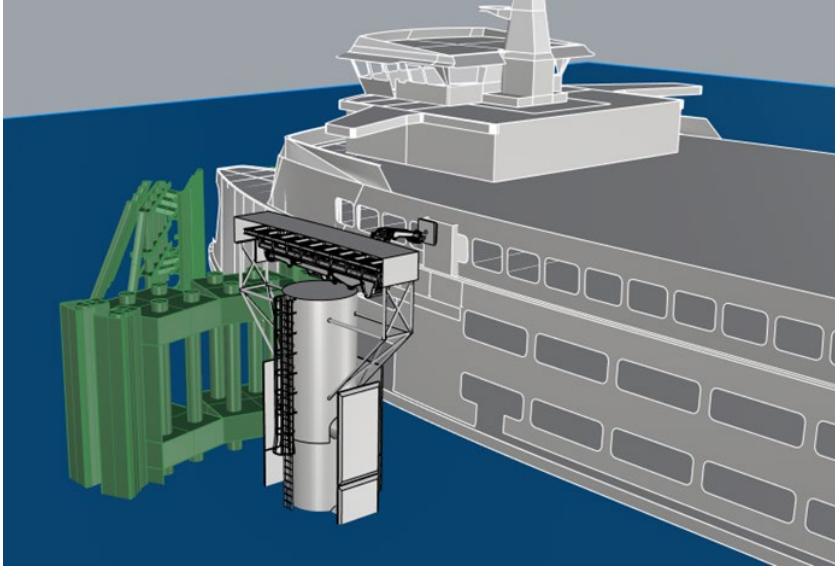


Terminal Electrification

- 16 terminals, powered by 5 different utilities



Shore-based Rapid Charging System



Advantages

- Less vessel weight
- Charging equipment away from passengers
- Full vehicle capacity retained
- Retain integration efforts from prior concept
- Easier to integrate in future vessel designs
- Improves vessel operations/turn around time
- Established column design (Edmonds passenger overhead loading)

GEC Contract

- Hill International, Inc. awarded General Engineering Contract
- GEC will supplement WSF staff
- Designed to work as one team
- Key elements of work include:
 - Program management
 - Program Controls
 - Design Engineering: Utilities, Mechanical, Marine, Electrical
 - Communications
 - Inclusion

WSDOT

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
WSF System Electrification Program
General Engineering Consultant
SEPTEMBER 21, 2022 | PACKET A

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- CRITERIA 5: Project Delivery Approach

Submitted by: Hill International, Inc.

HILL
International

Logos of partner firms: HNTB, MNTY MACDONALD, PRR, Sebastianelli, P2S ENG, Elliott Bay Design Group, JTS, BABINEC CONSULTING, ANCHOR GEA LLC, HDR, CORNERSTREET, FISHERY & WILSON, JENSEN HUGHES, AT, SCE, Western Carolina, GHD.

Questions?



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