

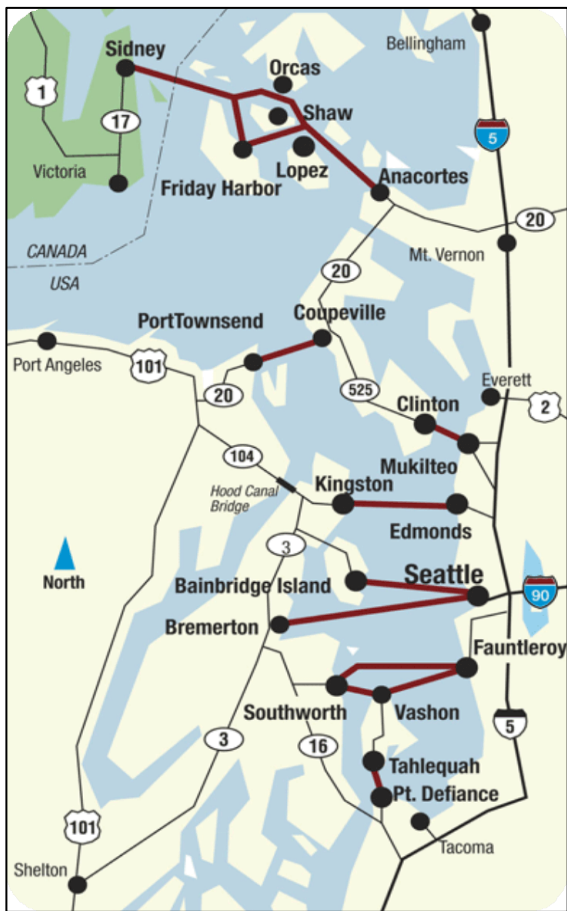


WASHINGTON STATE FERRIES

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

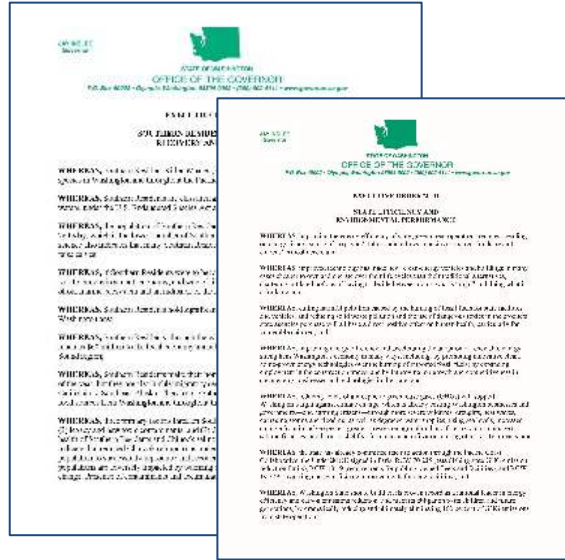


1,800 employees

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:

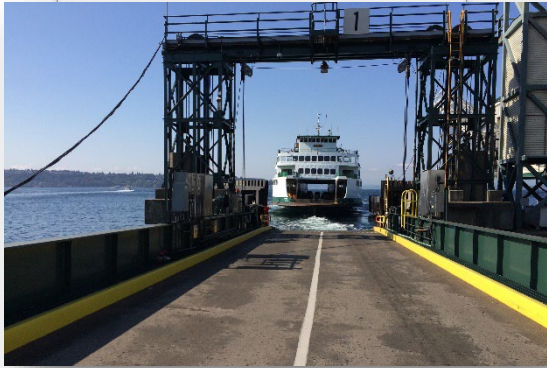
20% by 2040

Not compliant with RCW 70A.45.050.



Program Elements

Terminal improvements

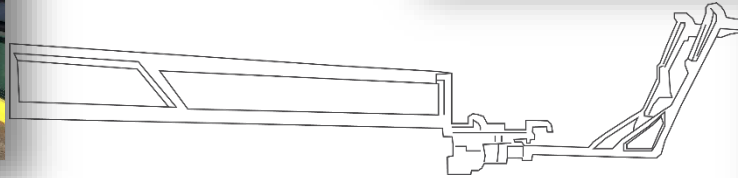


16 Terminal electrifications

Vessel improvements



6 existing
vessel
conversions

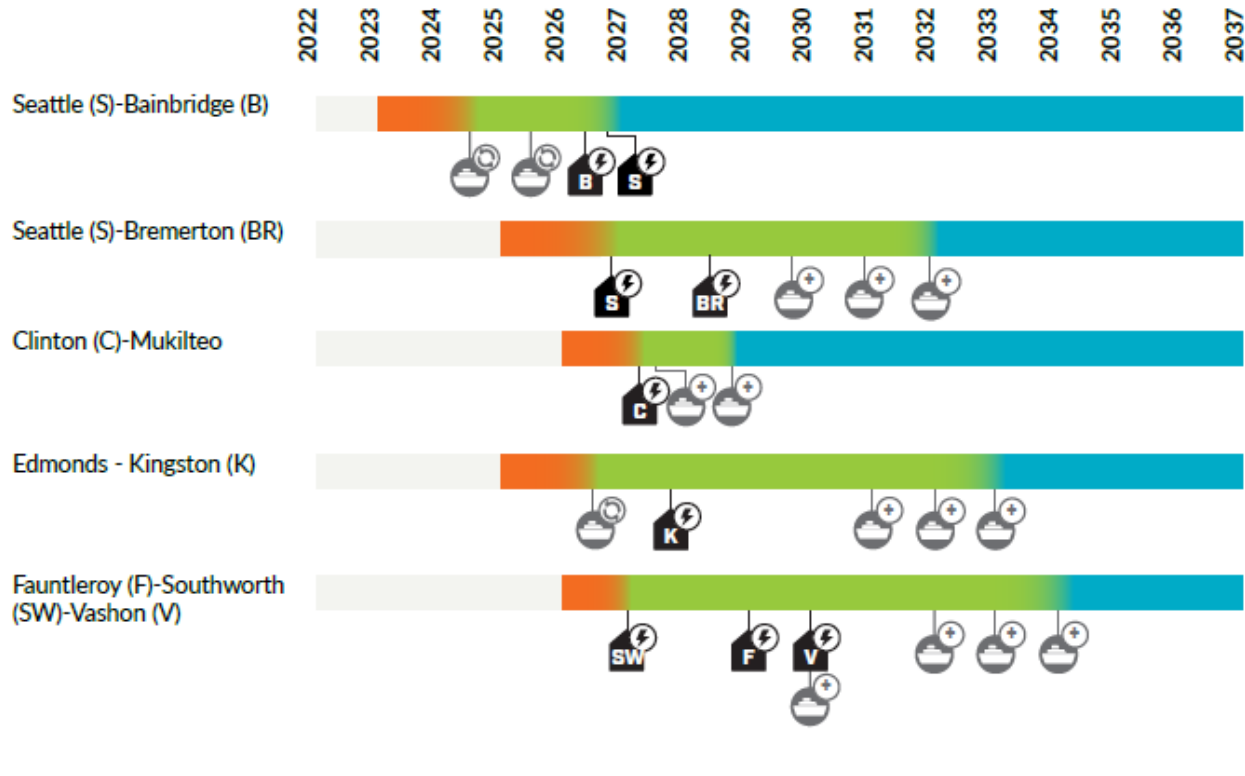


*Rapid charging system
(in development)*



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

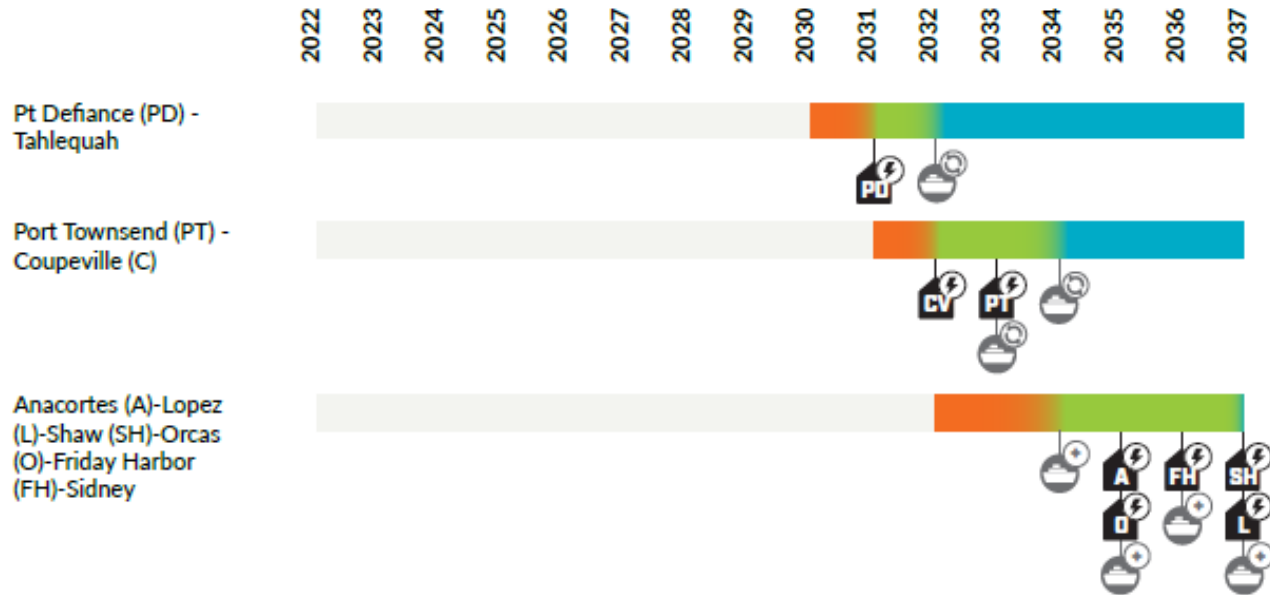


Vessel conversion



New vessel

Implementation Schedule*



Jumbo Mark II Conversions



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



Comparable reduction in particulates



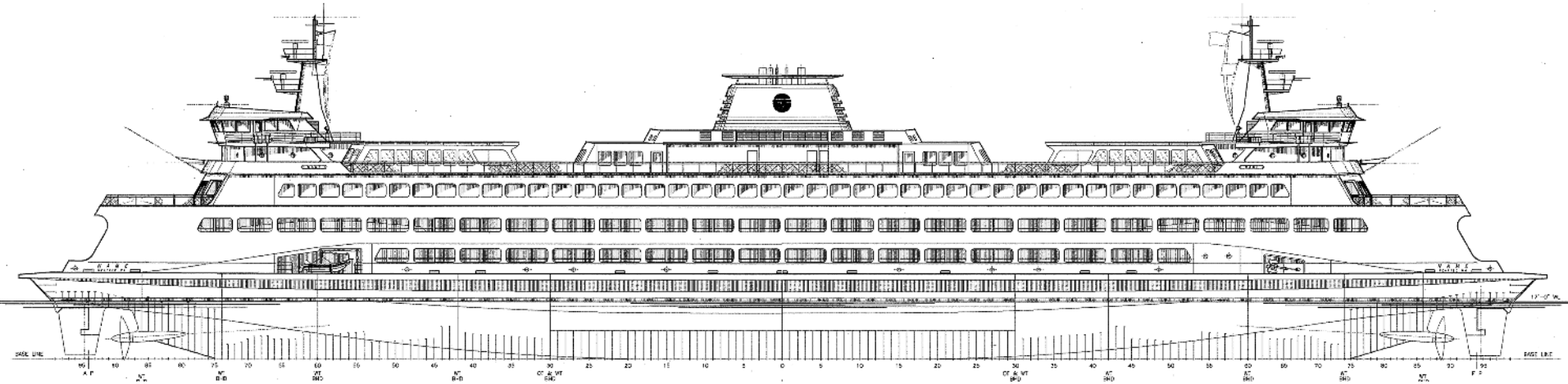
Reduced maintenance costs



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



Jumbo Mark II Conversions



- Invitation for Bid (3 vessel conversion contract), spring 2023
- Dockside conversion (propulsion control system and hybrid electric)
- First vessel conversion begins fall 2023

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



Seattle
City Light



PUGET
SOUND
ENERGY

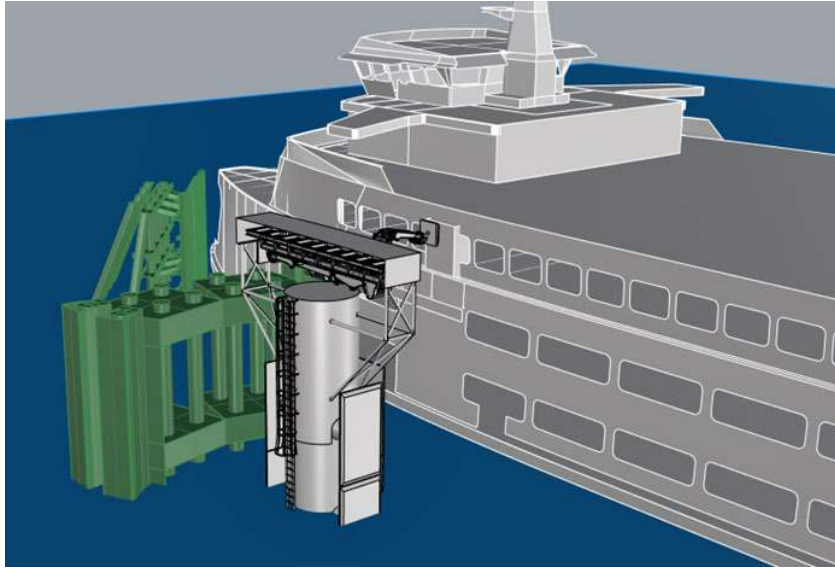
PUD
Jefferson County
Public Utility District

T
TACOMA POWER
TACOMA PUBLIC UTILITIES



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

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 3: Core Team Member Qualifications
- CRITERIA 4: Firm's Project Management System
- CRITERIA 5: Project Delivery Approach

Submitted by: Hill International, Inc.

HILL
International

Logos of various partner firms: WSP, Mott MacDonald, PRR, Schottel, P2S, Elliott Bay Design Group, JTS, BABINEC, ANCHOR, H&R, CORNERSTREET, SHANNON & WILSON, JENSEN HUGHES, AT, SCE, Western Carolina, GHD.

Questions?



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