

# Guemes Island Ferry Replacement Project Commissioner's Project Update

Tuesday, July 19, 2022



Glosten



Skagit County Public Works  
[www.skagitcounty.net](http://www.skagitcounty.net)

# Agenda

- Vessel Design Update 10 min
- Shore/Terminal Update 10 min
- USCG submittal/approval 5 min
- Recap of Design Review 5 min
- Project Schedule 10 min
- Cost Estimates and Funding 15 min
- Questions 45 min (throughout)



# Vessel Design Update

## Recent Milestones

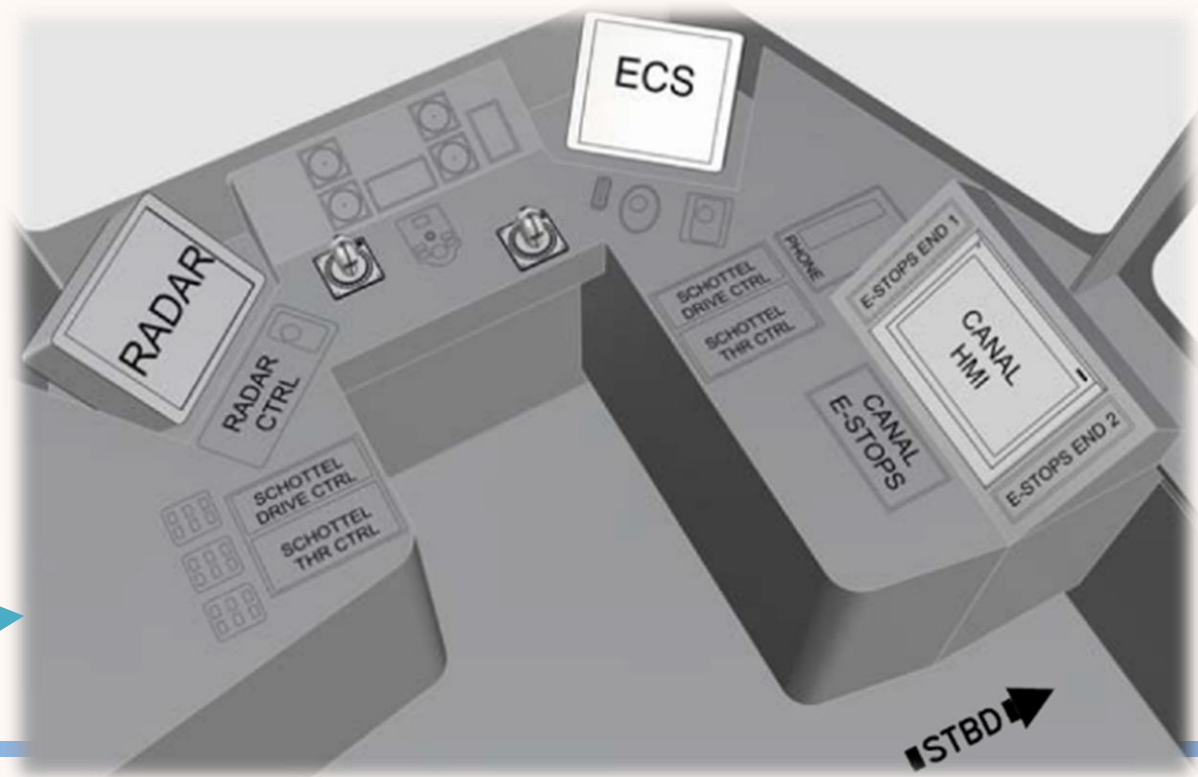
- Mar 2021: Preliminary Design Approved
- May 2021: HB1502 signed into law
- Jul 2021: Electrical Systems Integrator (ESI) RFP
- Nov 2021: Canal Marine Selected as ESI
- May 2022: Contract Design Submitted
- June 2022: Design Review Completed





Glosten





Glosten





**Glostent**



# Vessel Design Update

Collaboration with ESI

- Scope Adjustments:  
Cost savings and Risk Management
- Design improvements:  
600VAC bus saves cost and weight
- Integration:  
Mechanical and control systems fully specified
- Optimization:  
Batteries sized for low lifecycle cost

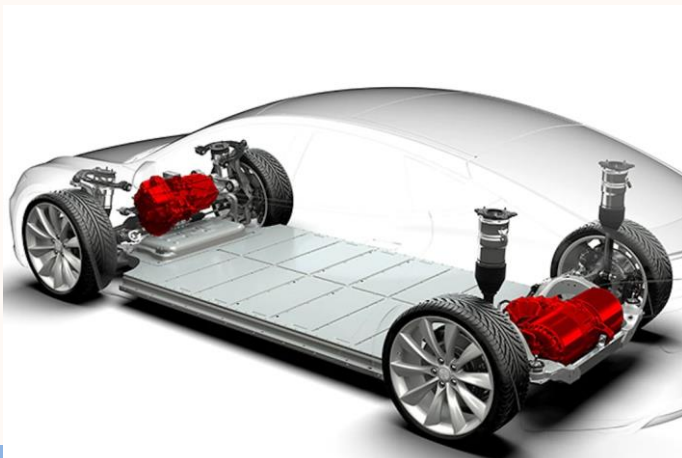
Glosten





# Ferry vs. Car Scale Batteries

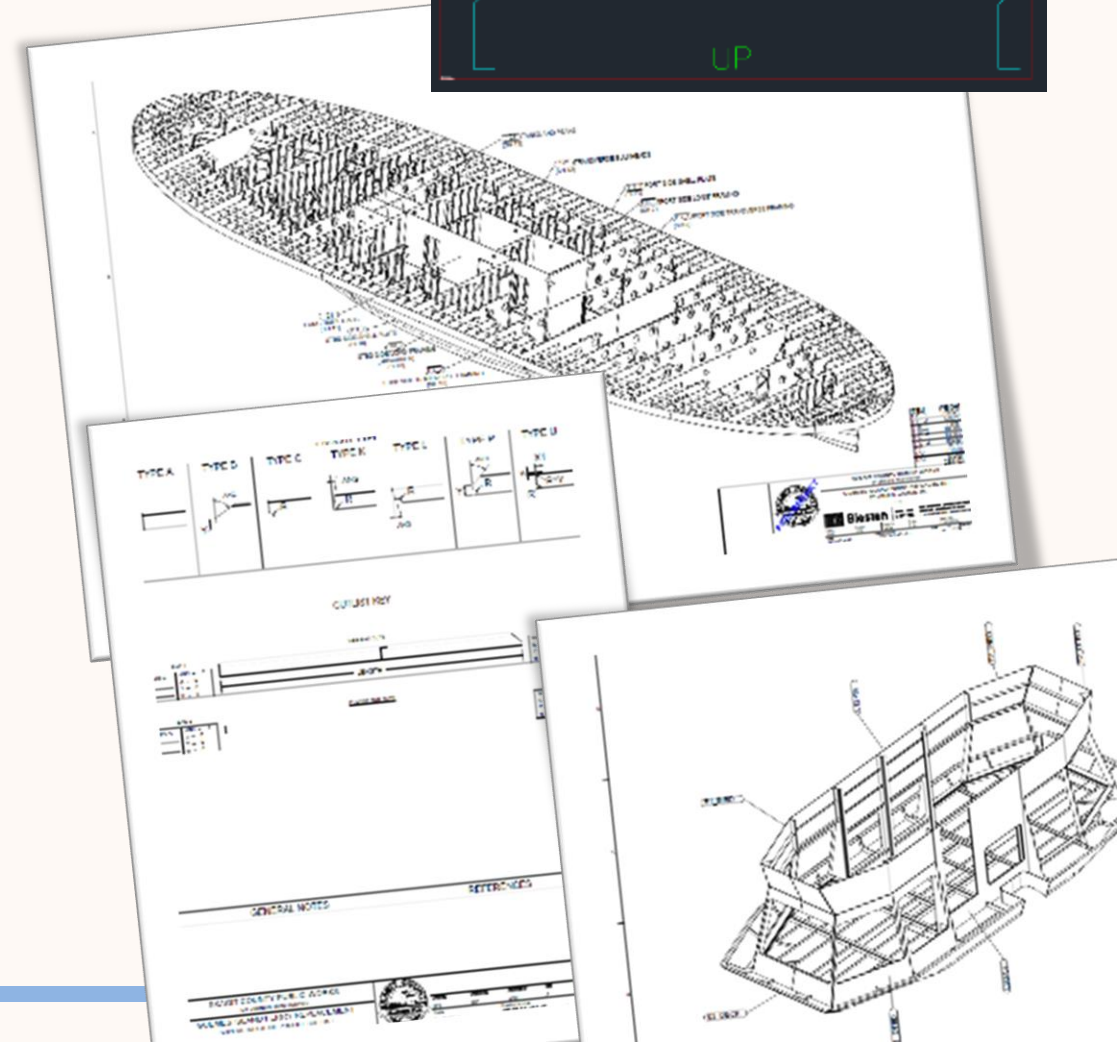
	Electric Car	Guemes Electric Ferry
Cruising Power	~10kw (70 mph)	400-500kw (10 knots)
Battery Capacity	60-100kwh	700kwh
Charging Rate	10kw ("Level 2" charger) 150-250kw (Tesla supercharger)	1700kw
Charge/Discharge Cycles (per Year)	~50 (using full range) ~350 (smaller daily charges)	8400
Battery Lifetime	20+ years	10 years
Weight	3800lbs (entire Tesla Model 3)	16,000lbs (battery system alone)



# Vessel Design Update

## Structural Production Design

- Construction often starts with 3-4 months of detail design
- Elected to do production-level structural design in advance
- Allows rapid transition from contract to construction
- Complete package of steel and aluminum parts ready to send to suppliers



Glosten



# Shore Project Update

## Recent Milestones

- July 2021: Eelgrass survey
- August 2021: JARPA submitted
- December 2021: NMFS consultation requested by ACOE
- March 2022: 60% terminal design submitted by PND
- April 2022: Change in environmental consultant
- May 2022: PSE New Service Application
- July 2022: NMFS programmatic opinion



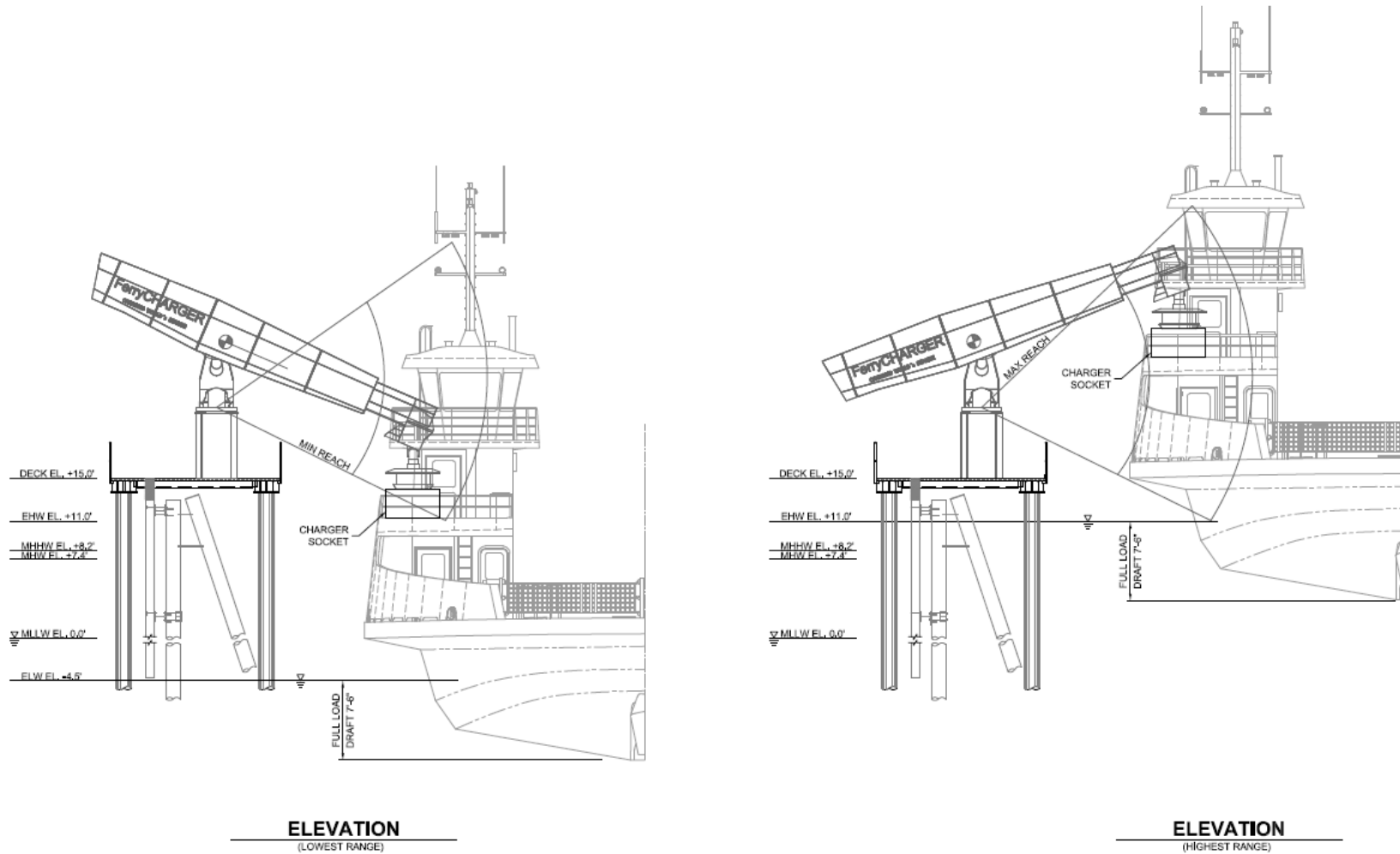
# Shore Project Update

## Current Design Activities

- PND: effectively at 90% complete
- Stemmann Technik: earthquake analysis



# Charger Range of Motion





Glosten



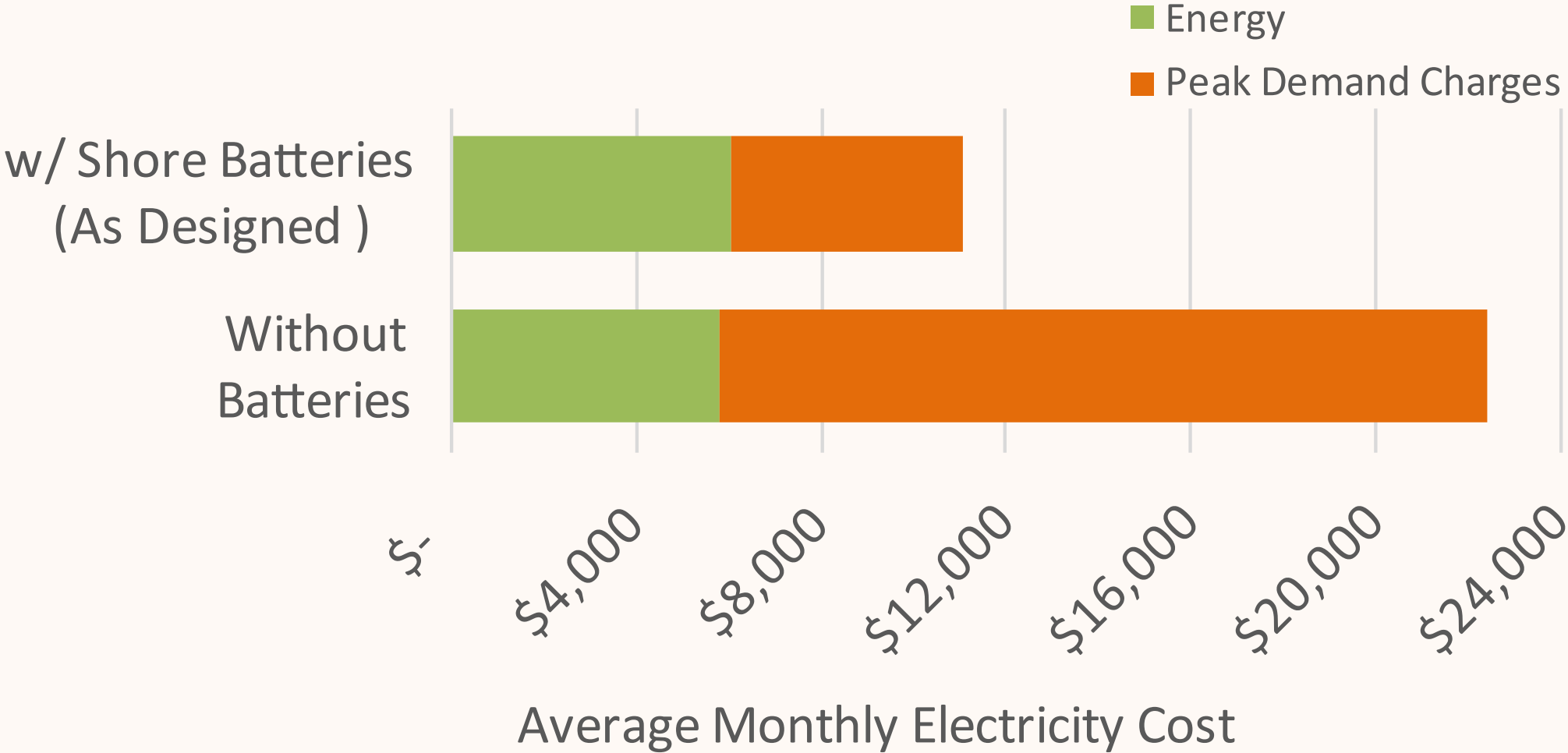
# Shore Project Update

## Current Design Activities

- PND: effectively at 90% complete
- Stemmann Technik: earthquake analysis
- Canal: working shore battery UL certification, fire codes



# Cost of Energy





# Shore Project Update

## Current Design Activities

- PND: effectively at 90% complete
- Stemmann Technik: earthquake analysis
- Canal: working shore battery UL certification, fire codes
- PSE: reviewing project to identify required upgrades
- Widener: Revising JARPA
  - Latest design update
  - Mitigation plan
  - Nearshore calculator



# USCG Submittals and Approvals

- Multiple past meetings with local marine inspector (OCMI)
- Marine Safety Center (MSC) approvals required to build
- SY submits once on contract – MSC won't approve before
- We will submit for preliminary review/comment
- Opportunity to address any issues early



# Design Review Process

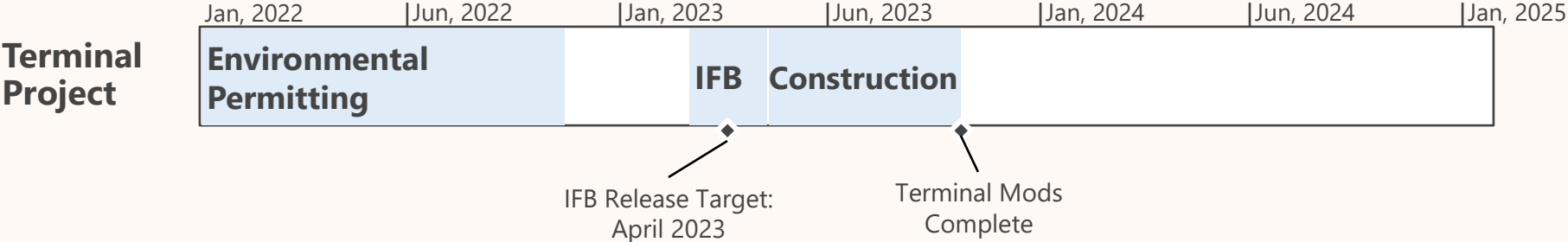
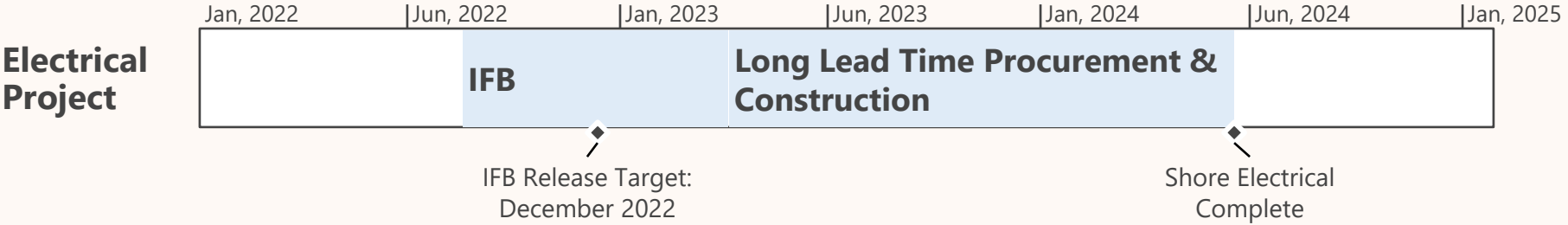
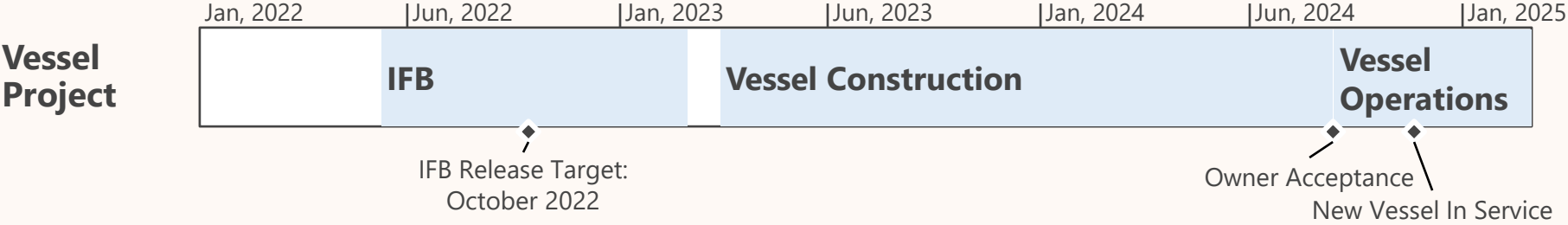
- Contract deliverables submitted to Ferry Division
- Staff and contractor document review and discussion
- Two crew review sessions: captains and deckhands
  - Tour of 3d model
  - Overview of systems and operations
- Comments submitted for clarification or modification
- Revised deliverables to be finished by end of July



Glosten



# Project Schedule



# Funding

Ferry Replacement Program	Cost Estimate	Funded	Funding Source
Design & Permitting	\$2,923,000	\$2,923,000	<ul style="list-style-type: none"> <li>• Skagit County Road Fund</li> <li>• County Ferry Capital Improvement Program (CFCIP) Grant</li> </ul>
Vessel Construction	\$18,993,000	\$18,993,000	<ul style="list-style-type: none"> <li>• County Ferry Capital Improvement Program (CFCIP) Grant</li> <li>• Washington State Legislature/WSDOT - Move Ahead WA</li> </ul>
Shore Side Electrical Systems Construction	\$5,847,000	\$5,847,000	<ul style="list-style-type: none"> <li>• Washington State Capital Construction Budget Appropriation</li> <li>• WA Dept. of Commerce Clean Energy Program</li> <li>• WA Dept. of Commerce Electrification of Transportation Systems</li> <li>• County Ferry Capital Improvement Program (CFCIP) Grant</li> </ul>
Terminal Improvements Construction	\$2,500,000	\$2,500,000	<ul style="list-style-type: none"> <li>• FTA Transportation Improvement Grant</li> </ul>
Ferry Replacement Program Total	\$30,263,000	\$30,263,000	



**Glosten**





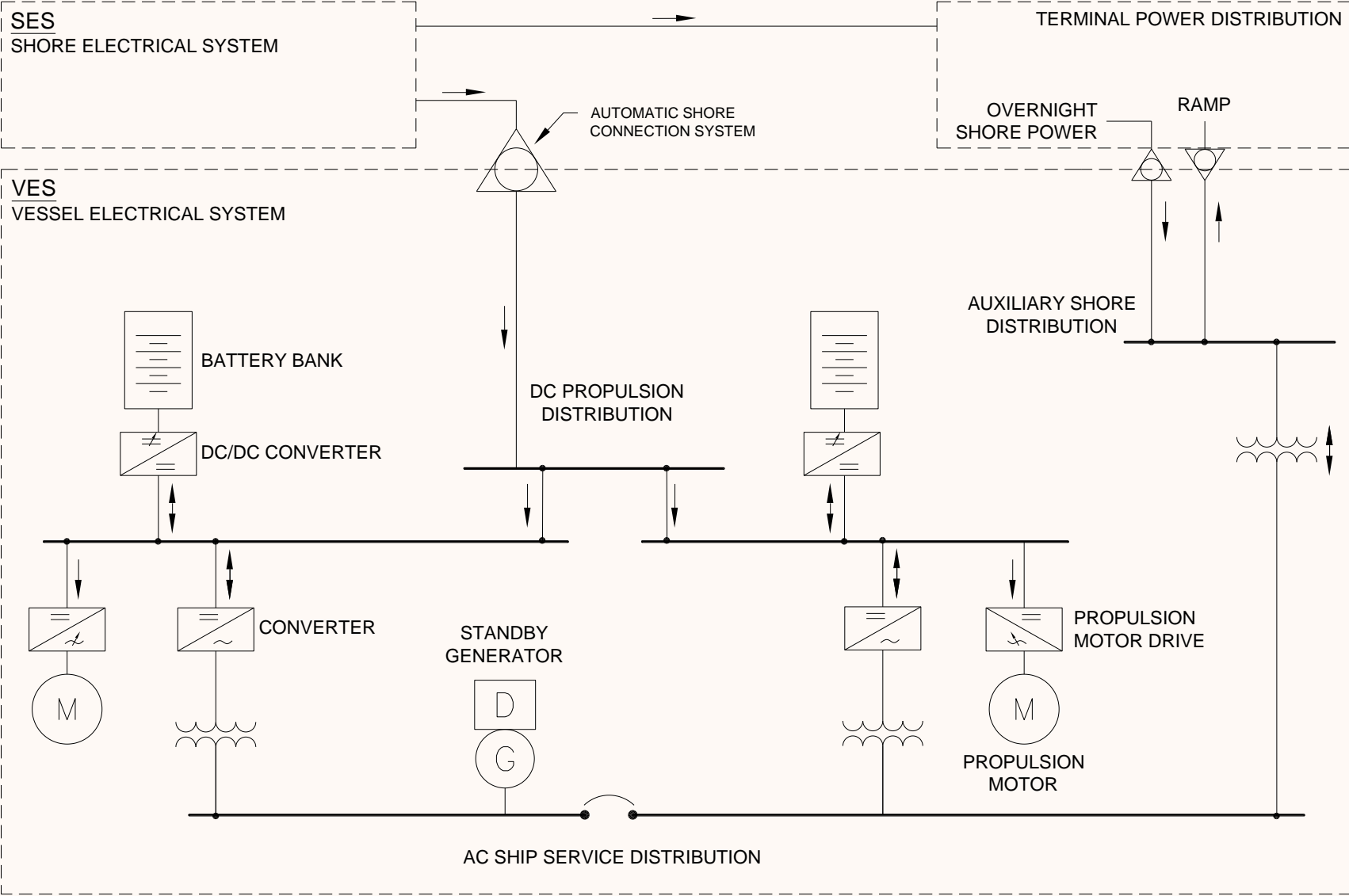
# Backup



Glosten

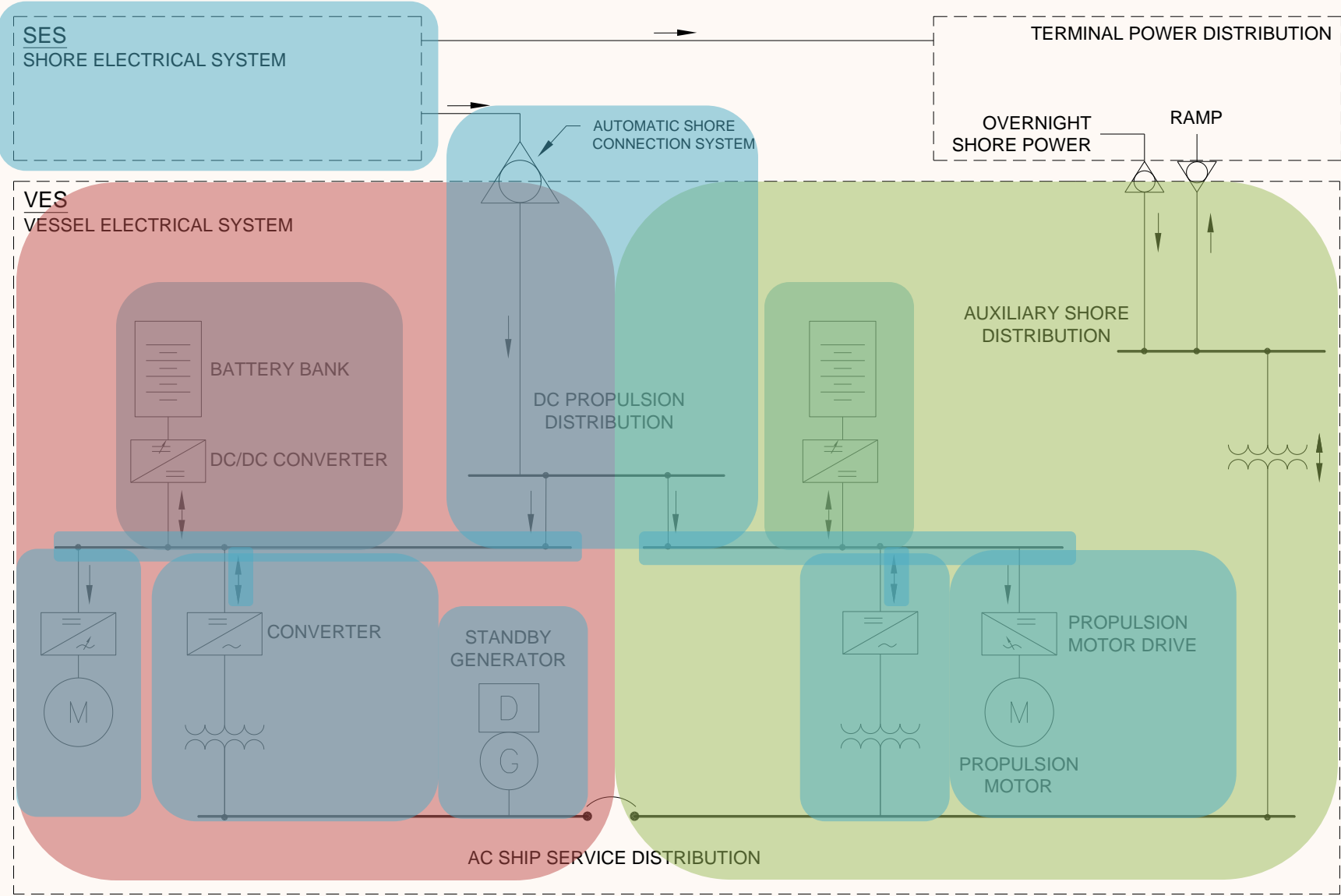


# Battery-Electric Overview





# Battery-Electric Overview



Glosten

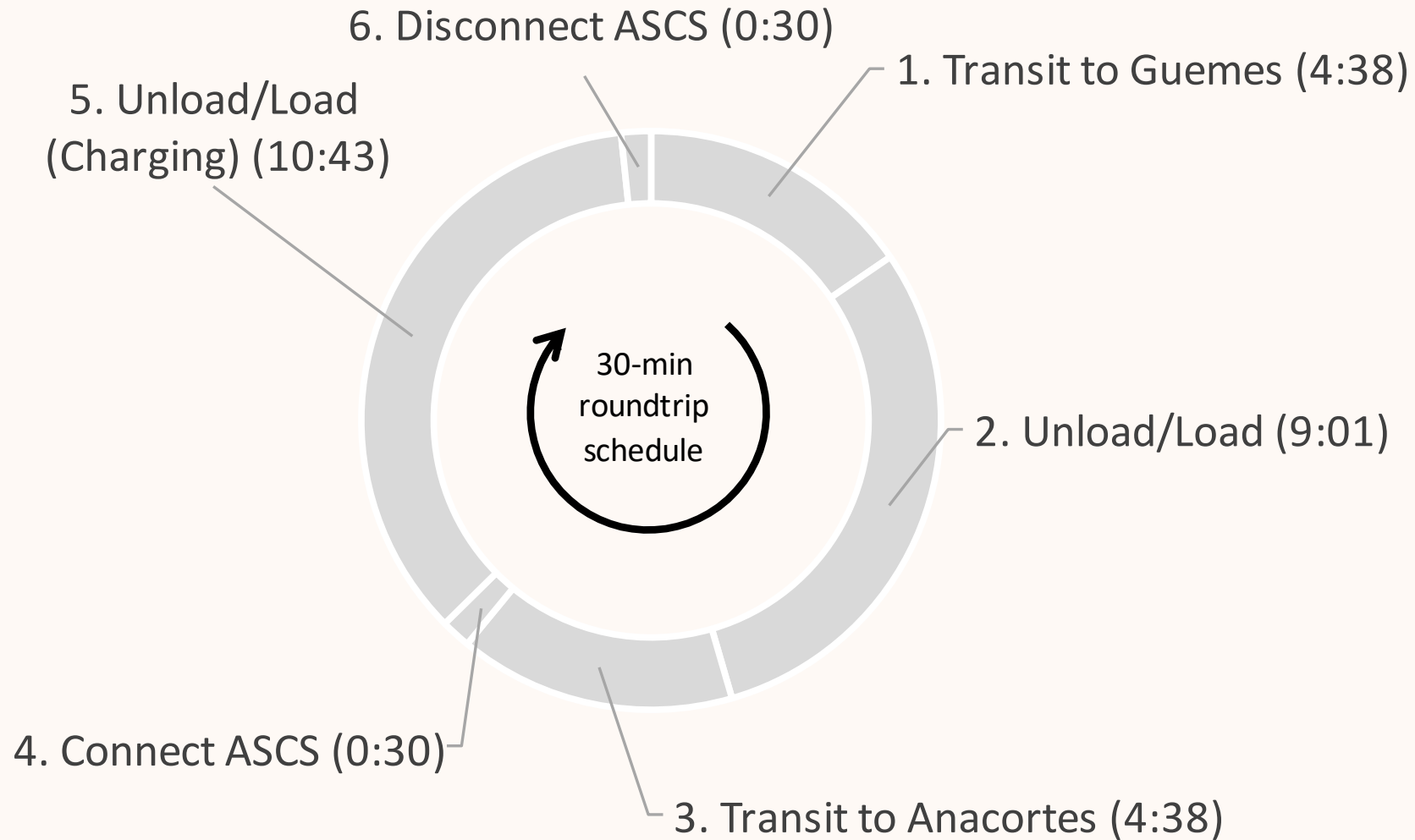




Glosten



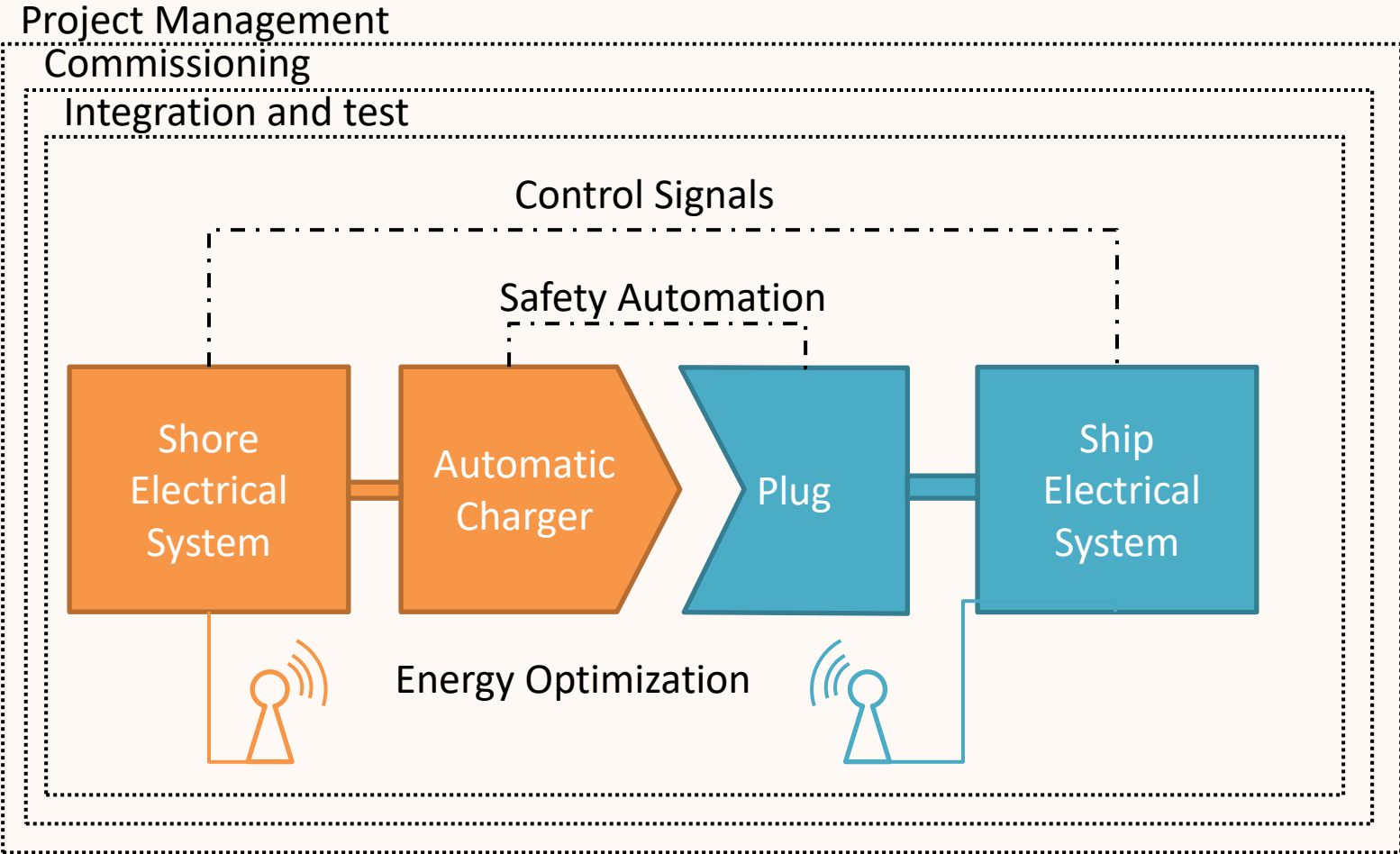
# Typical Schedule



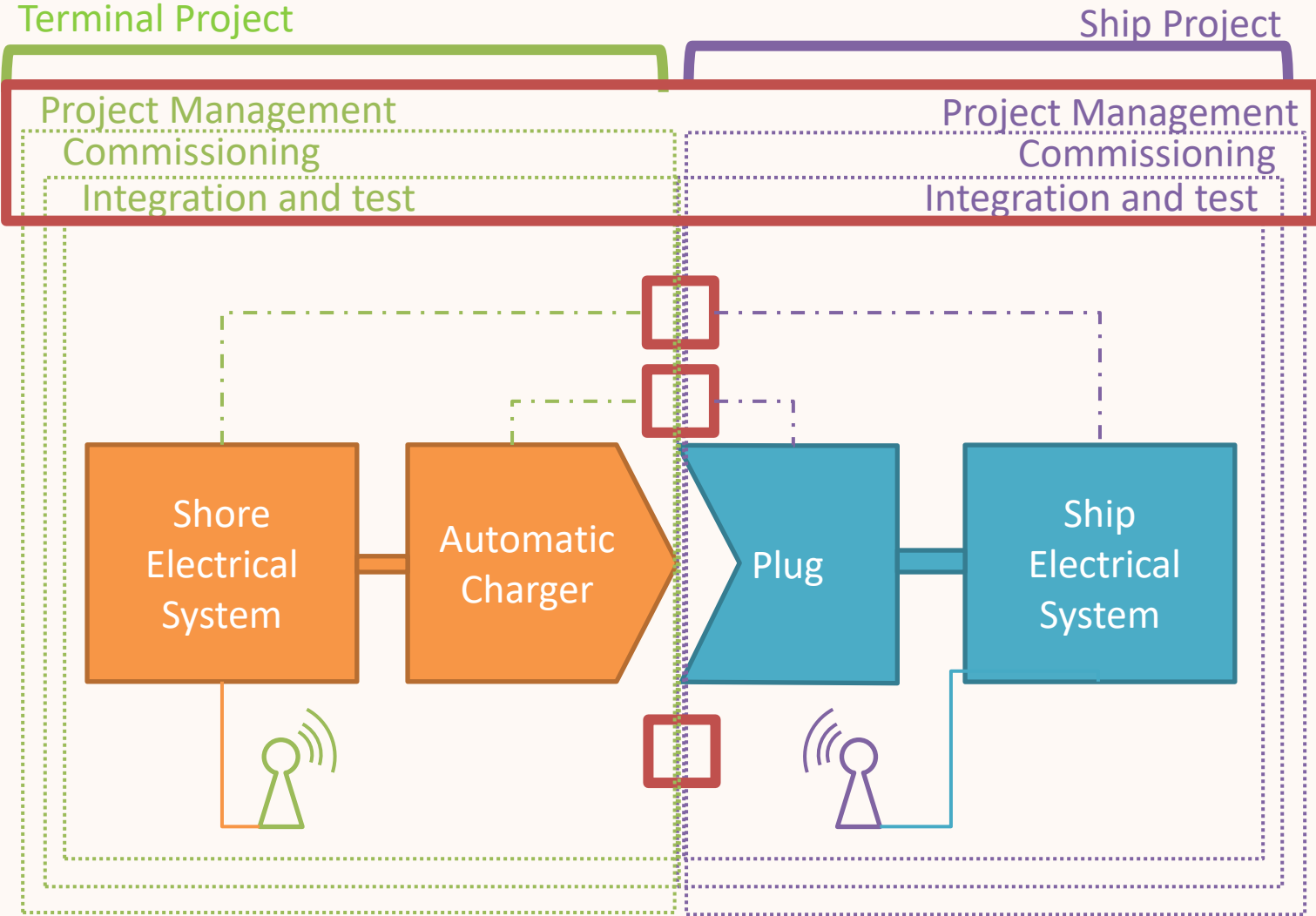
Glosten



# System Integration



# A single integrator is essential



# Procurement Policy

- Procured under RCW 36.77 (Roads and Bridges)
- Strict low-bid selection would not be appropriate given technical complexity
- WA passed new RCW in 2021
  - Allows preselection of ship/shore integrator
  - Allows best-value evaluation of construction bids

