

Future Vessel Procurement Outlook

September 2019



Foundations for Fleet Renewal

- New vessel designs will emphasize:
 - Safety
 - Environmental Stewardship
 - Standardization
 - Efficiency in cost of ownership
 - Class Builds
 - Enhanced Customer Experience
 - Incorporate Innovation
- Attain high physical and operational commonality
- Future Flagships of Tomorrow and beyond

Class Strategy (17 to 5 classes of ships)

Minimize Number of Classes in Fleet!

Objective: Standardized Vessel Types – Minimize Classes to 5

- Minor Island Class Ferry (47 Cars) – Hybrid Diesel Electric battery
- Intermediate Salish Class (138 Cars) – LNG Dual Fuel
- Major Vessel (360 cars) – **New** – LNG Hybrid Diesel Electric
- Shuttle Class (100 Cars) – **New** All Electric
- Northern Service – Square ended vessels

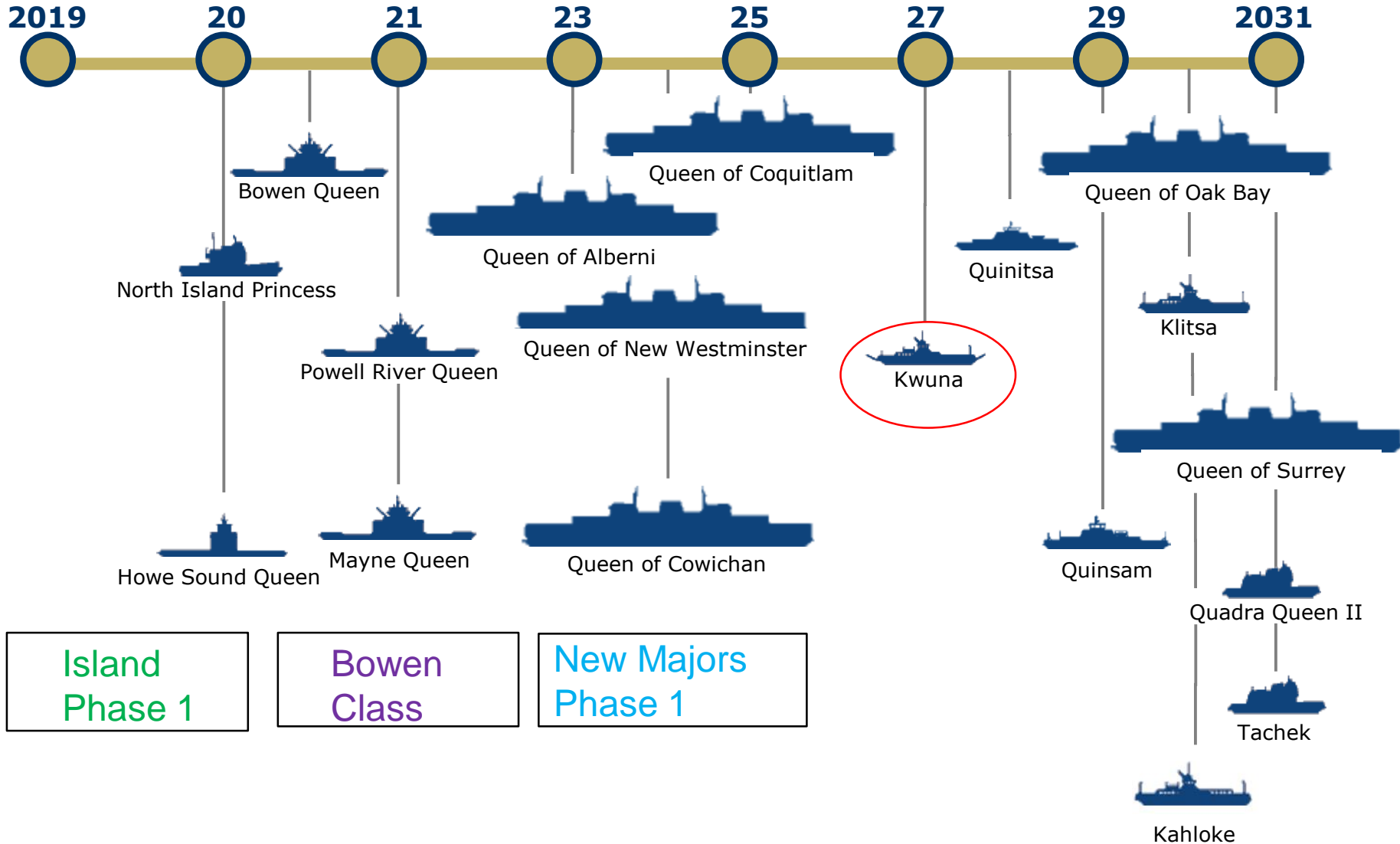


Island Class



Salish Class

Vessel Replacement Timeline



Island Class Replacement Project



Island Class Replacement Project

- Island Class is the Inter Island standard vessel
- All future vessels will be identical
- Potential for 10 - 12 additional vessels
- Short duration diesel electric hybrid
- Expandable to full electric operation in future
- Design attributes
 - Passenger/Crew Capacity: 450
 - Vehicle Capacity: 47 AEQ
 - Service Speed: 14 knots @ 85% MCR
 - Electrical Installation: 800 KWh (initially)
 - Electrical Capacity: 2 MWh capacity in future
 - Length Overall: 80.80m

Island Class – *Hybrid is coming!*

Features:

- Hybrid Electric w/ Batteries
- Flexible design for full electrification in future
- 270 lane-m car deck (~ 47 AEQ)
- Open vehicle deck w/ramp over lounge
- Double-ended w/ 2 CL thrusters (mini-Salish)
- No elevators -> car deck lounge
- Standardized bridge (2 central control stations)



Island Class Replacement

- Phase 1 currently under construction (2 ships deliver 2019)
 - Damen Netherlands & Damen Galati Romania
 - Warranty with Point Hope Maritime Support
- Phase 2 currently in procurement
 - Contract award in 2019 (4 more ships)
- Phase 3 to follow (Up to 7 additional ships)
 - To replace retiring vessels 2026 - 2029

Bowen Class Replacement

- 3 Bowen Class ships to be replaced with:
 - (4) Island Class vessels; and
 - (1) Salish Class vessel
- Procurement processes active
 - Open procurement
 - RFEOI / RFPQ / RFP
 - Contract award planned in 2019

New Major Vessel Replacement



BC Ferries

New Major Vessel Project

- The vessels listed below will be replaced by 4 or 5 NMVs
- NMVs will be interoperable on Routes 1, 2 and 30 (and Route 3 in the future)
- A second tranche of NMVs (2 or 3) will replace the Queen of Oak Bay and the Queen of Surrey in the future

Vessel	Planned Retirement Date
Queen of Alberni	October 2023
Queen of New Westminster	April 2024
Queen of Cowichan	October 2024
Queen of Coquitlam	September 2025

New Major Vessels



- Phase 1: Construct up to 5 vessels to replace 'C Class'
 - Timeline (Phase 1)
 - Requirements Definition: 2019
 - Procurement (RFP) Process: 2020
 - Design and Build: 2021 – 2023
 - Deliver: 2024 +
- Phase 2: Construct 3 Major vessels to replace 'C Class'
 - Timeline (Phase 2)
 - Start build: 2027 – TBC
 - Deliver: 2030 / 2031

New Major Vessels

- Modern amenities
- Environmentally focused design features
- Energy Reduction Target
- Customer focused
- Lowest possible underwater radiated noise
- Low wake/wash
- LNG / Hybrid – Efficient Propulsion Plant
- Increase passenger seating
- Up to 360 AEQ (6.1 m slots)
- Target Tonnage < 10,000 tons displacement

New Major Vessel Specifications

Vessel Type	Roll-on/roll-off passenger ferry
Fuel	Dual Fuel (LNG/diesel)
Power Plant	Gas-Electric (AC distribution or DC Grid) TBD
Hybrid	TBD - Spinning Reserve
Propulsion Configuration	Variable Frequency Drives; 1 x CPP or FPP each end/Rudder; or 2 x Azimuthing thruster/pod (TBD)
Vehicle Decks	2
Passenger Decks	2 or 3
Maximum Overall Length	≤172 meters
Maximum Width	≤28.2 meters
Maximum Displacement	≤10, 000 tonnes
Lane Meters	2,200 meters (at least 780 lane*m overheight)
Lane Width	2.6m standard (TBD)
Pax and Crew Capacity	2,100
Maximum Speed	TBD
Maximum Draft	≤6 meters

New Major Vessel Design Requirements

- Design and Build
 - BCF has limited “in house” design services
 - BCF invokes design and build standard for contracting new vessels
 - Ensures clear understanding of shipyard obligations & contract performance
 - Details all shipyard contract performance and prescriptive requirements for any sub-contactors (where used)

- Supplier Opportunities
 - BCF specifies makers / suppliers in RFP
 - Suppliers must make offer to shipyards
 - Allows for equipment selection and standardization
 - Register with Supply Chain to be considered as a BCF Supplier for inclusion on the Maker’s List

Future Vessel Replacements

- *Kwuna* Replacement (One of – Unique ramped vessel)
 - Single Minor vessel
 - Length BP 47 meters & 375 tons lightship displacement
 - Timeline
 - Procurement (RFP) Process: 2024
 - In-Service: 2027
- New Shuttle Route Vessels
 - 2 routes to be serviced
 - Length BP 100 meters & 1500 tons lightship displacement
 - Timeline
 - Procurement (RFP) Process: 2025
 - In-Service: 2028
- Additional Routes (Potentially)
 - To meet growing traffic demands
 - Vessels chosen / built to suit new routes

Vessel Procurement

New Vessel Procurement follows a standardized three step process:

- 1) Request for Expression of Interest (RFEOI)*
 - 2) Request for Pre-Qualification (RFPQ)*
 - 3) Request for Proposal (RFP)*
- Open RFP Process to attain best overall value for the people of British Columbia

Discussion



Launching Island Class
Ship # 2
14 March 2019



