

British Columbia Ferry Services Inc.

Application to the
British Columbia Ferries Commissioner

Pursuant to
Section 55 (1) of the *Coastal Ferry Act*

For Preparatory Work for
Modifications to Terminal Infrastructure
In Anticipation of Island Class Vessel Electrification

December 9, 2022



Note: In this copy of the Application information of a confidential and commercially sensitive nature has been redacted.

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Section 1 – Introduction

In anticipation of the introduction of electrified Island class vessels, British Columbia Ferry Services Inc. (“BC Ferries” or the “Company”) proposes to proceed with limited capital expenditures to undertake preparatory work in support of modifications to terminal infrastructure on the routes connecting Nanaimo Harbour with Gabriola Island (“route 19”) and Campbell River with Quadra Island (“route 23”) (“the Preparatory Work”). This Preparatory Work will help to mitigate the risk of schedule delays and is expected to be commenced prior to the Company’s separate submission to the British Columbia Ferries Commissioner (the “Commissioner”) for the approval of a major capital expenditure for electrified vessels on these routes.

Section 55 of the *Coastal Ferry Act* (“the Act”) provides for the review by the Commissioner of the capital deployments and expenditures undertaken by ferry operators (see Appendix ‘A’). Under section 55 (1), the Company *may* apply to the Commissioner to review a capital expenditure, or under section 55 (2) it *must* seek approval of the Commissioner if it meets the criteria as a *major* capital expenditure as defined by the Commissioner.

By Order 19-03, the Commissioner defined a major capital expenditure for which the Company must seek approval under section 55 (2) to include any capital expenditure which exceeds \$50 million for vessels or \$25 million for terminals.¹ The total capital expenditure for the Preparatory Work may be found in Confidential Appendix ‘A’ (the “Requested Amount”). As the Requested Amount falls below the threshold levels set by Order 19-03, BC Ferries is submitting this Application in accordance with section 55 (1) of the Act.

BC Ferries believes that the approach described in this filing is affordable, reasonable and prudent, but wishes to confirm that the Commissioner agrees the capital expenditure for the Preparatory Work is reasonably required and that it may proceed at this time.

¹ Order 19-03, *In the Matter of Section 55 and Section 67 of the Coastal Ferry Act, and Establishment of the Criteria for a Major Capital Expenditure*, January 25, 2019.

Section 2 – Background

BC Ferries is one of the largest ferry operators in the world, providing year-round vehicle and passenger service on 25 routes to 47 terminals. The Company's Island class ferries are its modern standardized minor class vessels, first entering service in 2020. These open deck, double ended vessels are highly efficient ferries that currently operate in diesel-electric hybrid mode and have space available onboard to allow for upgrade to full battery-electric operation. In this context, battery-electric operation involves recharging onboard batteries from shore-based electricity and allowing the ships to operate without the need to rely on their onboard diesel engines.

On May 28, 2021, BC Ferries submitted an application to the Commissioner under section 55 (2) of the Act for approval of a major capital expenditure for the electrification of its existing six Island class vessels (the "Previous Application"). The Previous Application indicated that capital funding was required from both BC Ferries and external sources to upgrade its Island class vessels to enable operation in battery-electric mode exclusively, with corresponding electrical upgrades for rapid charging at up to nine terminals on four routes, including routes 19 and 23 (see Appendix 'B'). As BC Ferries' capital allocation would not cover all costs associated with this electrification, the Company would work to secure external funding from the Government of Canada.

By Order 21-01, dated July 26, 2021, the Commissioner approved the Previous Application, subject to conditions.² However, to date the Company has not been successful in obtaining the federal funding and the Island Class Electrification Program ("ICEP") has not proceeded.

Despite this, BC Ferries still believes in the merits of electrified Island class vessels and that vessel electrification is in the public interest. As described in the Previous Application, it has strong support from stakeholders, helps to reduce operating costs and provides coastal communities with clean and sustainable transportation. Vessel electrification is also identified in the Company's *Clean Futures Plan 2022* as a key action area in the Company's focus on reducing the greenhouse gas ("GHG") emissions and striving to meet the Province's 2030 GHG emissions reduction target for the transportation sector.³

In addition, since receipt of Order 21-01, the Company conducted a lifecycle financial analysis in November, 2022 comparing electric and renewable diesel operations on routes 19 and 23 to confirm the most appropriate sustainable energy source for these vessels (see Confidential Appendix 'B'). Based on the assumptions modeled, over a 20 year life (i.e., the assumed useful life of terminal assets associated

² Order 21-01, *In the Matter of Approval of a Major Capital Expenditure for Electrification of Six Island Class Vessels Proposed by British Columbia Ferry Services Inc. Pursuant to Section 55(2) of the Coastal Ferry Act*, July 26, 2021.

³ *Clean Futures Plan 2022 – An Update on Progress*, https://www.bcferreries.com/web_image/hf0/hce/8910527397918.pdf.

with electrification), the net present value (NPV) for electrification is expected to be very comparable to renewable diesel for both routes before accounting for any potential additional external funding. The lifecycle financial analysis considered a number of factors and assumptions with inherent uncertainty, so an extensive sensitivity analysis was also conducted.

Although the NPV financial analysis only slightly favours electrification over the alternative of renewable diesel, BC Ferries believes this is based on relatively conservative assumptions. The sensitivity analysis demonstrates there is potential for significant financial upside on the electrification option. For example, this would occur in the following circumstances:

- The duration of carbon credits was extended beyond 2030;
- The renegotiated value of the Part 3 grant was increased;
- The discount rate for future cash flows in the NPV analysis were reduced; or
- The contingency allowance on estimated terminal capital investment costs was not required.

In addition to the financial analysis, BC Ferries also reviewed potential GHG emission reductions for both renewable diesel and electricity, compared to diesel fuel. From this analysis, it was determined that vessel electrification results in a greater annual lifecycle GHG emissions reduction compared to renewable diesel:

Approximate annual lifecycle emissions reduction compared to base case of diesel fuel (B5)		
Route	Renewable Diesel (R100)	Electricity
19	4,200 tonnes CO ₂ e	5,675 tonnes CO ₂ e
23	5,305 tonnes CO ₂ e	7,155 tonnes CO ₂ e

In summary, while the assumptions underlying this analysis will continue to be refined, the information available at this time is sufficient to establish that for the specific conditions prevalent on route 19 and 23 (i.e., where multiple vessels can benefit from shore-based infrastructure over a relatively short route), lifecycle costs of electrification may be marginally (or possibly significantly) better than using renewable diesel, and will deliver greater annual GHG emissions reductions. BC Ferries therefore considers that electrification continues to be favourable to renewable diesel for these routes.

In the coming months, BC Ferries intends to submit a new filing to the Commissioner (the “New Filing”) with a proposal for Island class electrification that will not be contingent on the federal funding, but is expected to include funding from BC Hydro as well as Part 3 funding in support of GHG remissions reductions from Provincial government. The exact scope and nature of this proposal is to be confirmed

but this future application for approval of a major capital expenditure under section 55 (2) of the Act is expected to include the implementation of four fully electrified Island class vessels on routes 19 and 23 (see Confidential Appendix 'C').

Section 3 – Description of Preparatory Work

With the anticipated future introduction of four fully electrified Island class vessels, the terminals on routes 19 and 23 will require shore-based infrastructure upgrades to accommodate vessel electrification. The critical path for the terminal electrification project is the timeline for BC Hydro to complete the design for the upgrades to their system to support route 23 electrification, while the largest schedule risk for the project is delays due to consultation requirements with First Nations during the permitting process. While formal consultation with First Nations will not be triggered for BC Ferries until later in the design development process, to lessen the risk of delays arising from these consultations, BC Ferries is already working with many of the Nations who have interest in this project to build and strengthen relationships that will support the work required. Additionally, pre-consultation notification and engagement activities related specifically to the project will occur over the next several months.

There is therefore an opportunity to mitigate the risk of further schedule delay for ICEP by releasing the Requested Amount at this time, ahead of the New Filing, to address these items. Accordingly, BC Ferries is seeking the Commissioner's approval under section 55 (1) of the Act to proceed with the expenditure of the Requested Amount for terminal-related engineering for routes 19 and 23. The bulk of this budget will be spent by BC Hydro and the Company's design consultant over approximately 12 months and will include the following:

- Funding for BC Hydro for their detailed design for off-terminal scope of work for routes 19 and 23;
- Funding for the engineering contractor for detailed design work for the infrastructure upgrades to the terminals for routes 19 and 23;
- Preliminary consultations with First Nations and stakeholders;
- Project management and internal labour; and
- Contingency.

The Preparatory Work will support the necessary terminal modifications and / or upgrades to ensure safe and reliable service on routes 19 and 23 that continues to meet the service level requirements of the Coastal Ferry Services Contract. The Company's Board of Directors supported the release of the Requested Amount at its meeting of August 17, 2022. In addition, the Requested Amount has been accounted for in the Company's long-term capital plan as part of ICEP.

BC Ferries believes in the merits of the Preparatory Work even if, for unanticipated reasons, the implementation of the fully electrified Island class vessels on routes 19 and 23 was delayed. The Company expects that it will proceed in due course with the New Filing, but even with a delay of several

years, this investment in the Preparatory Work would be of utility and would provide value when implemented. Ultimately, there is risk that this investment would be impaired if the electrified Island class vessels do not proceed on these routes. However, the Company supports Island class electrification and does not believe that this risk will materialize.

Section 4 – Conclusion

BC Ferries submits that the expenditure for the Preparatory Work is reasonably required. The Company is taking a prudent, pragmatic and reasoned approach to address schedule risks by undertaking the Preparatory Work. In return, this work will support the Company in bringing into service in due course fully electrified Island class vessels on routes 19 and 23.

The Requested Amount is modest (i.e., relative to the overall budget for the electrified Island class vessels) and is consistent with the Company’s long-term capital plan. The overall objective of vessel electrification will further reduce the Company’s emissions footprint in support of the Province’s 2030 GHG emissions reduction target for the transportation sector. It will allow the Company to move its customers in a more environmentally positive manner, and aligns with community expectations in providing cleaner and quieter operations onboard, at terminals and around nearby communities.

Overall, the Preparatory Work is in the public interest. It will be undertaken in support of the Company providing a safe, reliable and affordable ferry system, while helping to address environmental considerations.

Appendix 'A' – Section 55 of the *Coastal Ferry Act*

Commissioner to consider capital deployment and expenditures

- 55** (1) Subject to subsections (2) to (5), before deploying capital assets on, or incurring capital expenditures in connection with, a designated ferry route or terminal, the ferry operator may apply to the commissioner and the commissioner must, within one month after the application, declare whether the capital assets proposed to be deployed on, or the capital expenditures proposed to be incurred in connection with, the designated ferry route or terminal are reasonably required.
- (2) A ferry operator must not incur a major capital expenditure without first obtaining the commissioner's approval of the expenditure.
- (3) A ferry operator may apply to the commissioner for approval of a proposed major capital expenditure and the commissioner must respond to the application within 2 months after its receipt by the commissioner.
- (4) The commissioner may approve a proposed major capital expenditure if the proposed major capital expenditure is
- (a) reasonable,
 - (b) prudent, and
 - (c) consistent with
 - (i) the current Coastal Ferry Services Contract, and
 - (ii) any long term capital plan established by the ferry operator.
- (5) For the purposes of this section, a capital expenditure of a ferry operator is a major capital expenditure if it meets the criteria
- (a) established from time to time by the commissioner, and
 - (b) most recently provided by the commissioner to the ferry operator.

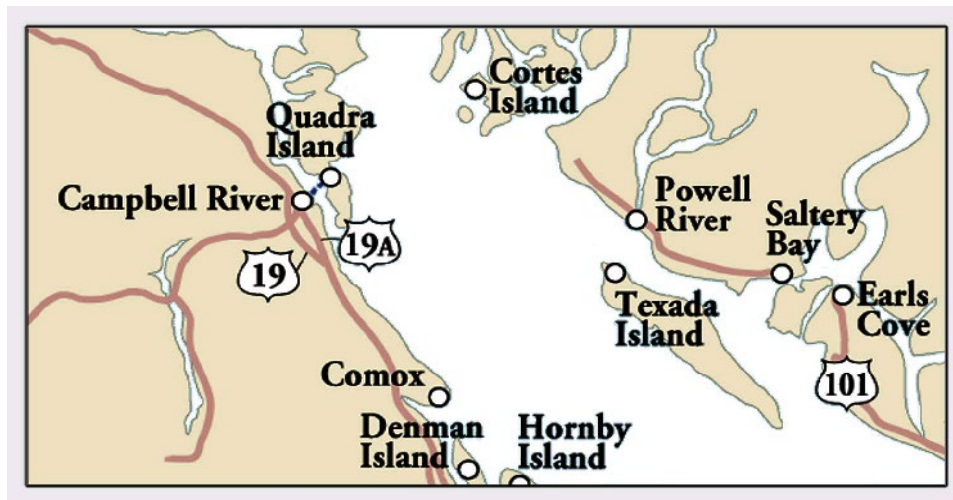
Appendix 'B' – Map of Island Class Routes

The following routes and terminals are in scope for ICEP:

- Route 19 – Nanaimo Harbour, Nanaimo / Descanso Bay, Gabriola Island:



- Route 23 – Campbell River / Quathiaski Cove, Quadra Island:



BC Ferries anticipates additional routes and terminals will eventually be served by Island class vessels, but these are not currently in scope for ICEP.