

# **British Columbia Ferry Services Inc.**

Application to the  
British Columbia Ferries Commissioner

Pursuant to  
Section 55 (2) of the *Coastal Ferry Act*

For the  
  
Island Class Electrification Program

**May 28, 2021**

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

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## Executive Summary

British Columbia Ferry Services, Inc. ("BC Ferries" or the "Company") 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 for their onboard diesel engines.

BC Ferries proposes to invest \$< > million, consisting of \$< > million in BC Ferries' capital funds and \$< > million in operating funds and the balance in external funding, to upgrade its six existing Island class vessels to enable operation in battery-electric mode exclusively. Corresponding electrical upgrades for rapid charging will be made at up to nine terminals on the routes connecting Powell River and Texada Island (route 18 – one vessel), Nanaimo Harbour and Gabriola Island (route 19 – two vessels), Campbell River and Quadra Island (route 23 – two vessels) and Port McNeill with Malcolm Island and Cormorant Island (route 25 – one vessel).

This Island Class Electrification Program ("ICEP" or the "Program") was conceived with two discrete stages of work. Only Stage 1 of ICEP, the electrification of four routes and the Company's six current Island class vessels, is the subject of this Application. Stage 2 of ICEP is conceptual only and will involve the future construction of further Island class vessels and modifications to additional terminals to support electrification on four other routes.

BC Ferries' \$< > million capital allocation will not cover all costs associated with this electrification, and efforts are under way to secure external funding from the Government of Canada. External funding is essential for BC Ferries to advance the timing of this Program and to achieve the benefits of Island class electrification earlier than originally anticipated for these vessels, without impacting the overall financial position of the coastal ferry system.

The electrification of the Island class vessels is in the public interest as evidenced by strong support from coastal communities and other stakeholders. This Program aligns with BC Ferries' strategic goals and provides an opportunity to reduce operating costs, to provide coastal communities with clean and more sustainable transportation, and to help to create highly skilled, meaningful employment that supports post-pandemic economic recovery, with no upward pressure to long-term price cap needs. It offers the opportunity to help decarbonize the ferry service, trigger market transformation, and set a new precedent for greenhouse gas ("GHG") emissions reduction initiatives, while maintaining current levels of service to communities.

## Section 1 – Introduction

### 1.1 Application Overview

BC Ferries submits this Application pursuant to section 55 (2) of the *Coastal Ferry Act* (the “Act”) and Order 19-03 of the British Columbia Ferry Commission, dated January 25, 2019.

Section 55 (2) of the Act requires BC Ferries to obtain the approval of the British Columbia Ferries Commissioner (the “Commissioner”) before incurring a major capital expenditure. Under section 55 (5), a major capital expenditure is defined as one that:

*“...meets the criteria (a) established by the Commissioner from time to time, and (b) most recently provided by the Commissioner to the ferry operator”.*

By Order 19-03, dated January 25, 2019, the Commissioner determined that for the purposes of section 55 (5) of the Act:

- 1. Any capital expenditure for any new vessel or mid-life upgrade to a vessel (“Vessel Expenditure”) is a major capital expenditure if the expenditure exceeds \$50 million inclusive of vessel related component programs and interest during construction;*
- 2. Any capital expenditure for new terminals, terminal upgrades, information technology systems or other non-vessel capital expenditures (“Non-Vessel Expenditure”) is a major capital expenditure if the expenditure exceeds \$25 million, inclusive of non-vessel related component programs and interest during construction;*
- 3. In the case where a single project (“Project”) planned by a ferry operator includes capital expenditures of a type referenced in both paragraphs (1) and (2) above, the entire capital expenditure for the Project will be a major capital expenditure if either the Vessel Expenditure or Non-Vessel Expenditure exceeds the applicable threshold;*
- 4. When estimating the amount of a planned capital expenditure for purposes of this Order, a ferry operator may exclude the amount of any third party contributions;*

The Company proposes to achieve full electrification of its first six Island class ferries, enabling them to operate in battery-electric mode exclusively as plug-in vessels with the ability to recharge from shore-based electrical power supply. Corresponding electrical upgrades will be made to up to nine terminals on the routes connecting Powell River and Texada Island (route 18 – one vessel), Nanaimo Harbour and Gabriola Island (route 19 – two vessels), Campbell River and Quadra Island (route 23 – two vessels) and Port McNeill with Malcolm Island and Cormorant

Island (route 25 – one vessel).<sup>1</sup> A map at Appendix “A” shows the routes where the Island class vessels will operate.

The Company plans to establish two separate projects for this Program: a terminal electrification project, and a vessel electrification project. Terminal project preliminary design work is underway; however, a more comprehensive detail design stage will be conducted once the Program is fully approved and funding is in place. For the vessel project, detailed design is already in progress and expected to be completed by Summer 2021. Once designs have been completed, BC Ferries will solicit bids from interested companies to complete the electrification work for the terminals and vessels.

BC Ferries proposes to invest up to \$< > million capital funds and \$< > million supplemental Program operating expenditures, towards the Program cost of \$< > million, with the balance to be provided from external sources. BC Ferries' capital allocation will not cover all costs associated with the Program, and efforts are underway to secure external funds, such as from a Government of Canada grant. External funding is required to proceed with this Program.

Pursuant to Order 19-03, the Program constitutes a major capital expenditure. On April 26, 2021, the BC Ferries Board of Directors authorized management to proceed with a section 55(2) Application to the Commissioner in respect of ICEP and, after a successful application or after satisfying any conditions precedent in relation to the Application, the Company is authorized to proceed with the ICEP. By this Application, BC Ferries therefore seeks the approval of the Commissioner, in accordance with section 55 (2) of the Act, for a major capital expenditure for the Program (excluding the Government of Canada or other external contribution) of up to \$< > million with supplemental expenditures of up to \$< > million.

BC Ferries believes that the total expenditure for the Program supports the public interest in safe, reliable, environmentally sustainable and affordable ferry service. The Company submits that the proposed investment is reasonable, affordable, prudent and consistent with the Coastal Ferry Services Contract between the Company and the Province of British Columbia (the “Contract”).

BC Ferries notes that the legislative requirement to seek pre-approval of the proposed capital expenditure for the Program necessitates the submission of this Application prior to certain terminal and vessel design elements being finalized. Furthermore, the Government of Canada will expect BC Ferries to have obtained all pre-approvals necessary to undertake the project as

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<sup>1</sup> Stage 2 of ICEP, to be considered in the future and which is not the subject of this Application, includes the construction of Island class vessels and modifications to terminals that will enable full battery-electric operation on the routes connecting Crofton to Vesuvius (route 6), Chemainus with Thetis Island and Penelakut Island (route 20), Denman Island to Hornby Island (route 22) and Quadra Island to Cortes Island (route 24).

a condition of any funding. The current cost estimates are informed by concept designs and initial studies of technical viability involving electrification of Island class vessels and terminals, and are subject to further change as Program details are further developed. With these new technologies, there is a risk that certain of the cost assumptions BC Ferries has made in this Application may require subsequent amendment, with a commensurate change in the projected capital expenditure for the Program. In order to mitigate the risk of future amendments, the total Program budget includes a margin of contingency reflective of current assumptions.

## **1.2 Organization of Application**

This Application is organized as follows:

- Section 2 describes the current environment including a discussion of the Company's initiatives with regard to sustainability and the environment, and a description of the Island class vessels;
- Section 3 provides a Program overview, including funding opportunities for the Program, a description of improvements to terminals and Island class vessels to facilitate full vessel electrification, public feedback and engagement, and Program benefits;
- Section 4 provides a financial assessment of the electrification options that have been considered, together with a recommended option and the expected impact on the price caps should that option be approved;
- Section 5 addresses matters related to procurement, timeline and risk mitigation strategies for the Program.

The Commissioner has provided BC Ferries with a set of questions to assist in the determination that the proposed capital expenditure meets the requirements for approval of a major capital expenditure under section 55 of the Act. Those questions, with corresponding responses, are distributed as applicable throughout this Application.

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## Section 2 – Current Environment

### 2.1 Overview

BC Ferries is an independent company providing ferry services on the west coast of British Columbia in accordance with the requirements of the Contract. The Company provides frequent year-round marine transportation service with 35 vessels operating on 25 routes out of 47 terminals spread over 1,600 kilometres of coastline. In Fiscal 2020, the last year before traffic levels were significantly impacted by the COVID-19 pandemic, BC Ferries carried 8.8 million vehicles and 21.7 million passengers on more than 82,000 round trips.

The Company has a vision of being trusted and valued, and its mission is to connect communities and customers to the people and places important in their lives. Integral to this, BC Ferries understands its responsibility to act in the public interest by providing safe, reliable, efficient, affordable and sustainable marine transportation, as well as its important role in maintaining the quality of life of people who live, work, and visit British Columbia. BC Ferries is a significant contributor to the provincial economy, an enabler of commerce for coastal communities, and a vital connection on which coastal communities rely.

The Company includes sustainability as one of its core values, and BC Ferries' environmental, social and economic impacts are central to its business decisions. One of BC Ferries' strategic goals is to pursue climate change initiatives, with the objective of reducing the Company's environmental impact. BC Ferries has worked hard to reduce its footprint and stay true to its goals for environmental performance and sustainability, including as follows:

- Since 2014, BC Ferries has been a member of the Green Marine program—a voluntary environmental certification program for the North American marine transportation industry—for all of its ferries and terminals. In 2017, the Company expanded its certification to include its fleet maintenance facility.
- The Company's *Clean Futures Plan* describes its strategy to reduce GHG emissions by replacing its legacy carbon-intensive fossil fuels with clean and renewable energy. While this cannot be achieved in a single step, BC Ferries continually seeks among available energy sources the cleanest, lowest carbon-intensity option that it can afford to displace non-renewable diesel.
- BC Ferries' *Energy Policy* sets the stage for the Company's energy management program, which integrates emissions reduction, energy efficiency practices, and a culture of shared responsibility into operations, maintenance, project management, and capital planning for vessels and shore-side assets and facilities.

- The *Strategic Energy Management Plan* (“SEMP”) has been developed in partnership with BC Hydro and FortisBC and provides a framework for the sustainable development of its business through initiatives to increase energy efficiency and reduce GHG emissions. SEMP is a rolling five-year plan comprised of operational improvements and capital investments to increase efficiency, reduce emissions, set baselines and measurable targets for energy efficiency, and explore opportunities for low carbon fuel. SEMP supports the *Clean Futures Plan* and the *Energy Policy*, providing a systematic approach to reach identified goals.

Investing in Island class electrification will support community health and wellbeing while elevating BC Ferries as a leader in progressing environmental issues. Island class electrification also provides an opportunity to provide cleaner and quieter operations onboard, at terminals, and around nearby communities, which directly affects customers and improves their travel experience.<sup>2</sup>

## 2.2 Integrating Clean Technologies into BC Ferries’ Operations

BC Ferries’ vessels historically have consumed traditional fuels such as ultra-low sulphur diesel. Since 2010, marine diesel supplied to BC Ferries has had five percent biodiesel content. Going forward, the Company intends to explore the potential of progressively increasing the biodiesel content in its diesel fuel and of adopting renewable diesel to reduce GHG emissions for the existing fleet.

A shift in recent years to liquefied natural gas (“LNG”) in the Company’s Salish and Spirit class vessels has delivered the most significant step reduction in the GHG intensity of BC Ferries’ fleet. As discussed in more detail below, BC Ferries’ Island class vessels currently operate using a diesel-electric hybrid mode and their transition to full electrification will be an integral step in the Company’s continued transition away from carbon intensive energy.

In addition to alternatives to legacy fossil fuel, BC Ferries is investing in sustainable technologies like shore power, cable ferry technology and high efficiency new vessels. To offset fossil fuel use, the Company’s ships switch to shore power at night and when not operational. Hydroelectric shore power is much cleaner and vessels’ shipboard generators are stopped to eliminate engine noise and emissions. In 2013 the *MV Tachek* was fitted with a 200 kWh battery array for handling peak loads, such as when operating its new bow thruster. In addition, the world’s

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<sup>2</sup> BC Ferries is also actively reducing its underwater radiated noise (“URN”), which will have a positive impact on whales and other marine animals in general and the southern resident killer whale population in particular. As reflected in the Company’s *Long Term Underwater Noise Management Plan*, each new class of ships the Company builds is generally quieter than the one before it. Although the noise-related benefits from Island class electrification are difficult to quantify, it is expected that there will be benefits to marine animals, including underwater species, through the operation of quieter, electrified vessels.

longest saltwater cable ferry, the highly efficient *Baynes Sound Connector*, travels between Buckley Bay and Denman West.

## 2.3 Island Class Vessels

The Island class ferries are BC Ferries' modern standardized minor class vessels, and first entered service in 2020. They have a capacity of 47 automobile equivalents<sup>3</sup> and up to 400 passengers and crew, with limited amenities and ancillary services. These open deck, double ended ferries are highly efficient vessels currently operating in diesel-electric hybrid mode, with space available onboard to allow for future upgrades for full battery-electric operation. In this context, battery-electric operation refers to recharging onboard batteries from shore-based electrical power sources and allowing the ships to operate without need of their onboard diesel engines.

Currently two Island class vessels are in service and four more are under construction (or have recently completed construction) in Romania and are scheduled to enter service by early 2022. The Commissioner has previously reviewed and approved the Company's applications under section 55 (2) of the Act for the proposed major capital expenditures that resulted in the construction of the first two and subsequent four Island class vessels:

- *A Major Capital Expenditure for Two Minor Class Vessels Proposed by British Columbia Ferry Services Inc. Pursuant to Section 55 (2) of the Coastal Ferry Act (Orders 17-01 and 17-01A); and*
- *Section 55(2) of the Coastal Ferry Act and a Major Capital Expenditure for Four Island Class Vessels and one Salish Class Vessel proposed by British Columbia Ferry Services Inc. (Orders 19-02, 19-02A and 19-02B).*

BC Ferries noted in the latter application that the Island class vessels would have hybrid diesel-electric propulsion and would be built to be capable of upgrade to all-electric propulsion as the technology permitted and the necessary electrical infrastructure was in place to support it. Further details regarding the Island class vessels may be found in the Company's applications with respect to these vessels.

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<sup>3</sup> An automobile equivalent (AEQ) represents the amount of vessel capacity occupied by a particular vehicle type, expressed as the number of under height vehicles it displaces (e.g., a bus which displaces three under height vehicles – or cars – would have an AEQ of three).

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## Section 3 – Program Overview

### 3.1 Program History and Rationale

#### 3.1.1 External Funding Opportunities

For several years, BC Ferries has held aspirations for fleet electrification and this strategic goal is well described in policy documents such as the *Clean Futures Plan* and the SEMP. Although the strategic objective is clear, prior to December 2020 the Company anticipated that full electrification of the Island class would occur in the mid-2030's during the vessels' quarter life upgrades. Due to the significant capital investment required to upgrade the first four routes for full battery-electric operation, ICEP can only proceed if additional funding is secured from external sources.

##### **Government of Canada**

In late 2020, BC Ferries became aware of funding potentially available from the Canadian government for “ready-to-implement” projects that would assist in national and provincial economic recovery following the COVID-19 pandemic, and that would aid in the adoption of zero-emission transportation technologies in Canada. In response to several public Government of Canada pronouncements about economic recovery projects, ICEP was conceived in December 2020 to incorporate various longer-term vessel and terminal initiatives into a coherent, executable program of work. BC Ferries then initiated preliminary discussions with the Canadian government in an effort to secure funding and enable the Company to advance the full electrification of the Island class vessels and to realize electrification's significant environmental and financial benefits in the near term. Appendix “B” is a high-level summary of the Program as proposed to the Canadian government.<sup>4</sup>

Although efforts are underway to secure a federal government financial grant, the Government of Canada will expect BC Ferries to have first obtained all necessary internal and external approvals for the ICEP capital expenditure and to be in a position to execute the program in a timely manner upon receipt of funding.

##### **Greenhouse Gas Reduction Act**

In addition to the funding proposal to the Government of Canada, BC Ferries also responded to the provincial government's request for proposals under the *Greenhouse Gas Reduction*

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<sup>4</sup> The ICEP proposal that was developed for Government of Canada consideration described work in two stages. Stage 1 of ICEP involves all work to achieve full electrification of four routes where BC Ferries already operates, or will soon operate, the Island class vessels. Stage 2, which is outside the scope of this Application and remains conceptual at this time, proposes to accelerate the build program for additional Island class vessels, and to make modifications to additional terminals, to allow for further electrification on four more BC Ferries routes.

(*Renewable and Low Carbon Fuel Requirements*) Act (“Greenhouse Gas Reduction Act”).<sup>5</sup> BC Ferries applied through an external Part 3 fuel supplier since BC Ferries is not yet a recognized fuel supplier under the Greenhouse Gas Reduction Act. This application was successful and resulted in an agreement (known as the “Part 3 Agreement”) enabling the proceeds from the sale of carbon credits by the recognized Part 3 fuel supplier to be passed through to BC Ferries as funding towards ICEP. The agreement sets out the number of carbon credits that will be received once certain project milestones are met. The external funding expected from this source is based on the value of these credits as of 2019 (\$283 each).

Carbon credits are further described in section 3.4.5 of this Application.

### **3.1.2 Trends in Climate Action**

BC Ferries has a strategic goal to pursue climate change initiatives, with the objective of reducing its environmental impact. In addition to the potential opportunity to access external funding, current implementation of ICEP would coincide with established and emerging regulatory targets and trends in climate action. These ambitious targets act as catalysts to important incentive opportunities, including potential Government of Canada funding. Provincial, federal and international governing bodies are all aggressively pursuing projects and initiatives that could help them achieve long-term goals.

See section 3.4.2 of this Application for a further discussion.

## **3.2 Program Summary**

The full scope of the Program includes upgrades to BC Hydro’s distribution system to supply terminals with necessary electricity to charge electrified Island class vessels, terminal electrical upgrades to install a rapid charging system, and modifications to Island class vessels to operate in battery-electric mode only.

### **3.2.1 Terminals**

Electrical upgrades will be required at up to nine terminals on routes 18, 19, 23<sup>6</sup> and 25 to accommodate a rapid shore-to-ship recharging system. In addition, BC Hydro service upgrades

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<sup>5</sup> The Greenhouse Gas Reduction Act and the Renewable & Low Carbon Fuel Requirements Regulation, known collectively as British Columbia’s Low Carbon Fuel Standard, were enacted to reduce the carbon intensity of fuels used in the province. Under the Greenhouse Gas Reduction Act, recognized fuel suppliers can obtain low carbon fuel credits by entering into a Part 3 Agreement to undertake actions that increase the use of low carbon fuels sooner than would occur without the agreed-upon action.

<sup>6</sup> An energy study is under way that will determine whether vessel re-charging will be required at Quathiaski Cove. Results of the energy study (part of the vessel design work) are expected by June 2021. Lay-up berths are not included in Program scope.

will be needed to supply the terminals with electricity in the form and quantity necessary to efficiently/effectively charge the vessels. New medium voltage power systems, including cabling, transformers, power conversion and protection will be installed. The terminal upgrades are expected to include:

- BC Hydro distribution upgrades to provide adequate electrical service to the terminals (to be completed by BC Hydro<sup>7</sup>);
- Electrical switch gear and transformers to safely convert the BC Hydro feed;
- New electrical buildings, as required, and electrical conduit to bring the power to the berth; and
- Civil work and marine platforms, as required, to suit the terminal infrastructure and provide a standard ship-shore interface to charge vessels in the berth.<sup>8</sup>

Conceptual layouts and cost estimates to provide electrification charging infrastructure at each terminal have been completed, along with conceptual-level cost estimates provided by BC Hydro on the required electricity grid distribution upgrades. Additional investigations and studies are now underway to allow the terminal and vessel project teams to finalize decisions, such as the standardized location for the charging system and whether it is more cost-effective to have electrical power conversion systems on shore or in the vessels. Once these decisions are taken, preliminary designs and cost estimates will be completed for each terminal as well as for the required BC Hydro infrastructure, followed by final detailed designs for each location. This design process is scheduled to be completed by Spring 2022, and will require progressive budget releases as internal project approvals are completed.

### **3.2.2 Vessels**

Vessel upgrades will enable operation in battery-electric mode exclusively and are expected to include:

- Installation of additional batteries;
- Upgrades to the battery room heating ventilation and air conditioning system;
- Upgrades to switchboards;

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<sup>7</sup> BC Ferries has already commenced discussion with BC Hydro to develop preliminary plans for the Program. BC Hydro has agreed that the work is feasible. Costs for the BC Hydro upgrades are included in the Program budget estimates.

<sup>8</sup> Electrification of lay-by berths is not part of the scope for this program. This will not affect the Company's ability to operate the fully electrified vessels.

- Upgrades to the vessel's electrical cabling system to enable recharging from ashore; and
- Updated power management and control system software.

Electrification of the Island class to make the ships 'plug-in ready' cannot occur until the detailed engineering design work is completed in August 2021. Such work includes energy studies for all Island class routes, detailed engineering analysis and design, vessel engineering change design package, and an asset management plan. In addition, vessel-terminal integration and simulation design work will be completed after the vessel detail design is completed, with the approximate duration of four months.

Environmental considerations are important in the disposal of onboard battery energy storage systems. BC Ferries has identified and is considering the selection of local companies that have extensive experience in battery recycling and related environmental management.

It is expected that full battery-electric operation will be possible for the routes in scope of the Program, with the possible exception of the route connecting Port McNeill with Malcolm Island and Cormorant Island (route 25). Due to the length of this route and the limited time available for recharge between sailings, Island class vessel energy requirements may exceed battery capability and may require operation in diesel-hybrid mode by end of the sailing day. An energy analysis, currently underway, will determine actual energy consumption requirements for route 25. To operate in fully electric mode, an alternate schedule may be required, with more time in dock and/or decreased transit speed. The actual proportion of total energy that comes from shore electricity versus diesel will depend on the vessel schedule as well as some design decisions to be made regarding the charge power. These factors become more certain as design decisions and schedule optimization are finalized. The financial analysis in this Application assumes that the vessel operates on Route 25 in full electric mode.

A discussion of the risks related to Route 25 energy requirements can be found at section 5.3.2.

### 3.2.3 In-service Date

- o *What is the expected in-service date? How was it determined? How confident is BC Ferries of the in-service date? Will electrification cause any delay in delivery of any of the vessels?*

The overall schedule for both the terminal and vessel projects was developed from preliminary assessment of scope by the BC Ferries internal teams. Actual construction schedules will be confirmed following the detail design phase, once contractors are engaged. The tables below provide an overview of the projected schedule and major milestones.

### **ICEP Schedule: Terminal and Vessel Electrification**

The Program schedule is intentionally ambitious in order to maximize opportunities for post-COVID-19 pandemic economic recovery and, consequently, Government of Canada funding. The overall schedule will be refined once detailed designs for terminal and vessel modifications have been produced, and once Government of Canada expectations for completion of work are understood. Although the schedule appears ambitious, BC Ferries is confident that it is achievable based on current expectations for the terminal and vessel projects' scope:

|                   |                   |                                           |              |                      |            |
|-------------------|-------------------|-------------------------------------------|--------------|----------------------|------------|
| <b>Start Date</b> | December 10, 2020 | <b>Available for Use Date (Terminals)</b> | October 2024 | <b>Closeout Date</b> | April 2025 |
|                   |                   | <b>Available for Use Date (Vessels)</b>   | August 2024  |                      |            |

Electrification will have no impact on the scheduled delivery to BC Ferries of the four Island vessels under construction, nor on their entry into service. The vessel upgrades will require each of the Island class ferries to be taken out of service for a short period, during which time relief vessels will be available to ensure no interruption in service for BC Ferries passengers. BC Ferries will communicate with the affected communities once the details of any service modifications are finalized.

| <b>Milestone</b>                        | <b>Key Date</b> |
|-----------------------------------------|-----------------|
| External Funding Confirmed / Announced  | May / June 2021 |
| Vessel Detailed Design Complete         | August 2021     |
| Order Long-lead Items                   | November 2021   |
| Terminal Detailed Design Complete       | March 2022      |
| Vessel 1 Electrification Complete       | September 2022  |
| Construction Complete at First Terminal | February 2023   |
| Vessel 6 Electrification Complete       | August 2024     |
| Construction Complete at Ninth Terminal | October 2024    |
| Program Closeout                        | April 2025      |

Detail design will not commence until confirmation of external funding intentions are received from the Government of Canada. Implementation of vessel and terminal electrification will only commence once all detail design work has been completed to ensure that a coherent, integrated terminal and vessel system can be delivered.

### Stage Gates

The current schedule is informed by early concept designs and initial studies of technical viability and are subject to further change as Program details are matured. As new information is gathered and design work is completed, the budget and schedule estimates for the vessel and terminal electrification projects will be revised and updated. BC Ferries has planned for three “stage gates” where the Program’s progress and new information will be assessed to ensure that ICEP scope, schedule, budget and benefit projections remain aligned:

| Approximate Date | Information Expected                                                                                                                                                  |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| May / June 2021  | Intentions and amount for Government of Canada funding contribution; updated calculations of rate of return for BC Ferries’ contribution.                             |
| August 2021      | Vessel detail design complete; terminal preliminary design complete; updated cost estimates for ICEP implementation.                                                  |
| April 2022       | Terminal and BC Hydro detail design work and BC Hydro rate determined; updated estimates for ICEP implementation costs and for Net Present Value (“NPV”) calculation. |

#### o What are the consequences of a delay in the in-service or deployment date?

For both the terminal and vessel projects, any delay will push back the date at which BC Ferries will start to accrue benefits from Island class electrification. Both the terminal and vessel projects must be completed before the significant environmental and financial benefits will be realized.

If ICEP is significantly delayed, BC Ferries may lose the opportunity to secure the significant Government of Canada financial contribution. It is considered unlikely that significant Government of Canada funding would be available after 2021.

#### o What is Plan B if the program is delayed?

If ICEP is delayed, BC Ferries will continue to operate the Island class vessels on the same routes and from the same terminals. The vessels will remain configured as diesel-electric hybrid ships until BC Ferries can implement the vessel and terminal upgrades to support full battery operation.

### 3.2.4 Program Governance

The two separate projects that constitute the Program (vessel electrification and terminal electrification) will be managed in accordance with BC Ferries’ Project Governance Framework. A Program structure will be implemented to ensure vessel and terminal considerations are

progressed coherently. Each project will have separate project managers and budgets; however, a Program Manager will be responsible for managing and delivering ICEP overall, and will maintain oversight of the purpose and status of the projects within the Program.

The objective is for Program governance to be structured to avoid duplication and to ensure coordination between the discrete Program elements. In support of this approach, one steering committee, chaired by Program sponsors and inclusive of a Program owner, will provide oversight to ensure successful delivery of the Program.

### 3.3 Feedback and Engagement

The Company is focused on engaging with customers and communities on the type, scale, and frequency of services they want to see. This means giving customers and communities a voice in the decisions that affect them most, and continually evaluating the services provided to ensure BC Ferries is offering a reliable, efficient and affordable experience that aligns with the needs of those who travel.

*o Please provide any public feedback you have received on the program*

During preliminary outreach and engagement for Island class electrification, BC Ferries received over 40 letters of support from stakeholder groups, including municipalities, Ferry Advisory Committees, chambers of commerce, environmental groups, educational institutions and First Nations. This is a testament to the collective priority British Columbians place on protecting the environment through clean transportation initiatives. The letters of support, with an accompanying summary listing of the letters, are included in Appendix “C”.

#### 3.3.1 Stakeholder Engagement

A detailed stakeholder engagement process will be undertaken throughout the life of the Program and will be pursued in phases as it progresses. The first phase of engagement took place when developing the Program proposal for the Government of Canada. An initial stakeholder register was developed identifying key organizations, communities and local governments that will be impacted by the Program. Initial outreach was conducted to those identified on the register to inform them of BC Ferries' ambitions and to provide details on the conceptual scope, schedule and budget for the Program. Through these discussions, BC Ferries received letters of support that were shared with the Government of Canada.

Further engagement will continue once ICEP is funded and approved to proceed. This phase will include refining the stakeholder register and engaging in more detailed discussions with interested stakeholders on benefits and impacts that will be realized from the Program.

BC Ferries will continue working with stakeholders to identify opportunities for collaboration and to attempt to meet stakeholder expectations, where possible, as the Program is implemented.

### **3.3.2 First Nations engagement**

At the heart of engagement is BC Ferries' commitment to constructive and mutually respectful relationships with Indigenous peoples, based on reconciliation, enhanced collaboration and effective working partnerships. BC Ferries strives to involve Indigenous groups in the early stages of planning, project, and program development where the interests of Indigenous peoples may be affected. Engagement on the Program will allow for an open forum of information exchange, and assist BC Ferries in addressing concerns and interests of First Nations. Engagement will further support greater involvement and collaboration with First Nations on areas of mutual benefit and economic opportunity and support the development of new partnerships.

During development of the proposal for the Government of Canada, a First Nations register was created to identify the Nations along the coast that will be most impacted by the Program. Initial outreach was undertaken with selected Nations to inform them of BC Ferries' plans and to provide details on the Program concept. Through these discussions, BC Ferries received several letters of support.

As ICEP progresses, BC Ferries will develop and implement a comprehensive First Nations engagement plan.

## **3.4 Program Benefits**

The Company is committed to continued investment in the public interest in ensuring a safe, reliable, affordable and efficient ferry system for the future, and in maintaining the quality of life of people who live, work, and visit British Columbia. Electrification of the Island class would result in valuable benefits that directly correspond to this commitment:

### **3.4.1 Customer and Community Centred**

Both coastal communities and BC Ferries' customers are passionate about protecting the coastal environment and supporting clean economic and operational growth. As indicated in the Feedback and Engagement section above (section 3.3), the Company has received positive feedback and support from numerous stakeholders about the expected benefits of Island class electrification.

### 3.4.2 Prepared for the Future

- o Does the proposed capital expenditure show due consideration for the future?
- o Does the capital expenditure contribute to reduction in GHG emissions?

#### **Clean Futures Plan**

In Canada and internationally, the marine sector is focused on low carbon intensive energy and reducing GHG emissions. BC Ferries' *Clean Futures Plan* defines overarching GHG emissions targets for the Company. BC Ferries has publically committed to a 24 percent reduction in GHG emissions by 2030 (compared to 2008 levels). The *Clean Futures Plan* states: "it is our policy to continually seek among available energy sources the cleanest, lowest carbon-intensity option that can displace non-renewable diesel." Electrification of the Island class supports this objective. ICEP is expected to reduce annual GHG emissions by up to an estimated 20,045 tonnes of CO<sub>2</sub>e<sup>9</sup> from the status quo. This in turn potentially contributes up to 25 percent towards meeting BC Ferries' 2030 target of 24 percent (i.e., approximately six percent total reduction) from Fiscal 2008 GHG levels, assuming that GHG emissions for the rest of the fleet remain equivalent to emission levels in 2019.<sup>10</sup> Calculations of expected GHG emission reductions were prepared by an external consultant based on preliminary expectations for energy consumption.

#### **Provincial and Federal Targets**

Many current and future government policies, programs, and initiatives are centred on climate change mitigation and adaptation. At the federal level, the Government of Canada is proposing that Canada reach net zero emission by 2050, which is an extremely ambitious goal requiring close coordination between industry and regulators. Transition from fossil fuels to low carbon energy sources is a fundamental component of reaching net zero emissions.

Provincially, the Province published its CleanBC plan in 2018 detailing its long-term strategy to reduce GHG emissions and to stimulate economic growth and diversification in the energy sector. Marine transportation is discussed as one of the main components of the Province's "zero-emission vehicles strategy" with a focus on electrification, energy storage systems, and renewable energy. CleanBC has set a 40 percent overall target by 2030 (compared to 2007)

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<sup>9</sup> CO<sub>2</sub>e (Carbon Dioxide Equivalent) is a metric used to compare the emissions from various GHGs on the basis of their global warming potential by converting amounts of other gases to the equivalent amount of CO<sub>2</sub>. Global warming potential is derived based on the Third IMO Greenhouse Gas Study (2014).

<sup>10</sup> Notes: a) GHG emissions were calculated using the Island class shipbuilder's preliminary energy analysis and will need to be revised using operational data. The estimated reduction in GHG emissions is based on the Program versus the status quo (i.e., vessel electrification versus current hybrid diesel-electric vessels). b) Estimated percent progress to 2030 target assumes service provisions (including Island class vessels and all other vessels) remain constant in comparison to 2019. c) Six Island class ferries on four routes (18, 25, 19 and 23) running in battery-electric mode will potentially reduce annual GHG emissions by 95-97 percent on those routes (in comparison to the same ferries powered by diesel) and reduce air contaminants: particulate matter (PM), nitrogen oxides (NOx) and sulfur oxides (SOx) by 95-99 percent.

and increasingly stringent targets for 2040 and 2050. CleanBC has recently established sectoral-specific targets to further expand emissions reduction criteria, setting a 27 to 32 percent reduction target (by 2030) for the transportation sector. While further guidance on sectoral targets is expected from the Province, as noted above the upgrade of the Island class vessels to battery-electric operation will result in an approximately 6 percent reduction in GHG emissions across BC Ferries' entire fleet (compared to Fiscal 2008).

Achieving the above targets for 2030 and beyond requires action that balances innovation, cost, feasibility, and risk. Compared to other vessels in the fleet, electrification of the Island class presents an immediate opportunity to begin the transition away from higher carbon intensive fuels and a major step forward in BC Ferries' path to decarbonisation. As a result, implementing ICEP demonstrates strong consideration for future environmental requirements.

#### ***International Maritime Organization ("IMO")***

In 2018, the IMO adopted a strategy to reduce GHG emissions from ships by 50 percent by 2050 (compared to 2008) and reduce carbon intensity of international shipping. Progressive adoption of alternative energy such as electricity is one of the fundamental components of the strategy to reach long-term targets. Island class electrification would not only support IMO's objectives, but also contribute to a body of knowledge regarding vessel standardization and interoperability that are current barriers to wide-scale marine electrification.

#### ***Green Marine***

It is anticipated that ICEP will help BC Ferries to maintain its current environmental certification level in the Green Marine program. This program offers a detailed framework for maritime companies to first establish and then reduce their environmental footprint. Participants benchmark annual environmental performance and demonstrate continuous improvements by undertaking concrete and measurable actions that exceed regulatory compliance. In particular, Island class electrification is expected to help the Company improve the GHG Emissions performance indicator for the "ship owner" category of this program (assuming emissions from the rest of the fleet remain constant).

### **3.4.3 Significant Contributor to the BC and Canadian Economies**

ICEP would help to stimulate British Columbia's and Canada's economies by creating jobs in construction, material supply, local shipyards and equipment manufacturing. For example:

- The creation of meaningful and highly skilled jobs in the terminal construction, electrification technology and marine sectors during the build, operating and maintenance phases;

- Partnership opportunities with First Nations, local industry, BC Hydro and suppliers;
- Training and education in the marine and high technology electrification sectors, creating potential opportunities for First Nations, youth, women and other typically under-represented groups, and
- Continued reliable and resilient ferry service in support of businesses in coastal communities.

Electrification would increase electricity consumption and associated revenue for the Province, drawing on BC's valuable electricity surplus.

BC Ferries is committed to ensuring the highest possible percentage of Canadian content goes into the Program throughout its entire life-cycle. The overall strategy for ensuring Canadian content in the Program is:

- Using local contractors experienced in terminal construction;
- Partnering with BC Hydro for electrical infrastructure upgrades;
- Using skilled British Columbian electrical workers to upgrade the existing utility corridors and terminal charging capabilities;
- Contracting with local shipyards for vessel modifications; and
- Procurement of supplies from local companies, such as the batteries for vessel electrification.

The terminal improvements, electrification components and vessel modifications will all be completed in Canada, by Canadian companies. This brings high-value technical construction work to local industries as well as rural and remote communities.

In order to better understand potential contributions to the economy, BC Ferries engaged an independent third-party organization to undertake an economic impact assessment ("EIA"). The purpose of an EIA is to describe the likely impact of a planned investment on the region under consideration in terms of jobs, gross domestic product ("GDP"), income and taxes. The EIA suggests that the ICEP program would result in benefits of approximately:

- \$205 million impact on Canadian direct, indirect and induced output, including \$162 million for British Columbia;
- \$100 million increase to Canadian GDP, including \$78 million increase to GDP in British Columbia;

- \$11 million tax revenues generated; and
- 660 jobs created, including 510 jobs in British Columbia.

A summary of the Economic Impact Assessment report is included at Appendix “D”.

#### **3.4.4 Innovation and Standardization**

Island class electrification includes implementation of a common vessel electrification design and a rapid charging system that integrates into existing BC Ferries terminal infrastructure. This will include the design of high power electrical equipment on shore, installation of an automated charge connection system and a connection receiver on the vessel.

A standard solution for all Island class vessels and terminals will ensure that BC Ferries maintains interoperability and resilience (i.e., the capability to deploy any Island class vessels to other routes seamlessly). Standardization results in lower through-life costs through reduced maintenance, training and inventory costs, as well as in greater operational efficiency when compared to a fleet of non-standardized assets.

Although there are examples of electrified vessels in the marine sector, the technical solution for the Island class would prioritize interoperability and standardization of vessels and terminals at a scale not yet realized in the industry (see section 5.3 for a discussion of risk mitigation). This will help to develop significant expertise within BC Ferries and local industry, which will help position the Company for success with alternative energy options for future projects including, potentially, the new major vessels.

##### *o Does the proposed program include significant features that are innovative or untried?*

The electrification of Island class vessels supports BC Ferries' goals to be innovative and to continually improve operations. By its nature, ICEP will deploy state-of-the-industry technologies to bring about a step change in how the Company's vessels are powered and operated. Within ICEP, it will be necessary to seek innovative solutions to maximize benefits (including improvements to safety), simplify designs, improve efficiencies and ultimately to reduce capital and operating costs.

The technologies required to electrify the Island class vessels and their associated terminals are new to BC Ferries, and the technology for shore-based recharge of such vessels remains relatively immature, particularly on the west coast of North America. However, although the entire recharging system will be new for BC Ferries, the technologies themselves have been proven in service in comparable applications in other parts of the world. The innovative nature of the design for BC Ferries is therefore primarily linked to the requirement to integrate those

technologies aboard BC Ferries' vessels and in existing terminals. This is discussed more in section 5 on procurement and risk.

### **3.4.5 Financial**

#### ***Lower Cost Energy Source***

The Company anticipates the electrified Island class vessels will drive annual savings due to the lower cost of BC Hydro electricity compared to diesel and urea.<sup>11</sup> BC Hydro has a tariff schedule offering various electricity rates. At this time, BC Ferries has not made a selection on the electricity rate for the Island class. See section 5.3 for a discussion of hydro versus diesel fuel price differential risk.

#### ***Carbon Credits***

As noted in section 3.1.1, the Company has made arrangements on a confidential basis to receive the proceeds from the sale of carbon credits issued under the provincial Greenhouse Gas Reduction Act to directly offset capital costs of the program.

In addition, the Company considers there are opportunities to earn and monetize provincial or federal carbon credits generated by using a clean fuel source (electricity) that helps reduce GHG emissions and supports the transition away from fossil fuels. BC Ferries has the potential to generate credits under two regulatory frameworks: the provincial Low Carbon Fuel Standard; and the pending federal Clean Fuel Standard.

Under the existing BC Low Carbon Fuel Standard, BC Ferries is not a currently recognized fuel supplier for electricity and thus cannot currently generate credits. The Province is reviewing a legislative change that would redefine the point of compliance for electricity, which would potentially allow BC Ferries to claim credits by using electricity as a transportation energy source.

The federal Clean Fuel Standard is anticipated to come into force in December 2022. The Clean Fuel Standard is similar to the provincial regulation wherein fuel suppliers are mandated to decrease GHG emissions from fuel supply. Under the federal Clean Fuel Standard, BC Ferries is expected to be eligible to generate credits for electrification under the compliance category applicable to end-user fuel switching in transportation. Any credits earned under the federal Clean Fuel Standard program (if implemented as expected) are anticipated to be in addition to those generated from the provincial program, meaning that BC Ferries could benefit from both programs at the same time.

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<sup>11</sup> Urea is a consumable chemical compound. In the Island class, urea is injected into the main engines' exhaust stream (whenever operating) to reduce nitrogen oxide pollutants in the diesel exhaust.

BC Ferries' financial analysis for ICEP includes an assumption that certain BC Low Carbon Fuel Standard credits will be received. Federal Clean Fuel Standard credits are not included in the financial analysis. For a further discussion of assumptions regarding carbon credits and the financial analysis for the Program, see section 5.3.1.

### 3.4.6 Noise Reduction

Island class vessels are already amongst the quietest in BC Ferries' fleet and are significantly quieter than the older vessels they are replacing. Operating the vessels in battery-electric mode will have an impact on airborne (internal and external) noise emissions. Noise reduction achieved by implementing ICEP will have a positive impact on customers, communities and marine life in general.

## 3.5 Connecting Coastal Communities

### *o Is the proposed capital expenditure consistent with the requirements of the Coastal Ferry Services Contract?*

BC Ferries anticipates that the electrified Island class vessels will have a positive impact on how the Company continues to deliver all services required under the Contract.

The Program is consistent with the Contract's direction that "During each Performance Term, BC Ferries will look at innovative ways to deliver services that respond to the needs of the communities and customers it serves". It is also consistent with the Act, which indicates, "ferry operators are to be encouraged to be innovative and to minimize expenses without adversely affecting their safe compliance with core ferry services".<sup>12</sup>

### *o How does the proposed capital expenditure support the government approved long term vision for the future of coastal ferry services?*

In September 2020, the Province released a summary of feedback on its proposed Coastal Ferry Vision. Survey respondents expressed strong support for all four themes that emerged during the first phase of engagement, indicating that coastal ferry services should:

- support efficient end-to-end travel of people and goods;
- be equitable and accessible;
- mitigate and be responsive to climate change; and
- reflect the values of coastal communities.

<sup>12</sup> See, respectively, the Coastal Ferry Services Contract, paragraph 1 under "Core Service Levels" in Appendix 1 of Schedule "A"; and section 38 (1) (d) of the *Coastal Ferry Act*.

ICEP will help the province achieve its GHG emission targets and will not impact BC Ferries' ability to continue to meet or exceed core service levels, in alignment with the public interest as laid out in section 38 (1) (a.1) of the Act, and as described in section 3.4.2 of this Application.

### 3.6 An Investment in the Public's Interest

- o Is the proposed capital expenditure in the public interest? Specifically, does the capital expenditure ensure, or enhance, a ferry service that remains safe, reliable and affordable?*

The Program has been developed with a view to the public's interest by ensuring that the planned investment ensures, or enhances, an environmentally sustainable ferry service that remains safe, reliable and affordable. This is discussed in more detail below:

#### 3.6.1 Safety

Safety is BC Ferries' highest value and this Program reflects the Company's continued focus on ensuring the safety of the Company's employees and customers by:

- Making sure that the design of Island class vessel electrification and of terminal modifications will meet all safety and other regulatory requirements;
- Automating, to the extent possible, the electrical recharging process that must occur during vessel loading and unloading, ensuring that crew members retain their focus on their own, and passenger safety; and
- Increasing crew familiarity through the use of standardized vessels and equipment.

Terminal and vessel crew will receive necessary training to properly and safely operate and maintain all new infrastructure related to the electrification of the routes.

#### 3.6.2 Efficiency and Affordability

BC Ferries operates efficiently and invests prudently in assets and infrastructure. This Program will enhance efficiency and affordability, reducing pressure on fares, by:

- Taking advantage of potential external funding opportunities, including from the Government of Canada;
- Investing in electrification that will result in anticipated annual savings based on the lower cost of electrical energy from BC Hydro in comparison to costs of energy from diesel fuel;
- Receiving revenue through the monetization of provincial, and potential federal, carbon credits through the use of electricity as opposed to diesel;

- Realizing the continued benefits of interoperability and standardization; and
- Careful project and contract management, including proactive risk management (see section 5) and oversight of terminal and vessel work to ensure the delivery of high quality projects.

### 3.6.3 Reliability and Resiliency

Customers and communities depend on BC Ferries to provide reliable and resilient service, and to connect them to people and places important in their lives. This Program supports this objective through:

- Vessel electrification standardization that enables flexibility in vessel deployments, which in turn increases reliability of services for the customers and communities that BC Ferries serves;
- Vessel recharge systems designed to ensure that sufficient energy transfer can occur during scheduled in-berth periods, without introducing new requirements that would adversely impact scheduled sailings; and
- Use of the vessels' existing diesel generators during power outages or other events that impact shore charging availability. The upgrade of the Island Class vessels does not include removal of the diesel generator sets that are already onboard. The existing diesel generators will be retained as redundant power plants, to increase vessel range, and to ensure reliability and availability by guarding against service interruptions in the event of electrical power failures (i.e., blackouts) ashore.

## 3.7 A Prudent Investment

### *o Is the proposed program reasonably required?*

The Island class vessels were designed to transition to all-electric propulsion when technologically and financially supported. Appropriate levels of third party funding (provincial and federal), which is now potentially available, will create the conditions necessary to satisfy this requirement.

The potential funding would enable BC Ferries to implement Island class electrification with minimal impact to its long term capital plan. This is a near-time opportunity to use clean, renewable energy for propulsion, moving BC Ferries closer towards decarbonisation of the ferry service to achieve corporate and regulatory targets for reduced levels of carbon emissions. BC Ferries cannot move toward achieving Provincial emission-reduction goals unless ICEP, and similar comparable programs, are completed.

In addition, this Program is consistent with coastal communities' and BC Ferries' customers' desires to protect the environment and to operate a sustainable, environmentally supportive coastal ferry system. It helps reduce upward pressure on fares due to anticipated annual savings based on the use of electricity versus traditional fossil fuels, and due to revenue generated through the monetization of awarded carbon credits. It will significantly benefit the environment and stimulate the economy at the coastal community, provincial and national levels.

*o Does the proposed capital expenditure indicate a wise use of resources?*

Island class vessels were designed and built to be upgraded to full battery-electric operation and ICEP fulfills that objective.

Funding from the Government of Canada, and other external programs, provides the opportunity to implement ICEP and progress the collective objective to reduce carbon emissions in a manner that does not see the full cost being borne by the fare payer. With the anticipated external funding contribution, BC Ferries expects to improve the rate of return on investment for this Program and achieve a net zero NPV, as discussed in section 4.

In terms of the use of *natural* resources and the coastal waters through which BC Ferries' vessels travel, the employment of zero emission electrification is preferable over carbon intensive technologies.

*o Does the proposed capital expenditure demonstrate good judgment, based on wisdom, experience and good sense?*

ICEP is an opportunity for BC Ferries to take definitive climate action, reflects community expectations and public support regarding a low carbon future, and is consistent with the Company's efforts to meet emerging regulatory and provincial GHG emission targets. The implementation of an electric ferry network along British Columbia's coast creates meaningful employment, supports innovation in the delivery of ferry services, allows for technology transfer in the industry and ensures the coast remains pristine for generations to come.

As discussed in section 3.4.4, the Program is innovating by taking advantage of state-of-the-industry technologies to bring about a step change in how BC Ferries' vessels are powered and operated. This innovation will be adopted using the Company's extensive experience in terminal and vessel refit and construction projects, along with the extensive knowledge provided working with BC Hydro, contractors and vendors throughout the project. All lessons learned from completed marine electrification projects during ICEP design and implementation will add to the collective body of knowledge for all involved.

## Section 4 – Financial Analysis

### 4.1 Options

Two options were considered for the Program:

- **Option 0 – status quo**

Option 0 refers to the “Status Quo” of operating the first six Island class vessels in their current diesel-electric hybrid configuration from the available and planned berths, without making any modifications for shore-to-ship recharging that would allow for full battery-electric operations.

- **Option 1: Island Class Electrification**

This option involves implementing all terminal and vessel work necessary to electrify routes 18, 19, 23 and 25.

The Company prefers Option 1 – full electrification of the Island class vessels and associated terminals – and for the reasons described in this Application, believes it would best serve the needs of coastal communities and the customers on routes 18, 19, 23 and 25. The options are discussed in more detail below.

### 4.2 Options Analysis

A 25-year NPV financial analysis compares a status quo option to the proposed electrification option. This duration covers the estimated 20-year lifecycle of the electrification assets once they are in-service.

- o *What are the total estimated capital expenditures by year by option?*

**Option 0 – status quo**

ICEP would not be implemented on the timelines proposed. As a result, there would be no new capital expenditures incurred, and no projected changes to the operating costs for the Island class vessels. While the quarter-life upgrade for these vessels falls within the 25-year outlook of the financial analysis, it is assumed that BC Ferries will be under no obligation to convert the six vessels and associated terminals to fully electric at that time. As such, the financial analysis for the status quo option does not include costs to convert the vessels and terminals to fully electric operations over the 25-year period of the financial analysis.

**Option 1 – Island Class Electrification**

The Program will include a \$ < > million capital budget and \$ < > million in operating funds, divided between the projects for vessel electrification and terminal electrification. A contingency amount has been applied to each element of the Program (vessels and terminals). The operating

budget will cover initial research and feasibility work as well as employee training costs once the assets are brought into service.

*o What is the estimated IDC that will be capitalized?*

It is currently assumed that no Interest During Construction (IDC) will be capitalized as part of this Program. IDC does not form any part of the Program budget. BC Ferries can provide further details if requested.

*o What is the rationale for the discount rate used?*

An annual escalation for inflation of two percent has been applied to all capital and operating costs and is based on the median of the Bank of Canada's target inflation range. A discount rate of five percent is used for the NPV analysis as it is more in line with the current cost of long-term debt. Other discount rates have been sensitivity tested in the financial analysis. A higher discount rate negatively impacts the NPV of this Program as it decreases the value of future projected benefits.

*o How was the contingency amount determined?*

The financial estimates for the Program (i.e., for both the vessel and terminal electrification projects) are based upon conceptual designs and assumed scope of work. Estimates have generally been informed by the experience and expertise of BC Ferries' in-house project managers and technical subject matter experts, and advice and input from consultants and other external parties such as BC Hydro.

A relatively large Program contingency is required to account for budget estimates based on preliminary designs for electrification technology. In order to determine the appropriate contingency requirement, project managers for the vessel and terminal projects considered appropriate brackets of uncertainty for each work package of the cost estimate for the respective projects. The brackets represented anticipated accuracy ranges for budget elements for each project, each of which had a base estimate (or most likely cost). The accuracy range was assumed to follow a Normal Distribution, and an averaged uncertainty was then applied to the base estimate to produce a standard normal probability distribution and probability density curves for each project. Sufficient contingency was included for each of the projects to allow for a cumulative 95 percent confidence of affordability based on the assumed scope of work and implementation concept. Contingency amounts were applied to the projects as a whole rather than to individual line items within the budget estimates.

The methodology used to determine contingency amounts is aligned with standard industry practice<sup>13</sup>. The Company chose this methodology for ICEP because it was considered the best way to capture the potential variability in the program budget, and to allow business decisions to be made with appropriate risk information. Completion of the following work packages will improve confidence ranges for significant portions of the overall cost estimate:

- o Vessel detailed design (August 2021) – will improve range of confidence for vessel estimates;
- o Terminals preliminary design (August 2021) – will improve range of confidence for terminal construction estimates;
- o Terminals detailed design (March 2022) – will further improve range of confidence for terminal construction estimates; and
- o BC Hydro detailed design (April 2022) – will improve range of confidence for BC Hydro portion of terminal construction cost estimates.

As the confidence ranges are improved as described above, BC Ferries will progressively verify continued Program affordability prior to committing major capital expenditures. Despite these preparations, there is a risk that certain cost assumptions may require subsequent amendments upon completion of the final detailed designs, with a commensurate change in the projected capital expenditure for the Program.

- o *Has a sensitivity analysis been done on key assumptions, such as costs, revenues, discount rate, timing and inflation?*

As several key assumptions are susceptible to change/volatility, several sensitivity tests were undertaken. Sensitivity tests were performed on the fuel price differential (cost of diesel versus cost of hydro), fuel consumption levels and the monetized value of the BC Carbon Credit, which would affect the Part 3 Agreement (described in section 3.1.1) as well as the anticipated annual monetization benefit.

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<sup>13</sup> The accuracy range applied in the program budget estimates was drawn from the Canadian Construction Association "Guide to Cost Predictability". The following articles and papers are representative in describing the methodology to apply the cost range probability to determine the program contingency amount.

- "[Decision Analysis in Projects – Expected Value: The Cornerstone](#)", John R. Schuyler, Project Management Institute White Papers, 1993;
- "[Contingency – Are You Covered?](#)", John Moreci, Project Management Institute Conference Paper, 2012;
- "[Quantifying Risk – Measuring the Invisible](#)", Werner G. Meyer, Project Management Institute Conference Paper, 2015;
- "[The Art of Guesstimation: Estimates are Probability Distributions](#)", Scott Ambler, Disciplined Agile Applied Blog, 2020;
- "[Three-Point Estimating and PERT Distribution](#)", Project-Management.info website post; and
- "[How Cost Contingency is Calculated](#)", Shohreh Ghorbani, Project Control Academy website post, 2017.

- o *Is the net present value analysis done on a lifecycle basis for relevant comparison of options?*

Yes, the NPV analysis for both the Status Quo option and ICEP used the same lifecycle basis. For both options, the lifecycle of the vessels and terminals was analyzed over a 25-year NPV. This duration covers the estimated 20-year life of the electrification assets once they are in-service. For the status quo option, it is assumed there is no requirement to perform any of the vessel or terminal electrification scope within the 25-year outlook.

For the preferred option of implementing ICEP, the Program has assumed that sufficient Government of Canada funding will be available in order to ensure that the Program NPV over the 25 years will be \$nil.

| <b>Option 1: ICEP</b>      |                |
|----------------------------|----------------|
| Total Project Expenditure: | \$ < > Million |
| 25-Year NPV:               | \$nil          |

- o *Is there an allowance in the estimate for inflation from the date of acceptance of a proposal to the completion date (escalation clause)?*

Yes. Cost estimates for the work include an allowance for inflation.

- o *Does BC Ferries intend to capitalize any of its own internal costs with respect to the capital expenditure?*

Yes, internal project management team labour will be capitalized for both the vessel and terminal projects. Internal labour will be utilized throughout the life of the Program for purposes such as preliminary and detailed design development, construction oversight and general project management. It is estimated that at least four full time BC Ferries employees will be assigned to project management and supporting roles in order to implement the Program.

- o *What are the estimated maintenance costs for each option?*

While there is potential for maintenance savings associated with the electrification of the vessels, there are no material changes anticipated to the regular, annual or periodic maintenance costs as a result of this Program, nor for the quarter-life or mid-life vessel upgrades. Although the diesel generators on the vessels will receive significantly fewer operating hours, they will remain on the vessels and operate periodically as required or as backup and will continue to require maintenance. There is also potential for incremental maintenance to be incurred on the vessels and terminals associated with the electrical upgrades. In general, any variations in maintenance cost between the Status Quo and ICEP options are expected to be minimal, and in all cases will not impact the NPV in any material way.

It is assumed that the batteries installed on the vessels have a useful life of approximately six years. The estimated replacement costs for the batteries have been included in the financial analysis.

The 25-year outlook of the NPV covers the 20-year useful life of the assets. It is expected that the Program will not have any material impact on the costs associated with the quarter-life of the vessels. At the same time, it is assumed that the electrification of these vessels will have no material impact on the costs associated with the mid-life or three quarter-life upgrades for these vessels (the timing of which are scheduled to occur outside of the 25-year financial analysis).

*o What are the estimated operating costs for each option?*

The ongoing vessel and terminal labour costs are assumed to be the same for both options.

Under the preferred option, annual fuel savings of approximately \$ < > million per year are anticipated. This is based on an estimated consumption savings of approximately < > million litres of diesel and < > million litres of urea per year, replaced by electricity consumption of approximately < > million kWh per year. Further discussions on the risk surrounding these price and volume assumptions are found in Section 5.3.1.

*o Vessels and Terminals: Does the vessel/terminal design have any impact on labour costs? If so, how?*

The only anticipated impact on labour costs will be the time required for training BC Ferries' employees (shipboard chief engineers, and terminal operations and terminal maintenance staff) to safely operate the new systems. These training costs are included in the overall Program budget, as described above.

## 4.3 Capital planning

- o Is the proposed capital expenditure provided for in a board approved capital plan?*
- o Is the total cost different in any respect from what was approved in the capital plan?*
- o Does the scope of the proposed capital expenditure differ in any respect from what was included in the latest capital plan approved by the Board?*

In February 2021, BC Ferries' Board of Directors approved the Fiscal 2022 Twelve-Year Capital Portfolio, which included a combined forecast capital cost of this program of \$ < > million, offset by assumed external funding of \$ < > million, for a net assumed cost in the Portfolio of \$ < > million.<sup>14</sup> The Program scope described in this Application is consistent with the scope of work covered by the Twelve-Year Capital Portfolio.

<sup>14</sup> The Program is included in BC Ferries' 12-year Capital Plan approved by BC Ferries' Board of Directors in February 2021 but was not included in the submission of September 28, 2018 to the Commissioner for performance term five (April 1, 2020 – March 31, 2024).

Since the Board's approval of the capital portfolio in February 2021, BC Ferries has refined cost estimates and re-evaluated the amount of external funding required to achieve a net zero rate of return on investment. This was reflected in the business case, which was subsequently reviewed and supported by the Board in April 2021. Accordingly, the Company is now proposing to invest \$< > million (and \$< > million in operating funds), consisting of \$< > million in BC Ferries' capital funds and the balance in external funding.

The small change in projected Program costs before external funding was related to additional costs included for vessel capital spares, additional costs to deliver First Nations engagement activities, revised assumptions regarding requirements for electrical infrastructure and a more consistent approach for calculating contingency requirements.

The change to the assumed net cost of this project (after external funding) between the February Capital portfolio at \$< > million versus the Board supported business case at \$< > million was directly associated with the business case analysis refining of future cost and benefits projections and the external funding required to yield a zero NPV.

*o Will the program have an impact on future vessels and terminals in the long-term capital plan?*

ICEP has the potential to impact future vessel projects. Most notably, BC Ferries intends to conduct a major procurement before the end of this decade in order to acquire new major vessels ("NMV"). The Company's decarbonization aspirations have led to considerable interest in alternative technologies, such as battery-electric operation, for the NMV. Implementing ICEP will enable the development of significant expertise within the Company and local industry, which will help position BC Ferries for success in alternative energy options for NMV and future projects.

In addition to the NMV project, BC Ferries has a longer term plan to acquire additional Island class vessels in the 2030s. Implementing ICEP now will allow the next series of Island class vessels to be built and delivered already configured for full battery-electric operation. Such a decision would have a consequential impact on terminal development plans since shore-to-ship recharging systems will be required to achieve the benefits of full battery-electric operation at additional locations.

#### **4.4 Price Cap Implications of Preferred Option**

*o Is the total cost different in any respect from what was indicated in the BC Ferries' last submission to the Commissioner for price cap setting purposes?*

The capital and operating costs of the ICEP were not included in the previous submission to the Commissioner for price cap setting purposes. However, the financial impact of the Program to

BC Ferries is significantly mitigated by available external funding opportunities. The overall estimated impact to the price caps is described below.

- o *Explain any impact on future price caps.*
- o *What is the estimated impact of the proposed capital expenditure on future price caps assuming no change in non-passenger related revenues?*

Using the proposed timeline, a forward-looking analysis was conducted to estimate the impact on future price caps through Fiscal 2045 to upgrade four routes to electric operations through the electrification of six Island class vessels and up to nine terminals.

This analysis reflected a total capital and operating cost of \$< > million, offset by external funding of \$< > million, for a net Program cost of \$< > million. It also reflected an estimated reduction in annual operating costs as diesel fuel consumption will be replaced with lower cost electric power, along with the opportunity to generate and monetize carbon credits as a result of replacing diesel with electric consumption.

Upon completion, and all other things held constant, over the 20 years of Fiscal 2025 through Fiscal 2045 the analysis indicates a nil impact to required average annual regulated tariff revenue. During the first six years, ending Fiscal 2030, mainly attributable to the forecasted benefit of the provincial carbon credit program, an approximate decrease of 0.025 percent per annum in the price cap will be required. This will be followed by an approximate 0.010 percent per annum increase through Fiscal 2045 based on the assumption that the benefits from the provincial carbon credit program will cease.

- o *Does the proposed capital expenditure provide good value, at a moderate and fair price? Is it affordable?*
- o *Has it been demonstrated that the proposed capital expenditure would not reasonably be considered excessive?*

The Company submits that this Program represents good value. The opportunity for a sizeable contribution of external funding from the Government of Canada and the Province (Part 3 Agreement) delivers the potential to make significant gains towards reducing harmful emissions while still achieving a net zero rate of return on our investment, and nil impact to required future price caps through Fiscal 2045. The benefit of reduced emissions is highly valued by BC Ferries' customers and diverse stakeholder groups, as indicated by the exceptionally strong early support for the Program noted in Appendix "C".

The Program budget is developed with high confidence of affordability, based on relatively conservative estimates, suitable contingency, and high anticipated levels of external funding support. (If external funding is not secured as expected, BC Ferries will not be making any commitment to proceed.)

- o *How were the capital, operating and maintenance cost estimates derived? Entirely with BC Ferries' staff or was there an external review?*

To develop the capital cost estimates, an external engineering consulting firm was tasked to produce a concept design with Class D cost estimates for the terminal engineering portion of the Program. The external design engineer developed basic concept layouts for terminals from which cost estimates were produced. BC Ferries' terminal engineering subject matter experts adjusted the estimates based upon refined assumptions regarding scope of work, and project manager experience with comparable work. BC Hydro provided initial estimates of approximate costs to complete upgrades to their infrastructure, which were added to the totals for the modification costs for each terminal.

For the vessel project, the capital cost estimate was built up from a known scope of work by BC Ferries' in-house engineering staff and experienced ship repair project managers. Cost assumptions were made for known material, commodities, work packages and labour requirements. The cost estimate was corroborated by similar work conducted independently by the ship designer.

For both the vessel and terminal projects, capital contingency was calculated as described in section 4.2., and applied to the individual project estimates.

Operating costs for the Program reflect training delivered to BC Ferries personnel in the operation and maintenance of the new equipment. Cost estimates were developed based on recent experience on BC Ferries projects of comparable complexity.

Annual maintenance and operating costs for the electrified vessels and terminals, once the Program completes and the assets enter service, were calculated as described in section 4.2.

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## Section 5 – Procurement and Risk

### 5.1 Introduction

- o Outline how the Proposed Project will be procured and how major risks will be managed.*

The Company has in place a vessel replacement program for all new vessel construction projects and to manage certain major conversion projects. The vessel replacement program reports functionally within the Shipbuilding & Innovation division and draws on expertise across the Company, as well as from external subject matter experts. The vessel replacement program team will manage the vessel electrification project.

The terminal electrification project will be managed by the Company's engineering department which is a part of the Operations division. The terminal engineering section has extensive experience managing complex terminal upgrade projects.

An initial overview of certain key risks to the Program, together with planned mitigation strategies, is provided below. The risk mitigation strategies for the latter phases of the Program will receive enhanced focus as the Program proceeds.

The Program follows recent successful major conversion and terminal upgrade projects and will incorporate best practices and lessons learned from those projects. This experience will serve to mitigate risk as the Company will implement and follow certain processes that have been tested and proven successful in the recent past.

### 5.2 Procurement Options and Process

- o What are the procurement options and process for the vessels and the terminals?*

#### 5.2.1 Procurement Process

The procurements for the vessel and terminal electrification projects under this Program will be managed under separate processes and contracts. However, as discussed in section 3.2.4, Program Governance has been structured with a single Program Manager and one steering committee, enabling the procurement processes for both vessels and terminals to be aligned.

#### **Vessel Upgrades**

The procurement process for the vessel upgrades would follow a similar structure to what has been completed in previous vessel upgrade projects. It is intended that the vessel design will be completed prior to commencing the procurement process for the vessel upgrade portion of this Program. Following a "Request for Expression of Interest" ("RFEOI"), interested short-listed shipyards will receive a formal "Request for Proposal" ("RFP") package. Responses to the RFP will be reviewed by an internal BC Ferries team comprised of senior technical and operational

staff. The finalist shipyard(s) will be selected for final negotiations with contract award, subject to final approval by the Company's Executive Management Committee and Board of Directors. It is intended and preferred that a single contract be awarded to one successful shipyard to complete the upgrades to all six Island class vessels, in order to gain efficiencies and to continue to ensure BC Ferries' corporate objective of fleet standardization is at the forefront.

### ***Terminal Modifications***

As mentioned above, the terminal modifications portion of this Program will follow a typical procurement process for BC Ferries major terminal projects. It is expected that this procurement will follow a "design-bid-build process", where 100 percent of the detail design is to be completed; with open tender packages for competitive lump sum bids being issued for the completed designs.

Given the large scope of the terminal modifications, it is envisioned that the work will be split into individual civil, electrical and marine work packages.

The options and strategies below are being considered and will be implemented based on the assessment of best value and lowest risk to the Company:

- Having a single general contractor rather than separate contractors for the work packages;
- Splitting the work by terminal or having a single contract for the work across several or all of the terminals;
- Incorporating early contractor involvement during the design phase; and
- Pursuing construction management contracts with target pricing as opposed to lump sum bids.

### **5.2.2 Program Timelines**

The timelines for the Program are described in detail in section 3.2.3 of this Application. BC Ferries expects that the actual implementation schedule for ICEP will be adjusted and refined once detailed designs have been completed for both the vessel and terminal electrification projects, and also once particular expectations attached to Government of Canada funding contributions are known. In addition, and as mentioned above, BC Ferries has yet to issue any requests for detailed proposals from potential contracted service providers. The Company expects that any proposals to implement electrification work will outline a detailed schedule with major milestones listed for each vessel being upgraded, or each terminal being modified, and could differ based on each proponent's resources and overall approach to project

implementation. For these reasons, it is likely that the Program schedule described in this Application will change as more information is gathered during the next stages of Program development. Additionally, the current Program schedule includes a margin of six months of schedule contingency, to mitigate (or buffer) the risks identified or associated with implementation.

Information on the risks and mitigation strategies associated with the project timeline are provided in section 5.3.2.

## 5.3 Risk Identification and Mitigation

- o Describe any major risks that could affect the project's success, costs and timely implementation.*
- o Describe mitigation strategies for major risks that have been identified.*

An overview of the key Program risks, together with planned mitigation strategies, is provided below. The risk mitigation strategies for the latter phases of the Program will receive enhanced focus as the Program proceeds. A more robust risk management plan and process will be developed for the Program if sufficient external (Government of Canada) funding is secured to allow for implementation.

### 5.3.1 Financial Risks

- o What are the major [financial] risks? Have they been taken into account in the NPV analysis?*

#### **External Funding**

The viability of the Program is dependent upon the receipt of sufficient external funding (i.e., Government of Canada grant) to proceed. To mitigate the risk of external funding shortfalls, a lobbyist firm has been engaged to assist BC Ferries' efforts in acquiring funding, and letters of support have been received from a cross section of coastal community, municipal, First Nations and other stakeholders. BC Ferries and its lobbyist will continue to demonstrate the benefits of the Program to the Canadian government. If the Company is unable to secure adequate funding for the Program, then Program deferral will occur until it can be supported by the capital plan, or until another funding opportunity presents itself.

#### **Future Cash Flow Assumptions**

The financial analysis requires price and volume assumptions to be made for diesel, urea, electricity, emissions credits and battery replacement costs over an extended period of time (25 years) and for four of six vessels that are not currently in operation. There is uncertainty associated with these future cash flow assumptions that can have a material impact on the financial analysis (both positive and negative). The Company believes it has been conservative

in estimating these future costs and benefits, while also performing sensitivity analysis around key assumptions.

### ***Volume Assumptions***

Currently, BC Ferries possesses and operates two Island class vessels. These vessels have limited historical operational data, as they have been in operation for less than a year. The four vessels expected to arrive later in Fiscal 2022 will operate on a two-vessel per route basis, which differs from the current one-vessel per route operation. BC Ferries has had to make volume assumptions for annual diesel and urea consumption for all six vessels if they were to operate on hybrid-diesel (status quo) versus fully electric operation. These volume assumptions impact the estimated savings on commodity costs as well as the volume of potential carbon credits to be received.

The assumed energy requirements to run the vessels as fully electric are based on preliminary estimates provided by the shipyard, and have been reviewed internally. A detailed energy analysis is being performed externally to determine more accurately the energy requirements for the six vessels on the four routes. The results of this energy analysis, expected by the end of June, could impact the forecasted fuel savings and expectations for carbon credits.

### ***Hydro Rate Assumption***

BC Ferries anticipates annual savings based on the comparatively lower cost of BC Hydro electricity when compared to current diesel and urea costs. At this time, there are at least four possible electricity rates available under BC Hydro's tariff schedule. For the purpose of modelling the Program financial analysis, BC Hydro's Shore Power tariff rate has been assumed. This is an interruptible service rate, which is not eligible for any BC Hydro contribution towards initial interconnection costs. While this is assumed to be the most applicable rate at this time, BC Ferries will continue to examine all alternative rate structures with BC Hydro before making any final commitments. In general, other alternative rate structures tend to involve higher rates but provide different benefits, such as uninterruptible service and a level of contribution towards initial interconnection costs.

### ***Diesel, Urea and Fuel Price Differential Assumption***

Similar to the hydro rate assumption, a forecast cost of diesel and urea is required to prepare an estimate of the annual financial savings associated with converting the vessels to fully electric operations. The financial analysis involves what is believed to be initial conservative assumptions on the difference between the commodity costs that are then inflated at an assumed rate of two percent per year. The future costs of diesel and urea relative to the cost of hydro (fuel price differential) becomes increasingly uncertain over time. The Company performed sensitivity analyses on the fuel price differential to provide context on this uncertainty.

### **Carbon Credits**

As described in section 3.1.1 of this Application, provincial legislation currently awards low carbon credits to fuel producers (i.e., BC Hydro) instead of fuel users (i.e., BC Ferries). The Ministry of Energy, Mines and Low Carbon Innovation is reviewing provincial legislation that assigns the point of compliance (i.e., the entity that is eligible to receive credits) to earn low carbon fuel credits on the use of electricity. It is expected that legislation will be changed so that the Company will be able to earn credits directly on its use of electricity. A ruling on changes to legislation is expected spring 2021.

If favourable changes to the legislation do not occur, BC Ferries will not be eligible to receive the full financial benefits under the governments low carbon fuel credits program from monetized credits and the financial viability of the Program could be impacted. To mitigate this risk, BC Ferries has already entered into discussions with the electric fuel producer (i.e., BC Hydro) and has confidence that the Company – as the fuel user - will be able to benefit from the low carbon credit fuel credits program, regardless of which organization is awarded the credits.

In addition, there are several key assumptions in estimating the annual benefits from monetization of credits, such as the volume of carbon credits received, price of carbon credits and the duration of the carbon credit program. Currently, as the carbon credit program is set to end in 2030, the Company has taken a conservative approach and assumed that the program will not be extended or replaced at that time. Additionally, although current market prices are significantly higher, the Company has assumed that the average price of the carbon credits between now and 2030 will be at the average price per credit for 2019.

### **5.3.2 Design and Construction Risks**

- o *Vessels and Terminals (if applicable): Will BC Ferries require the shipyard/contractor to bear the design and construction risk?*

#### **Multiple Program Participants**

In addition to the need for significant external funding from the Government of Canada, the success of the Program is reliant upon the successful post-pandemic participation of BC Ferries' partners, vendors and contractors:

- BC Hydro for electrical distribution interconnection ashore;
- Shipyards for vessel upgrades;
- Vendor for battery supply and system integration; and
- Local contractors for terminal upgrades.

BC Ferries will address these risks through careful project management, including by assigning an experienced project manager to each of the terminal and vessel projects within the Program. ICEP project managers will oversee selection of Program partners, vendors, and contractors that demonstrate an ability to align on Program scope, schedule and budget. Each project will develop a quality management plan and stakeholder management plan, consistent with BC Ferries policy and project management best practice. Early engagement with major suppliers, such as BC Hydro, has already commenced in order to ensure the successful integration of partner contributions during implementation.

### ***Program Delays***

The Program will take more than two years to complete, which introduces some complexity due to the length of the planning and execution phases. ICEP project teams will follow project management guidelines and processes to ensure Program implementation follows the schedule outlined in this Application, modified as appropriate based on actual designs, and all reasonable efforts will be made to adhere to the proposed schedule. Robust Program and project planning will be undertaken to develop comprehensive documented project plans to manage scope, schedule, budget and quality. In addition, the Program will be overseen by a governance committee to ensure that any emerging issues can be addressed in a timely fashion (see section 3.2.4.).

### ***Schedule Pressures***

The overall Program schedule has been developed to enable Program completion at the earliest possible date. This schedule will be confirmed through negotiations with the Government of Canada in the event a grant is made available. The compressed Program schedule will require that more discrete activities overlap, with the result that management resources will be overtasked with consequential impact to project and Program performance.

To mitigate this risk, BC Ferries will follow all project management guidelines and procedures to ensure adherence with the Program schedule. BC Ferries' project teams will work with all contractors and vendors to ensure they can meet project objectives and schedules outlined in the Program scope. As noted above, some schedule contingencies have been included and a single Program Manager and steering committee will also oversee the Program. Moreover, the actual schedule will be finalized once detail designs have been completed for vessel and terminal modifications, and once Government of Canada expectations for timeline, if any, are understood.

### ***New Technologies***

The technologies required to electrify the Island class vessels and their associated terminals are new to BC Ferries. The technology for shore-based recharge of electric vessels like the Island class remains relatively immature, particularly on the west coast of North America. While

BC Ferries does have battery banks installed on the two operational Island class vessels (*Island Discovery* and *Island Aurora*), there is limited corporate experience operating these vessels in battery-only mode. BC Ferries does not have any vessels within the fleet that are equipped with either the volume of batteries or the other onboard technologies necessary to operate exclusively on electricity. In addition, currently there are not any BC Ferries terminals outfitted with the infrastructure required to charge electric vessels.

The Company will address these concerns through a combination of research, careful planning and appropriate design. Vessel charging technology exists (at smaller scale) elsewhere in the maritime industry and BC Ferries will continue to collaborate with partners with expertise in infrastructure, such as BC Hydro, as well as others who have greater experience successfully implementing these technologies, including battery vendors. BC Ferries' technical experts have conducted research into the technologies available in the market and will be able to help identify the available solutions that will minimize the risk of acquiring and implementing relatively new technology.

The integration of technologies described above may be new to BC Ferries, but have been successfully adopted in other jurisdictions, such as in Northern Europe. ICEP teams have already commenced dialogue with colleagues in Europe to begin an exchange of information that will further reduce the risk of introducing new technologies to the Company. Another mitigation is the plan to retain the diesel generators, so that in the event of any delays or technical challenges with the new charging system, the vessels can remain in operational service using diesel power.

Finally, BC Ferries will ensure that vessel crews, terminal workers, and other subject matter experts and employees are fully trained and familiarized with the new technology before it is implemented.

#### ***Route 25 energy requirements***

Due to particular service parameters of route 25, the vessel operating on this route may need to operate as a plug-in hybrid vessel. If this proves to be the case, as noted in Section 3.2.2, the Company may consider amending ferry sailing schedules to allow for more time in berth (to recharge) or slower transit speeds (to reduce energy requirements), or may elect to operate the vessels in hybrid mode, as and if required, to maintain schedule. Such decisions will be evaluated and taken once energy requirements have been established for all routes.

#### ***Weather***

There is a risk that the terminal construction may be subjected to seasonal constraints on project execution due to adverse weather conditions that will impact construction timelines. Preliminary schedules have been developed with margins that provide for some contingency in the planned

construction dates, and budget contingencies will help offset costs in the event of seasonal delays in work.

### ***Permitting and Consultation***

Terminal work will require permits and consultation, including with First Nations, municipalities, and government and environmental regulators. BC Ferries does not control the time it will take for permitting agencies to complete meaningful consultation, and to obtain necessary approvals.

BC Ferries staff have experience with permitting processes required for terminal construction projects. The permitting process will commence once the Program receives approval and funding. BC Ferries will ensure that all consultation and requirements to apply for permits are researched and prepared in advance of submitting applications and will work with the appropriate permitting authorities to communicate the Program scope and schedule to ensure that the processes can proceed as expeditiously as possible. Robust project planning processes will identify the full scope of work to be addressed. Early stakeholder engagement, already underway, will help to improve the probability of a successful consultation and permit application process.

### ***First Nations Support***

First Nations support will be required for permitting to be achieved efficiently and successfully, whereas First Nations opposition, if experienced, could impact the permitting, and specifically the timeline for achieving permits.

BC Ferries has been working closely with affected First Nations from very early in the planning process to ensure any potential issues or concerns regarding proposed future terminal developments may be brought forward and resolved collaboratively prior to the regulatory review phase. This approach also helps to avoid potential future delays and unforeseen expenses. Early indications from the engagement effort suggest that the Program objectives will be supported in principle by affected First Nations communities.

### ***Currency Fluctuations***

It is probable that BC Ferries will purchase eight to nine vessel charging systems for the terminal/vessel interfaces from outside Canada, exposing BC Ferries to currency exchange risk.

The Company is aware of this consideration and will move to address it once details of the charging system have been determined. Typically, BC Ferries will specify in its requests for proposals that the contract is to be negotiated to a fixed firm price in Canadian dollars. Currency fluctuations between submission of this Application and contract award would be accommodated within the contingency in the Program budget. The actual cost of the charging system is considered relatively small in comparison to the total cost of the Program.

### **Budget**

The aggregate risk of the Program being over budget has been considered as part of the financial analysis, considering both the likelihood and the impact of an over-budget scenario. The contingency amounts described in section 4.2 and included in the overall Program budget will provide some protection against underestimated program costs. As a result, there is low overall likelihood that the Program will exceed the planned budget. If it were to occur, the impact of an over-budget situation would drive BC Ferries to undertake a review of the costs and scope, and to make assessments as to whether or not the full Program scope should be implemented, or if additional funds might be expended resulting in a lower than expected return on investment. The Steering Committee and Stage Gate arrangements planned for this program will allow the Company to monitor, and adapt to, developments that could jeopardize affordability.

### **Financing**

BC Ferries plans to finance the Program with the Government of Canada contribution, cash flow from operations, draws on its credit facility and/or through the proceeds from issuance of bonds in the capital markets. The Part 3 Agreement, described in section 3.1.1, will also contribute. Based on current projections, incremental borrowing is not expected to be needed to directly support the Program.

BC Ferries' long-term financing instruments are secured through a capital markets platform. This platform is capable of accommodating a variety of corporate debt instruments and borrowings ranking equally, including term bank debt, revolving bank lines of credit, publicly-issued and privately-placed debt securities, commercial paper, medium-term notes and interest rate and currency swaps and other hedging instruments.

Detailed documentation associated with the capital markets platform can be viewed online through the System for Electronic Document Analysis and Retrieval (SEDAR) at [www.sedar.com](http://www.sedar.com) or on BC Ferries' website at <https://www.bcferrries.com/our-company/investor-relations>.

### **5.3.3 Procurement Risks**

*o What are the procurement risks and how will they be mitigated?*

#### **Cost Fluctuation or Escalation**

Material and/or labour costs could fluctuate and increase over the course of the construction contracts. Where appropriate, fixed price contracts will mitigate the risk of cost variability. Additionally, contingency in budgets will be used to manage cost uncertainty due to fluctuation and escalation.

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### **Cost Uncertainty**

Certain cost assumptions for the Program are informed by early concept designs and initial studies of technical viability, and are subject to further change as Program details are further developed. Some uncertainty exists due to the relatively new use of vessel electrification technology in BC, as well as construction industry price volatility in the post-COVID-19 pandemic recovery period. Upward pressure on costs may occur with the completion of the final detailed designs, with a commensurate change in the projected capital expenditure for the Program.

To mitigate this risk, the total Program budget includes a margin of contingency that increases overall probability of remaining within budget. See section 4.2 for a discussion of contingency.

In addition to the above, BC Ferries intends to review and update Program budget estimates as additional design information becomes available. As described in section 3.2.3, more refined budget estimates will be produced and contingency levels adjusted as confidence of affordability increases. At each of these stage gates, the Company will confirm affordability prior to proceeding with further design effort or Program implementation.

### **Performance and Defects**

As noted above (see “New Technologies”), the technologies required to electrify the Island class vessels and their associated terminals are new to BC Ferries, which the Company will manage through a combination of research, careful planning and appropriate design. Despite this, as with any initial deployment of new technologies or modified vessels, it is expected there will be a break-in period, during which defects are remedied to optimize operating performance, and the systems settle into normal extended daily operation.

BC Ferries will ensure that terminal and vessel modifications meet contract requirements. A sea trials component of the construction phase of the Program will enable BC Ferries, prior to delivery, to operate the electrified vessels and terminal interfaces and assess whether they will meet the operating performance criteria set out in the contracts. In addition, traditional warranties will form part of the overall contracts with the shipyards and other contractors. This should allow the vessels to enter service and reach steady operational state with the majority of the risk and liability still remaining with these parties.

BC Ferries currently intends to conduct a “proof of concept” evaluation after the first ship and terminal have been electrified, to verify that the charging operation and allow for modifications to the design(s) if required before implementation in the remaining terminals and vessels.

## Section 6 – Conclusion

BC Ferries respectfully requests the Commissioner's approval for a major capital expenditure for the Project of up to \$< > million consisting of \$< > million capital funds and \$< > million supplemental Project expenditures, as part of a larger Program capital and operating cost of \$< > million with the balance provided from external sources. BC Ferries submits that with the federal funding contribution, this expenditure is reasonable, affordable and prudent and consistent with the Company's 12-year capital plan and the Contract. The Program supports the public interest that ferry service remains safe, reliable and affordable. It supports community expectations and Company aspirations in reducing GHG emissions by using a low-carbon, environmentally sustainable energy source, and in providing cleaner and quieter operations onboard, at terminals, and around nearby communities. It benefits post-COVID-19 pandemic economic recovery by engaging local labour and stimulating the economy throughout the Program's life-cycle, and will help to develop significant expertise within BC Ferries and across local industry which will help position the Company for success in alternative energy options for future projects. Island class electrification is, overall, a significant step enabling BC Ferries to achieve the strategic goal of a sustainable low carbon future, potentially setting an important precedent for other ships within the fleet and the marine industry, while maintaining a ferry service that remains safe, reliable and sustainable for many years to come.

## Appendix A – Map of Island Class Routes



The following routes and terminals are in scope for the Program (ICEP):

- Route 18. Blubber Bay, Texada Island / Westview, Powell River;
- Route 19. Nanaimo Harbour, Nanaimo / Descanso Bay, Gabriola Island;
- Route 23. Campbell River / Quathiaski Cove, Quadra Island; and
- Route 25. Alert Bay, Cormorant Island / Sointula, Malcolm Island / Port McNeill.

Additional routes and terminals will eventually be served by Island class vessels, as described in BC Ferries' Fleet Master Plan, but are not currently in scope for ICEP.

## Appendix B – Island Class Electrification Material

### Island Class Vessel Electrification Program

**Canadian Climate Leadership.**  
Over time, 7 additional Island Class will be built bringing the fleet total to 13 vessels, all capable of full battery operation.

When fully built out, the Island Class will comprise 1/3 of BC Ferries' entire fleet. This is potentially one of the most sweeping carbon reduction initiatives in the marine industry world-wide.



MV Island Aurora

Fully electrifying BC Ferries terminals and Island Class vessels is a significant step to transition the fleet away from fossil fuels and reduce GHG emissions. Enabling plug-in recharging and operation of battery-hybrid vessels will have a positive impact on:

- The environment and coastal life through decarbonization and reduced noise;
- The economy, through accelerated economic recovery in British Columbia and Canada;
- Public transportation through improvements in sustainability, efficiency, and lower emissions; and
- Accessibility through additional capacity for coastal communities, aiding the economy and jobs.

### PROGRAM SCOPE

The program includes a total of 18 terminal upgrades on 8 service routes, 6 vessel modifications and 7 new Island Class vessels. BC Ferries envisions this program would be developed in two stages:

#### Stage One:

- Modify 6 existing Island Class vessels to change from hybrid diesel-electric to battery-electric operations
- Modify 9 terminals to enable rapid charging systems

Stage One has a total cost estimate of approximately \$150 million, and will take 2-3 years to complete.

#### Stage Two:

BC Ferries' 16 year capital plan includes building 7 additional Island Class vessels. The second stage of this program proposes to significantly accelerate this build plan.

- Construct 7 new Island Class battery-electric vessels entirely in Canada
- Modify 9 additional terminals:
  - to accommodate the new vessels
  - to enable rapid charging systems

BC Ferries is finalizing the planning for the second stage and the related feasibility of building the ships entirely in Canada. This stage of the program has a preliminary cost estimate of approximately \$1.04 billion and will take 5-7 years to complete.

The combined program (Stages One and Two) has an estimated cost of \$1.19 billion. BC Ferries will contribute towards covering the cost of the program but the execution of both stages is dependant on government funding to proceed.

## PROGRAM BENEFITS

Electrification of the Island Class vessels and associated terminals will result in broad-reaching benefits to coastal communities, to BC and Canada's economy, the environment and the transportation sector. These benefits include:



### Environmental

#### GHG Emissions Reduction and Environmental Benefits

- Removing an estimated 23,600 tonnes of CO<sub>2</sub>e (equivalent to approximately 7,200 vehicles off the road), once all 6 vessels have been converted to battery-electric and removing an estimated 38,200 tonnes of CO<sub>2</sub>e (equivalent to approximately 11,700 vehicles off the road), once all 13 vessels are in operation.
- Helping the Government of Canada meet GHG emissions targets and to support the Pan-Canadian Framework on Clean Growth and Climate Change.
- Enabling market transformation for wide-scale adoption of clean electricity as a transportation energy source.
- Reducing reliance on hydrocarbons and contributing towards quieter ship operations, which will help reduce noise impacts on local communities.
- Eliminating criteria air contaminants (CAC), helping to improve community health and wellbeing by contributing to cleaner air.



### Economic

#### Economic Recovery

- Creating jobs and boosting employment and training opportunities for local communities and First Nations. The complete program will generate a significant number of jobs in the Canadian industries outlined below.
  - Heavy and civil construction
  - Leading-edge technical consulting
  - Project administration
  - Manufacturing and fabrication
  - Marine construction
  - Shipbuilding
  - High-voltage electrical work
  - Ship repair and conversion
- Enabling local development through the extension of three-phase power in some communities.
- Potential for First Nations Equity Ventures.
- Potential for Climate Change resilience.



### Innovation

#### Providing international leadership in marine technology

- Supporting an industry-wide transition to low carbon intensive energy sources through the implementation of a leading-edge electrification technology in the marine sector.
- Contributing to research and development in the standardization of rapid charging for marine electrification.
- Demonstrating Canada's commitment to GHG emissions reduction and sustainable operations.
- Creating one of the most environmentally sustainable ferry operations in the world.



Corvus battery bank on board the Island Class ferries.

*The Island Class Vessel Electrification Program is an opportunity for the Canadian Government and BC Ferries to take definitive climate action while creating economic opportunity in British Columbia and Canada.*



## Island Class Electrification Program (ICEP) Overview



MV Island Aurora

### Program scope

6



Island Class vessels converted to all-electric operation.

18



Up to 18 terminal locations modified to support rapid charging of vessels.

3

primary  
project  
components



1. BC Hydro electrical distribution
2. Terminal electrical upgrades
3. Vessel upgrades to full electric

18,000 tonnes  
CO<sub>2</sub>e



Annual reduction of 18000 tonnes of harmful emissions after first phase.

### Environmental and economic benefits



Reduces emissions and underwater noise, providing healthier environments for Southern Resident Whales and marine life.



Establish Canada as leader in clean marine technology, supporting an industry-wide shift to low carbon energy sources.



Post-pandemic economic stimulus, job creation and training opportunities for coastal communities and First Nations.



Extend power availability to electrical distribution systems that support resiliency and economic growth.

### Schedule

BC Ferries is at an advanced stage of program planning and is ready to proceed with the Island Class Electrification Program as soon as funding is secured.

2021 – Program approvals and funding – 2022 – Vessel conversion and terminal upgrades commence – 2025 – Full electric operation



[bcferries.com](http://bcferries.com)

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## Appendix C – Stakeholder Support

The following organizations provided letters to BC Ferries, indicating their preliminary support of ICEP:

### ***Municipalities and Regional Districts***

- Capital Regional District
- Nanaimo Regional District
- Island Trust Council
- Regional District Mount Waddington – Electoral District A
- qathet Regional District
- qathet Texada Regional Electoral District
- City of Nanaimo
- City of Campbell River
- City of Powell River
- Village of Alert Bay

### ***First Nations***

- We Wai Kai First Nation
- Wei Wai Kum First Nation
- 'Namgis First Nation
- Tla'amin Nation

### ***Business***

- Corvus Energy
- Ralmax Group of Companies (Point Hope Shipyard)

### ***Industry Associations***

- Vancouver Island Economic Alliance (VIEA)
- South Island Prosperity Partnership (SIPP)
- Association of British Columbia Marine Industries (ABCMI)
- Victoria Chamber of Commerce
- Parksville Chamber of Commerce
- Qualicum Chamber of Commerce
- Westshore Chamber of Commerce
- Discovery Islands Chamber of Commerce
- Tourism Vancouver Island
- Parksville Qualicum Tourism Association
- Innovation Norway
- Salt Spring Community Energy Society

- Transition SaltSpring

***Non-Government Organizations***

- Green Marine
- Ocean Networks Canada
- WWF-Canada

***Training Institutions***

- British Columbia Institute of Technology (BCIT)
- Camosun College
- Simon Fraser University (SFU)

***Ferry Advisory Committees***

- Alert Bay, Sointula, Port McNeill – Route 25
- Powell River, Texada Island – Route 18
- Nanaimo, Gabriola Island – Route 19
- Campbell River, Cortes Island – Route 23
- Vesuvius Bay, Crofton (Salt Spring) – Route 6
- Quadra Island, Cortes Island – Route 24
- Chemainus, Thetis Island, Penalekut Island - Route 20
- Denman Island, Hornby Island – Route 22

***Port Authorities***

- Nanaimo Port Authority
- Vancouver Fraser Port Authority
- Victoria Harbour Authority

January 15, 2021

The Right Honourable Justin Trudeau, P.C., M.P.  
Prime Minister of Canada  
80 Wellington Street  
Ottawa, ON K1A 0A2

Dear Prime Minister,

On behalf of the Association of British Columbia Marine Industries (ABCMI), I am writing to urge you to financially support the electrification of BC Ferries' Island Class vessels and their associated terminals. This project would enable the conversion of Island Class ferries from diesel-electric hybrid to all electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers.

This effort would significantly boost the regional economy at a time when it needs it most. Every dollar invested in this project will generate economic benefits to British Columbian communities. Moreover, companies that will source material and equipment for this project will have significant Canadian content throughout their value chain.

The electrification of BC Ferries' terminals and vessel conversions create jobs in industries such as ship repair, heavy and civil construction, and leading-edge technical consulting. Many of these industries employ highly skilled individuals.

ABCMI represents a wide variety of companies in BC's industrial marine sector. This includes shipbuilding and ship repair, industrial marine services and marine infrastructure, marine professional services, marine products, small craft marine construction and repair, and ocean science and technology. In all of these sub-sectors, innovation and a consciousness of building a sustainable industry that contributes towards a reduced environmental and ecological impact is paramount.

Canada will need to make sound strategic decisions as it looks to re-energize its economy in a post-COVID environment. We are confident the electrification of BC Ferries' terminals and vessel conversions will have a lasting and positive impact. We urge the government to financially contribute to its success.

Sincerely,



Alex Rueben  
Executive Director

C.C. The Honourable Catherine McKenna, P.C., M.P., Minister of Infrastructure and Communities

The Honourable Jonathan Wilkinson, P.C., M.P., Minister of Environment and Climate Change

The Honourable Chrystia Freeland, P.C., M.P., Deputy Prime Minister and Minister of Finance

The Honourable Rob Fleming, Minister of Transportation and Infrastructure, Government of British Columbia

The Honourable George Heyman, Minister of Environment and Climate Change, Government of British Columbia

The Honourable Selina Robinson, Minister of Finance, Government of British Columbia

Mark Collins, CEO, BC Ferries



BRITISH COLUMBIA  
INSTITUTE OF TECHNOLOGY

Office of the President  
3700 Willingdon Avenue  
Burnaby, British Columbia  
Canada V5G 3H2

[bcit.ca](http://bcit.ca)

January 27, 2021

Mark Collins  
Chief Executive Officer, BC Ferries  
Suite 500 – 1321 Blanshard Street  
Victoria, BC V8W 0B7

Dear Mr. Collins,

I was pleased to hear about the proposed electrification of BC Ferries' Island Class vessels and the associated terminal infrastructure. There are benefits for BC Ferries, for the province and for post-secondary institutes, including the BCIT community.

This wide-reaching project embodies values of strategic importance for BCIT including sustainability, innovation and becoming future-ready. In addition it is relevant both to our Applied Research and our workforce development strategic plans.

BCIT's Applied Research Capabilities include a small emissions research facility, The Emissions Research and Reduction Test Hub (ERRTH) and there are other related projects involving electrification and sustainability within the transportation sector.

BCIT partners learners and industry for success through workforce development. This project potentially creates rich opportunities for our students, faculty and graduates. The Schools of Transportation, Energy, Construction and the Environment, Business and Media all could contribute and benefit from this endeavour. The skills required in this project will have continued demand in BC long after the project is completed and the experience will prove valuable in many industries. The BCIT emphasis on job-readiness, critical thinking and problem-solving skills creates graduates who can contribute, whether the team's focus is electrical design, systems integration or project management. For young students in in our rigorous apprenticeship programs, mature students reskilling or those pursuing interdisciplinary studies credentials, this project would allow our graduates to gain experience and expertise at the leading edge of technology, while developing specialized workforce skills in high demand across different industries. Our Marine Campus Engineering Graduates could well be involved in implementing, operating and maintaining the system.

BCIT supports this project for the environmental benefit, social value and economic impact it will have and we encourage the government to financially contribute to its success.

Sincerely,

A handwritten signature in black ink that reads "Kathy Kinloch". The signature is fluid and cursive, with the first name "Kathy" and last name "Kinloch" clearly distinguishable.

Kathy Kinloch  
President



January 12, 2021

The Right Honourable Justin Trudeau, P.C., M.P.  
Prime Minister of Canada  
80 Wellington Street  
Ottawa, ON K1A 0A2

Dear Prime Minister:

On behalf of Camosun College, I am writing to encourage you to financially support the electrification of BC Ferries' Island Class vessels and their associated terminals. This project would enable the conversion of Island Class ferries from diesel-electric hybrid to all-electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers.

This effort would have a positive impact on workers in British Columbia. It is expected to create jobs in industries including ship repair, heavy and civil construction, and leading-edge technical consulting. Our alumni, many of whom are employed in the marine industry, are highly skilled workers who possess specialized training and have undergone a rigorous apprenticeship. This project would allow many BC marine sector workers to gain valuable new experience that will allow them to enhance their expertise and will contribute to increasing the size of a specialized workforce in high demand across many different industries.

Moreover, electrification of the ferries will provide a positive impact on the greening of our industries which I know is a priority for your government. This is also a priority for Camosun College as we develop more and more programming targeting environmentally sound construction and industry practices.

We support this project and encourage the government to financially contribute to its success.

Sincerely,

A handwritten signature in black ink that reads "Sherri Bell".

Sherri Bell  
President

.../2

C.C. The Honourable Catherine McKenna, P.C., M.P., Minister of Infrastructure and Communities

The Honourable Jonathan Wilkinson, P.C., M.P., Minister of Environment and Climate Change

The Honourable Chrystia Freeland, P.C., M.P., Deputy Prime Minister and Minister of Finance

The Honourable Rob Fleming, Minister of Transportation and Infrastructure, Government of British Columbia

The Honourable George Heyman, Minister of Environment and Climate Change, Government of British Columbia

The Honourable Selina Robinson, Minister of Finance, Government of British Columbia

Mark Collins, CEO, BC Ferries



City of Campbell River  
From the Office of the Mayor

27 January, 2021

David Hendry, CPA, CMA  
Director, Strategic Planning & Community Engagement  
Strategy & Community Engagement  
British Columbia Ferry Services Inc.

Via email: [David.Hendry@bcferries.com](mailto:David.Hendry@bcferries.com)

**RE: Letter of Support- for BC Ferries – Ferry Electrification Project**

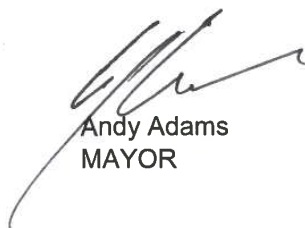
City of Campbell River Council are pleased to learn of BC Ferries Inc's significant investment in your long-term emissions reduction strategy. Please accept our letter of support to accompany your funding application in your efforts towards ferry electrification.

Council recognizes the importance of creating a healthier environment for our marine wildlife, reducing greenhouse gas emissions and eliminating criteria air contaminants to protect the health and wellbeing of our community members.

We appreciate the economic recovery and marine innovation aspects of your plan, and we look forward to learning more about creation of jobs and training opportunities for our community, and your work to establish Canada as a leader in clean, green marine technology.

We wish you success in your application.

Sincerely yours,



Andy Adams  
MAYOR

301 St. Ann's Road, Campbell River, B.C. V9W 4C7 Phone (250) 286-5700 Fax (250) 286-5760



January 20, 2021

The Right Honourable Justin Trudeau, P.C., M.P.  
Prime Minister of Canada  
80 Wellington Street  
Ottawa, ON K1A 0A2

Dear Prime Minister,

**Re: Letter of Support – B.C Ferries Island Class Electrification Project**

As Mayor of the City of Nanaimo, and on behalf of Council, I am pleased to provide this letter of support to B.C. Ferries Island Class Electrification Project.

We urge the federal government to provide financial funding for this important project. This project would enable the conversion of Island-class ferries from hybrid-powered to all-electric vessels by allowing them to seamlessly recharge their batteries as passengers embark and disembark from the ferry during docking. We believe that the project would result in significant community benefits for the City of Nanaimo.

Electrifying the Island Class Ferries and its associated terminals, such as the Gabriola Island terminal in downtown Nanaimo, would help the City reduce greenhouse gas emissions. Through the City's Official Community Plan and Council Strategic Plan, greenhouse gas emissions reduction is seen as a significant priority to promote the long-term wellbeing and the future of our growing community. In April 2019, the City of Nanaimo also declared a Climate Emergency and is currently reviewing and updating its current climate plans and policies to speed up implementation of our GHG reduction goals. The Plan being proposed by BC Ferries will greatly help the City implement this effort.

In addition to emissions reduction, we see the electrification of the Island Class as a valuable opportunity to collaborate with BC Ferries on a community decarbonisation strategy that incorporates local resident and business perspectives. Since the Island Class ferries serves a number of inter-island communities, we see this project as an opportunity to also strengthen community resiliency and adaptability.

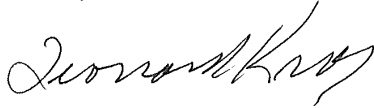
We feel the issue of climate change is one of the most significant challenges facing our province and country. This project would be a first on the West Coast and represents an essential step in the right direction to the transition towards low carbon energy. It would help Canada take meaningful action against climate change while positioning our region as a leader in marine environmental protection.

CITY HALL, 455 WALLACE STREET, NANAIMO, BRITISH COLUMBIA, CANADA V9R 5J6  
TELEPHONE (250) 755-4400 • WEBSITE: WWW.NANAIMO.CA • FAX (250) 754-8263

2 | Page

We support this project and encourage the government to financially contribute to its success.

Sincerely,

A handwritten signature in black ink, appearing to read 'Leonard Krog', written in a cursive style.

Leonard Krog  
MAYOR

cc:

The Honourable Catherine McKenna, P.C., M.P., Minister of Infrastructure and Communities  
The Honourable Jonathan Wilkinson, P.C., M.P., Minister of Environment and Climate Change  
The Honourable Chrystia Freeland, P.C., M.P., Deputy Prime Minister and Minister of Finance  
The Honourable Rob Fleming, Minister of Transportation and Infrastructure, Government of British Columbia  
The Honourable George Heyman, Minister of Environment and Climate Change, Government of British Columbia  
The Honourable Selina Robinson, Minister of Finance, Government of British Columbia  
Mark Collins, CEO, BC Ferries



## City of Powell River

**City Hall – MacGregor Building**  
6910 Duncan Street, Powell River, BC V8A 1V4  
Telephone 604.485.6291 • Fax 604.485.2913  
www.powellriver.ca • info@cdpr.bc.ca

**From the Office of the Mayor**

File No. 0420-20-0003

February 8, 2021

Mark Collins  
Chief Executive Officer, BC Ferries  
Suite 500 – 1321 Blanshard Street  
Victoria, BC V8W 0B7

Dear Mr. Collins:

**Re: Letter of Support for Electrification of BC Ferries**

On behalf of the Powell River City Council, I am writing to express our support for the electrification of BC Ferries' Island Class vessels and their associated terminals. This project would enable the conversion of Island Class ferries from diesel-electric hybrids to all electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers.

This effort would significantly boost the regional economy at a time when it needs it most. Every dollar invested in this project will generate economic benefits to British Columbian communities. Moreover, companies that will source material and equipment for this project will have significant Canadian content throughout their value chain.

The electrification of BC Ferries' terminals and vessel conversions creates jobs in industries such as ship repair, heavy and civil construction, and leading-edge technical consulting. Many of these industries employ highly skilled individuals.

Canada will need to make sound strategic decisions as it looks to re-energize its economy in a post-COVID environment. We are confident the electrification of BC Ferries' terminals and vessel conversions will have a lasting and positive impact.

Yours truly,  
CITY OF POWELL RIVER

David Formosa  
Mayor

DF/jl





The Right Honourable Justin Trudeau, P.C., M.P.  
Prime Minister of Canada  
80 Wellington Street  
Ottawa, ON K1A 0A2

January 12, 2021

Dear Prime Minister:

RE: Support for the Electrification of BC Ferries Island Class Ferries

On behalf of Corvus Energy, we are writing to urge you to financially support the electrification of BC Ferries' Island Class vessels and their associated terminals.

Corvus Energy is the supplier of the batteries recently selected by BC Ferries for six newbuilt Island Class ferries. The batteries were manufactured by Corvus, supporting employment for hundreds of people at Corvus in Richmond, B.C. and at our local suppliers' facilities.

This new project would enable the conversion of these six ferries from diesel-electric hybrid to all-electric vessels, by augmenting battery capacity as well as upgrading shore power infrastructure at BC Ferries terminals to recharge the batteries. It will showcase Canadian decarbonization and noise-reduction technology in maritime environments.

The Corvus lithium-ion batteries that are under consideration for BC Ferries' electrification program are developed (with support from NRC IRAP, WD WINN and ISED Ocean Supercluster) and manufactured in Richmond, B.C. For a decade, the majority of Corvus' product has been exported to Northern Europe and China, earning the company its reputation as the foremost battery technology experts and the world's leading supplier of marine energy storage systems. The ~100 Corvus employees in Richmond, B.C. are proud and excited that our innovative technology is now being deployed in Canada.

We are confident the electrification of BC Ferries' terminals and vessel conversions will have a lasting and positive impact to re-energize the local economy, strengthen low-carbon maritime infrastructure, and improve Canadian knowhow of vessel electrification. We urge the government to financially contribute to its success.

Best Regards,

Geir Bjørkeli  
CEO

Sean Puchalski  
EVP, Strategy and Business Planning

cc The Hon. Catherine McKenna, P.C., M.P., Minister of Infrastructure and Communities  
The Hon. Jonathan Wilkinson, P.C., M.P., Minister of Environment and Climate Change  
The Hon. Chrystia Freeland, P.C., M.P., Deputy Prime Minister and Minister of Finance  
The Hon. Rob Fleming, Minister of Transportation and Infrastructure, Government of BC  
The Hon. George Heyman, Minister of Environment and Climate Change, Government of BC  
The Hon. Selina Robinson, Minister of Finance, Government of British Columbia  
Mark Collins, CEO, BC Ferries

NORWAY  
Espehaugen 60  
5258 Blomsterdalen,  
Norway



CANADA  
#220 - 13155 Delf Place  
Richmond, BC,  
V6V 2A2

[www.corvusenergy.com](http://www.corvusenergy.com)

January 21, 2021

File: 5220-20  
Climate Action  
General  
0220-20  
General Correspondence

Mr. Mark Collins  
Chief Executive Officer  
BC Ferries  
Suite 500 – 1321 Blanshard Street  
Victoria, BC V8W 0B7  
Via email: [mark.collins@bcferries.com](mailto:mark.collins@bcferries.com)

Dear Mr. Collins:

**RE: LETTER OF SUPPORT – ISLAND CLASS ELECTRIFICATION PROJECT**

On behalf of the Capital Regional District (CRD), please accept this letter of support to accompany your funding application to the federal government for your proposed Island Class electrification project. This project would enable the conversion of Island-class ferries from hybrid-powered to all-electric vessels by allowing them to seamlessly recharge their batteries during passenger loading. The CRD agrees in principle with the objectives of this project proposal.

The CRD is committed to reducing greenhouse gas (GHG) emissions and greatly accelerating efforts around regional climate action, as recognized by the CRD's 2019 climate emergency declaration. Electrifying the Island Class and its associated terminals would help reduce GHG emissions. We see this and future related projects as a valuable opportunity to collaborate with BC Ferries on community decarbonization strategies that incorporate local perspectives.

We feel the issue of climate change is one of the most significant challenges facing our region, the province and Canada. We recognize that this project is an essential step in the right direction in the transition toward low carbon energy and reduction of GHG emissions from our transportation sector. We are encouraged by this innovative project. We hope that BC Ferries will learn from this work and continue to transition its vessels serving the capital region to zero carbon fuel sources in the future.

The CRD supports this project and encourages the federal government to financially contribute to its success.

Sincerely,

Larisa Hutcheson, P.Eng.  
General Manager, Parks & Environmental Services

cc: Hansi Liu-Atkinson, Energy Manager, BC Ferries  
Glenn Harris, Senior Manager, Environmental Protection, CRD  
Nikki Elliott, Supervisor, Climate Action Program, CRD



PO Box 790, Quathiaski Cove BC V0P1N0 [info@discoveryislandscoc.ca](mailto:info@discoveryislandscoc.ca)

January 18, 2021

Mark Collins  
Chief Executive Officer, BC Ferries  
Suite 500 – 1321 Blanshard Street  
Victoria, BC V8W 0B7

BRITISH COLUMBIA  
FERRY SERVICES INC.

JAN 21 2021

Presidents Office

Dear Mark,

On behalf of Discovery Islands Chamber of Commerce, we are writing to express our support for the electrification of BC Ferries' Island Class vessels and their associated terminals. This project would enable the conversion of Island Class ferries from diesel-electric hybrid to all-electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers.

As residents of the northern Gulf Islands, we value the endangered Southern Resident Killer Whales, Pacific Salmon and all other sea resources within the waters of our communities. We understand that marine electrification of the Island Class ferries will contribute to quieter ship operations that will help reduce noise impacts on local communities and the marine life that we value. We are also supportive of the elimination of air contaminants for cleaner air that will help improve our community health and well-being.

The employment generated by this project would help stimulate the local economy and be of benefit to our community. Lastly, interconnection upgrades also have the potential of benefiting the power grid system by providing three phase power to our community that will support future economic and local business growth.

Page 1 of 2

In our view, this effort would be a first on the West Coast and represent an essential step that will help Canada take meaningful action against climate change while positioning our region as a leader in marine environmental protection.

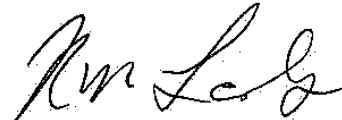
We support this project and encourage the government to financially contribute to its success.

Sincerely,

Discovery Islands Chamber of Commerce



Lynden McMartin, Chairman



Mark Lasby, Secretary-Treasurer

File:

March 11, 2021

Mr. Mark Collins  
President and CEO  
BC Ferries

Via email: [mark.collins@bcferries.com](mailto:mark.collins@bcferries.com)

Dear Mr. Collins;

Re: Federal funding for the Island Class Ferry Electrification Project

On behalf of the council of the District of West Vancouver, I am writing you in support of securing federal funding for the Island Class Ferry Electrification Project.

The project goal of fully electrifying the BC Ferries Island Class vessels which are currently hybrid powered will transition the fleet away from fossil fuels and reduce greenhouse gas (GHG) emissions.

Greenhouse gas emissions would be reduced by 18,000 tonnes of CO<sub>2</sub>e (the equivalent of 3,800 vehicles on the road) per year when the full Island Class program of six vessels is built out.

The move towards quieter ship operations will also help reduce noise impacts on local communities and marine life, such as endangered Southern Resident Killer Whales, Pacific salmon and cetaceans, according to BC Ferries literature provided to Nanaimo city council.

One of our strategic goals is to protect our natural environment, reduce our impact on it, and adapt to climate change. We feel your project reflects our goals and vision and urge the federal government to support this project.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'M Booth', written in a cursive style.

Mary-Ann Booth

cc:

Council, District of West Vancouver

Mayor Gary Ander, Bowen Island Municipality

Mayor Ron McLaughlin, Village of Lions Bay

Mayor Elliott, District of Squamish

MP Patrick Weiler, West Vancouver – Sunshine Coast – Sea to Sky Country

MLA Karin Kirkpatrick, West Vancouver - Capilano

MLA Jordan Sturdy, West Vancouver – Sea to Sky

Robert Bartlett, CAO, District of West Vancouver

01/26/2021

The Right Honourable Justin Trudeau, P.C., M.P.  
Prime Minister of Canada  
80 Wellington Street  
Ottawa, ON K1A 0A2

Dear Prime Minister,

On behalf of my constituents, I am writing to urge you to financially support the electrification of BC Ferries' Island Class vessels and their associated terminals. This project would enable the conversion of Island Class ferries from diesel-electric hybrid to all electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers.

This effort would significantly boost the regional economy at a time when it needs it most. Every dollar invested in this project will generate economic benefits to British Columbian communities. Moreover, companies that will source material and equipment for this project will have significant Canadian content throughout their value chain.

The electrification of BC Ferries' terminals and vessel conversions create jobs in industries such as ship repair, heavy and civil construction, and leading-edge technical consulting. Many of these industries employ highly skilled individuals.

Canada will need to make sound strategic decisions as it looks to re-energize its economy in a post-COVID environment. We are confident the electrification of BC Ferries' terminals and vessel conversions will have a lasting and positive impact. We urge the government to financially contribute to its success.

Sincerely,

Sandra Daniels  
Regional Director  
Mount Waddington BC  
604-720-0695

C.C. The Honourable Catherine McKenna, P.C., M.P., Minister of Infrastructure and Communities

The Honourable Jonathan Wilkinson, P.C., M.P., Minister of Environment and Climate Change

The Honourable Chrystia Freeland, P.C., M.P., Deputy Prime Minister and Minister of Finance

The Honourable Rob Fleming, Minister of Transportation and Infrastructure, Government of British Columbia

The Honourable George Heyman, Minister of Environment and Climate Change, Government of British Columbia

The Honourable Selina Robinson, Minister of Finance, Government of British Columbia  
Mark Collins, CEO, BC Ferries



January 12<sup>th</sup>, 2021

The Right Honourable Justin Trudeau, P.C., M.P.  
Prime Minister of Canada  
80 Wellington Street  
Ottawa, ON K1A 0A2

Dear Prime Minister,

On behalf of Green Marine, I am writing to urge you to financially support the electrification of BC Ferries' Island Class vessels and their associated terminals. This project would enable the conversion of Island Class ferries from diesel-electric hybrid to all electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers.

Green Marine is a voluntary environmental certification program for the North American marine industry. It was developed and is being constantly updated in partnership with several NGOs, government agencies and scientists. The program encourages its participants to reduce their environmental footprint by taking concrete actions, including the development of clean alternative renewable energy solutions. BC Ferries joined Green Marine in 2015 and has demonstrated great commitment to improve its environmental performance.

The electrification of BC Ferries' terminals and vessel conversions represent a very significant step on the road to decarbonization of the maritime industry. It is highly compatible with Canada's stated objectives in fighting climate change. This project will also create jobs in industries such as ship repair, heavy and civil construction, and leading-edge technical consulting. Many of these industries employ highly skilled individuals.

Canada will need to make sound strategic decisions as it looks to re-energize its economy in a sustainable way in a post-COVID environment. We are confident the electrification of BC Ferries' terminals and vessel conversions will have a lasting and positive impact. We urge the government to financially contribute to its success.

Sincerely,

David Bolduc  
Executive Director, Green Marine

5315 22nd Ave NW, Seattle, Washington, 98107

206-409-3943

[info@green-marine.org](mailto:info@green-marine.org)

[green-marine.org](http://green-marine.org)



- C.C. The Honourable Catherine McKenna, P.C., M.P., Minister of Infrastructure and Communities  
The Honourable Jonathan Wilkinson, P.C., M.P., Minister of Environment and Climate Change  
The Honourable Chrystia Freeland, P.C., M.P., Deputy Prime Minister and Minister of Finance  
The Honourable Rob Fleming, Minister of Transportation and Infrastructure, Government of British Columbia  
The Honourable George Heyman, Minister of Environment and Climate Change, Government of British Columbia  
The Honourable Selina Robinson, Minister of Finance, Government of British Columbia  
Mark Collins, CEO, BC Ferries

January 18, 2021

The Right Honourable Justin Trudeau, P.C., M.P.  
Prime Minister of Canada  
80 Wellington Street  
Ottawa, ON  
K1A 0A2

Dear Prime Minister,

As CEO of the Greater Victoria Harbour Authority, a community-based not-for-profit organization, I am fully supportive of the move by BC Ferries to pursue electrification of some of its vessels and terminals. As the owner and operator of the Victoria Cruise Terminal and deep-water port, our organization is exploring the introduction of shore power connections for ocean-going vessels; this project would bring a reduction of greenhouse gas emissions and criteria air contaminants to southern Vancouver Island. Collective efforts – such as our shore power project and BC Ferries' electrification plans – to move marine industries toward electrification and emissions reductions provide a benefit to everyone on the west coast of Canada.

To signal our support for region-wide electrification programs, I am writing to urge you to financially support the electrification of BC Ferries' Island Class vessels and their associated terminals. This project would enable the conversion of Island Class ferries from diesel-electric hybrid to all electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers.

This effort would significantly boost the regional economy at a time when it needs it most. Every dollar invested in this project will generate economic benefits to British Columbian communities. Moreover, companies that will source material and equipment for this project will have significant Canadian content throughout their value chain.

The electrification of BC Ferries' terminals and vessel conversions create jobs in industries such as ship repair, heavy and civil construction, and leading-edge technical consulting. Many of these industries employ highly skilled individuals.

Canada will need to make sound strategic decisions as it looks to re-energize its economy in a post-COVID environment. We are confident the electrification of BC Ferries' terminals and vessel conversions will have a lasting and positive impact. We urge the government to financially contribute to its success.

Sincerely,



Ian Robertson, CEO  
Greater Victoria Harbour Authority

CC:

The Honourable Catherine McKenna, P.C., M.P., Minister of Infrastructure and Communities  
The Honourable Jonathan Wilkinson, P.C., M.P., Minister of Environment and Climate Change  
The Honourable Chrystia Freeland, P.C., M.P., Deputy Prime Minister and Minister of Finance  
The Honourable Rob Fleming, Minister of Transportation and Infrastructure, Government of BC  
The Honourable George Heyman, Minister of Environment and Climate Change, Government of BC  
The Honourable Selina Robinson, Minister of Finance, Government of BC  
Mark Collins, CEO, BC Ferries

January 15, 2021

Mark Collins  
Chief Executive Officer, BC Ferries  
Suite 500 – 1321 Blanshard Street  
Victoria, BC V8W 0B7

Dear Mark,

On behalf of Innovation Norway, owned by the Norwegian Ministry of Trade, Industry and Fisheries, I am writing to express our support for the electrification of BC Ferries' Island Class vessels and their associated terminals. This project would enable the conversion of Island Class ferries from diesel-electric hybrid to all electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers.

This effort would significantly boost the regional economy at a time when it needs it most. Every dollar invested in this project will generate economic benefits to British Columbian communities. Moreover, companies that will source material and equipment for this project will have significant Canadian content throughout their value chain.

The electrification of BC Ferries' terminals and vessel conversions create jobs in industries such as ship repair, heavy and civil construction, and leading-edge technical consulting. Many of these industries employ highly skilled individuals.

Innovation Norway's industry partners in Norway have always been impressed with the international leadership of BC Ferries. We are confident the electrification of BC Ferries' terminals and vessel conversions will be successful and have a lasting and positive impact.

Sincerely,

Alana Prashad  
Senior Advisor, Innovation Norway Toronto  
Energy and Environment Lead, Americas

BUSINESS GROUPS AND ASSOCIATIONS / SUPPLIERS



200-1627 Fort Street, Victoria BC V8R 1H8  
Telephone **(250) 405-5151** Fax (250) 405-5155

Toll Free via Enquiry BC in Vancouver 604.660.2421. Elsewhere in BC  
**1.800.663.7867**

Email [information@islandstrust.bc.ca](mailto:information@islandstrust.bc.ca)

Web [www.islandstrust.bc.ca](http://www.islandstrust.bc.ca)

January 19, 2021

File No.: 0400-20

Via email: [pm@pm.gc.ca](mailto:pm@pm.gc.ca)

The Right Honourable Justin Trudeau, P.C., M.P.  
Prime Minister of Canada  
80 Wellington Street  
Ottawa, ON K1A 0A2

Dear Prime Minister:

**Re: Support for the BC Ferries Island Class Electrification Project**

On behalf of Islands Trust Council, I am writing to communicate our support for the BC Ferries Island Class Electrification Project. We urge the federal government to provide financial funding for this important project. This project would enable the conversion of Island-class ferries from hybrid-powered to all-electric vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers. We believe that the project would support the goals of the Islands Trust Climate Emergency Declaration.

Electrifying the Island Class and its associated terminals would help reduce greenhouse gas emissions. On March 13, 2019, the [Islands Trust Council declared a climate emergency](#) and identified ways in which we will help address and mitigate impacts of climate change. Island communities have repeatedly voiced concerns about the greenhouse gas emissions associated with BC Ferries' vessels and reducing vessel emissions is a significant priority to promote the long-term wellbeing of communities and ecosystems. In addition, as the Island Class ferries serve a number of island communities, we see this project as an opportunity to strengthen community resilience and adaptability.

We are thankful that the federal government has taken a leadership position with regard to climate change. In our view this is not something that can wait. Proactive, ambitious actions are needed now with leadership from the House of Commons. This project represents an essential step in the right direction to the transition towards a low-carbon future.

In March 2019, [Islands Trust Council passed a Reconciliation Declaration](#) to commit to the guiding principles of the Truth and Reconciliation Commissions (TRC) Calls to Action. The Islands Trust is located within the treaty and territories of many First Nation governments and upgrades to the associated BC Ferries terminals could impact First Nations. We feel that for any electrification project to be successful it must include meaningful and respectful engagement between First Nations, all levels of government, Islands Trust, and BC Ferries, and we would advocate for this meaningful and respectful engagement to be part of this project.

With these thoughts in mind we urge you to support this project and encourage the Government of Canada to contribute financially to its success. Thank you for considering this request.

Sincerely,



Peter Luckham  
Chair, Islands Trust Council  
[pluckham@islandstrust.bc.ca](mailto:pluckham@islandstrust.bc.ca)

C.C.    The Honourable Catherine McKenna, P.C., M.P., Minister of Infrastructure and Communities  
The Honourable Jonathan Wilkinson, P.C., M.P., Minister of Environment and Climate Change  
The Honourable Chrystia Freeland, P.C., M.P., Deputy Prime Minister and Minister of Finance  
The Honourable Rob Fleming, Minister of Transportation and Infrastructure, Government of British Columbia  
The Honourable George Heyman, Minister of Environment and Climate Change, Government of British Columbia  
The Honourable Selina Robinson, Minister of Finance, Government of British Columbia  
Mark Collins, CEO, BC Ferries  
Trust Area Members of the Legislative Assembly (MLA's)  
Trust Area BC Ferry Advisory Committee Chairs  
BC Ferry Commissioner  
Bowen Island Municipal Council  
Islands Trust Council  
Islands Trust website



**'NAMGIS**  
**FIRST NATION**

28 January 2021

Mark Collins  
Chief Executive Officer, BC Ferries  
Suite 500 – 1321 Blanshard Street  
Victoria, BC V8W 0B7

Dear Mr. Collins:

On behalf of 'Namgis First Nation, I am writing to express our support for the proposed electrification of BC Ferries' Island Class vessels and their associated terminals. This project would enable the conversion of Island Class ferries from diesel-electric hybrid to all-electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers.

'Namgis support is conditional upon the 'home' terminal of the Island Aurora remaining in Alert Bay as any change would be quite disruptive on our community members who are commute daily for work employment purposes.

As a First Nation, we value the endangered Southern Resident Killer Whales, Pacific Salmon and all other sea resources within the waters of our territories. We understand that marine electrification of the Island Class ferries will contribute to quieter ship operations that will help reduce noise impacts on local communities and the marine life that we value. We are also supportive of the elimination of air contaminants for cleaner air that will help improve our members health and well-being.

Unemployment in our First Nation is high at the best of times and the impacts of the COVID-19 pandemic has exacerbated levels of unemployment. The employment generated by this project would help stimulate the local economy and be of benefit to our members. Lastly, interconnection upgrades also have the potential of benefiting the power grid system by providing three phase power to our First Nation that will support future economic and local business growth.

The 'Namgis people have used and occupied the territory where BC Ferries' terminals are located and continue to do so to this day. Although today we express our support in principle of BC Ferries' proposal to electrify the Island Class vessels and their associated terminals, we do, however, reserve the right to be consulted and our support will not be construed as precluding our Nation from bona fide participation in any application, review, or approval process relating to the manner in which BC Ferries' terminals may in

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• 49 Atli Rd • PO BOX 210 • Alert Bay, BC V0N1A0 • T:250-974-5556 • F:250-974-5900 •  
[www.namgis.bc.ca](http://www.namgis.bc.ca)

the future be constructed, operated, or maintained as a result. We look forward to establishing a good working relationship with BC Ferries in this regard.

We understand that this project would greatly enhance the environmental and socio-economic well-being of our community. Electrification is the way of the future, and we support the electrification of BC Ferries' terminals and vessels and encourage the government to financially contribute to its success. Reducing greenhouse gases and its impacts on climate change are critical and we see this initiative as helping to do that. And, finally, should this initiative receive funding, we would welcome the opportunity to further engage with BC Ferries' to identify any potential economic opportunities or other areas of partnership.

Sincerely,



Don Svanvik, Chief  
'Namgis First Nation

1 February 2021

Mr. Mark Collins  
President & CEO, BC Ferries  
Suite 500 , 1321 Blanshard Street, Victoria, BC V8W 0B7  
*transmitted via email*

Dear Mr. Collins,

I am delighted to write to you in support of your work to fully electrify your new Island Class vessels along with their terminals.

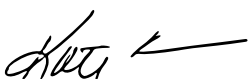
Ocean Networks Canada has been pleased to partner with you on our program together that captures ocean data while underway on three of your current routes . We hope to soon continue this program on the electric vessels too. This partnership demonstrated to us BC Ferries commitment to sustainable ocean use.

And now you are taking BC Ferries to another level of climate action with electrification and doing so as one of the world leaders in sustainable ferry operations. Electrification of your Island Class vessels not only supports the province's Clean BC Program and the federal government's Pan-Canadian Framework on Clean Growth and Climate Change, it is , simply put, the right corporate thing to do for taking climate action.

And the added benefit is a quieter ocean that helps to protect ocean species that are negatively impacted by noise, like the endangered Southern Resident Killer Whales.

I applaud this initiative.

Sincerely yours,



Kate Moran, PhD, FCSSE, PEng  
President & CEO



University of Victoria  
Queenswood Campus  
#100-2474 Arbutus Road  
Victoria, BC V8N 1V8  
Canada

T +1.250.472.5400  
F +1.250.472.5370  
info@oceannetworks.ca

oceannetworks.ca  
@ocean\_networks

A UNIVERSITY OF VICTORIA INITIATIVE



January 15, 2021

Mark Collins  
Chief Executive Officer, BC Ferries  
Suite 500 – 1321 Blanshard Street  
Victoria, BC V8W 0B7

Dear Mark,

On behalf of The Parksville & District Chamber of Commerce, I am writing to express our support for the electrification of BC Ferries' Island Class vessels and their associated terminals. This project would enable the conversion of Island Class ferries from diesel-electric hybrid to all electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers.

This effort would significantly boost the regional economy at a time when it needs it most. Every dollar invested in this project will generate economic benefits to British Columbian communities. Moreover, companies that will source material and equipment for this project will have significant Canadian content throughout their value chain.

The electrification of BC Ferries' terminals and vessel conversions create jobs in industries such as ship repair, heavy and civil construction, and leading-edge technical consulting. Many of these industries employ highly skilled individuals.

Canada will need to make sound strategic decisions as it looks to re-energize its economy in a post-COVID environment. We are confident the electrification of BC Ferries' terminals and vessel conversions will have a lasting and positive impact.

Sincerely,

Kim Burden  
Executive Director

Parksville & District Chamber of Commerce PO Box 99 Parksville, BC V9P 2G3  
Telephone: 250-248-3613 Fax: 250-248-5210  
[info@parkvillechamber.com](mailto:info@parkvillechamber.com)

# PARKSVILLE QUALICUM BEACH

Parksville Qualicum Beach Tourism Association  
PO Box 239, Parksville, BC V9P 2G4  
T: 250 248 6300 | F: 250-248-6308  
ParksvilleQualicumBeach.com

January 19, 2021

BRITISH COLUMBIA  
FERRY SERVICES INC.

JAN 22 2021

Presidents Office

The Right Honourable Justin Trudeau, P.C., M.P.  
Prime Minister of Canada  
80 Wellington Street  
Ottawa, ON K1A 0A2

Dear Prime Minister:

On behalf of the Parksville Qualicum Beach Tourism Association, I am writing to urge you to financially support the electrification of BC Ferries' Island Class vessels and their associated terminals. This project would enable the conversion of Island Class ferries from diesel-electric hybrid to all electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers.

This effort would significantly boost the regional economy at a time when it needs it most. Every dollar invested in this project will generate economic benefits to British Columbian communities. Moreover, companies that will source material and equipment for this project will have significant Canadian content throughout their value chain.

The electrification of BC Ferries' terminals and vessel conversions create jobs in industries such as ship repair, heavy and civil construction, and leading-edge technical consulting. Many of these industries employ highly skilled individuals.

Canada will need to make sound strategic decisions as it looks to re-energize its economy in a post-COVID environment. We are confident the electrification of BC Ferries' terminals and vessel conversions will have a lasting and positive impact. We urge the government to financially contribute to its success.

Sincerely,



Patrick Jiggins, Chair

C.C.

The Honourable Catherine McKenna, P.C., M.P., Minister of Infrastructure and Communities  
The Honourable Jonathan Wilkinson, P.C., M.P., Minister of Environment and Climate Change  
The Honourable Chrystia Freeland, P.C., M.P., Deputy Prime Minister and Minister of Finance  
The Honourable Rob Fleming, Minister of Transportation & Infrastructure, Government of BC  
The Honourable George Heyman, Minister of Environment & Climate Change, Government of BC  
The Honourable Selina Robinson, Minister of Finance, Government of BC  
Mark Collins, CEO, BC Ferries

Jan 13, 2021

Mark Collins  
Chief Executive Officer, BC Ferries  
Suite 500 – 1321 Blanshard Street  
Victoria, BC V8W 0B7

Dear Mark,

On behalf of Nanaimo Port Authority, I am writing to express our support the initiative for the electrification of BC Ferries' Island Class vessels and their associated terminals. We understand this project would enable the conversion of Island Class ferries from diesel-electric hybrid to all electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers.

With this project and initiative, the environmental impact within the Port of Nanaimo would be significantly reduced and we support this bold step in leading the way to change in our community.

This effort would significantly boost the regional economy at a time when it needs it most. Every dollar invested in this project will generate economic benefits to British Columbian communities. We fully support companies that will source material and equipment for this project having significant Canadian content throughout their value chain.

The electrification of BC Ferries' terminals and vessel conversions will create jobs in industries such as ship repair, heavy and civil construction, and leading-edge technical consulting. Many of these industries employ highly skilled local individuals.

Canada will need to make sound strategic decisions as it looks to re-energize its economy in a post-COVID environment. We are confident the electrification of BC Ferries' terminals and vessel conversions will have a lasting and positive impact, and we urge our federal government to support this initiative.

Sincerely,



Ian Marr,  
President & C.E.O.  
Nanaimo Port Authority



January 29, 2021

The Right Honourable Justin Trudeau, P.C., M.P.  
Prime Minister of Canada  
80 Wellington Street  
Ottawa, ON K1A 0A2

Sent Via Email: [justin.trudeau@parl.gc.ca](mailto:justin.trudeau@parl.gc.ca)

Dear Prime Minister Trudeau,

**Re: Support for Electrification of BC Ferries' Island Class Vessels and Associated Terminals**

On behalf of the qathet Regional District, I am writing to urge you to financially support the electrification of BC Ferries' Island Class vessels and their associated terminals. This project would enable the conversion of Island Class ferries from diesel-electric hybrid to all electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers.

This effort would significantly boost the regional economy at a time when it needs it most. Every dollar invested in this project will generate economic benefits to British Columbian communities. Moreover, companies that will source material and equipment for this project will have significant Canadian content throughout their value chain.

The electrification of BC Ferries' terminals and vessel conversions create jobs in industries such as ship repair, heavy and civil construction, and leading-edge technical consulting. Many of these industries employ highly skilled individuals.

Canada will need to make sound strategic decisions as it looks to re-energize its economy in a post-COVID environment. We are confident the electrification of BC Ferries' terminals and vessel conversions will have a lasting and positive impact. We urge the government to financially contribute to its success.

Sincerely,



Patrick Brabazon, Chair  
qathet Regional District

C.C.

The Honourable Catherine McKenna, P.C., M.P., Minister of Infrastructure and Communities  
The Honourable Jonathan Wilkinson, P.C., M.P., Minister of Environment and Climate Change  
The Honourable Chrystia Freeland, P.C., M.P., Deputy Prime Minister and Minister of Finance  
The Honourable Rob Fleming, Minister of Transportation and Infrastructure, Government of British Columbia  
The Honourable George Heyman, Minister of Environment and Climate Change, Government of British Columbia  
The Honourable Selina Robinson, Minister of Finance, Government of British Columbia  
Mark Collins, CEO, BC Ferries

Jan. 22, 2021

The Right Honourable Justin Trudeau, P.C., M.P.  
Prime Minister of Canada  
80 Wellington Street  
Ottawa, ON K1A 0A2

Dear Prime Minister,

As the elected regional representative for one of the communities served by BC Ferries Island Class vessels (Texada Island) I am writing to urge you to financially support the electrification of these ships and their associated terminals. **This is an opportunity for the Government of Canada to showcase to the world how it is committed to reducing greenhouses gases and addressing the impacts of climate change.** This project would enable the conversion of Island Class ferries from diesel-electric hybrid to all electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers.

This effort would significantly boost the regional economy at a time when it needs it most. Every dollar invested in this project will generate economic benefits to British Columbian communities. Moreover, companies that will source material and equipment for this project will have significant Canadian content throughout their value chain.

The electrification of BC Ferries' terminals and vessel conversions create jobs in industries such as ship repair, heavy and civil construction, and leading-edge technical consulting. Many of these industries employ highly skilled individuals.

Canada will need to make sound strategic decisions as it looks to re-energize its economy in a post-COVID environment. I'm confident the electrification of BC Ferries' terminals and vessel conversions will have a lasting and positive impact. I urge the government to financially contribute to its success.

Sincerely,

Sandy McCormick  
Director, qathet Regional District  
Texada Island, British Columbia

C.C. The Honourable Catherine McKenna, P.C., M.P., Minister of Infrastructure and Communities  
The Honourable Jonathan Wilkinson, P.C., M.P., Minister of Environment and Climate Change  
The Honourable Chrystia Freeland, P.C., M.P., Deputy Prime Minister and Minister of Finance  
The Honourable Rob Fleming, Minister of Transportation and Infrastructure, Government of British Columbia  
The Honourable George Heyman, Minister of Environment and Climate Change, Government of British Columbia  
The Honourable Selina Robinson, Minister of Finance, Government of British Columbia  
Mark Collins, CEO, BC Ferries



"Leading our community  
toward a healthy future"

Sarah Duncan  
Chair  
Coastal Community Credit  
Union

Matt Breedlove  
Vice-Chair  
Royal LePage Parksville  
Qualicum Beach Realty

Katherine Wilk  
Past - Chair  
Royal LePage Parksville  
Qualicum Beach Realty

David Nellist  
Treasurer  
Raymond James - Qualicum  
Beach branch

Carol Riera  
Secretary  
ReMax Anchor Realty

Jay Norton  
Director  
JN Consulting

Jean Young  
Director  
Arbutus Fashion

Paul Trudeau  
Director  
Sand Pebbles Inn

Andy Lee  
Director  
Ocean Crest Motel

Tara Macart  
Director  
Opti-Balance Naturopathic  
Medicine

Jillian Porter  
Director  
Carmana Home  
Improvements

Daniella Novak  
Director  
CIBC

Staff:  
Kim Burden  
Executive Director

2711 Island Hwy. West  
Qualicum Beach, BC  
V9K 2C4  
Phone 250-752-0960  
www.qualicum.bc.ca

January 15, 2021

Mark Collins  
Chief Executive Officer, BC Ferries  
Suite 500 - 1321 Blanshard Street  
Victoria, BC V8W 0B7

Dear Mark,

On behalf of The Qualicum Beach Chamber of Commerce, I am writing to express our support for the electrification of BC Ferries' Island Class vessels and their associated terminals. This project would enable the conversion of Island Class ferries from diesel-electric hybrid to all electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers.

This effort would significantly boost the regional economy at a time when it needs it most. Every dollar invested in this project will generate economic benefits to British Columbian communities. Moreover, companies that will source material and equipment for this project will have significant Canadian content throughout their value chain.

The electrification of BC Ferries' terminals and vessel conversions create jobs in industries such as ship repair, heavy and civil construction, and leading-edge technical consulting. Many of these industries employ highly skilled individuals.

Canada will need to make sound strategic decisions as it looks to re-energize its economy in a post-COVID environment. We are confident the electrification of BC Ferries' terminals and vessel conversions will have a lasting and positive impact.

Sincerely,

Kim Burden  
Executive Director



January 12, 2021

The Right Honourable Justin Trudeau, P.C., M.P.  
Prime Minister of Canada  
80 Wellington Street  
Ottawa, ON K1A 0A2

Dear Prime Minister,

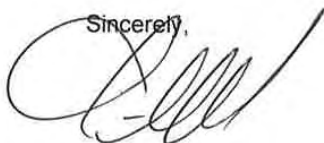
On behalf of The Ralmax Group of Companies, I am writing to urge you to financially support the electrification of BC Ferries' Island Class vessels and their associated terminals. This project would enable the conversion of Island Class ferries from diesel-electric hybrid to all electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers.

This effort would significantly boost the regional economy at a time when it needs it most. Every dollar invested in this project will generate economic benefits to British Columbian communities. Moreover, companies that will source material and equipment for this project will have significant Canadian content throughout their value chain.

The electrification of BC Ferries' terminals and vessel conversions create jobs in industries such as ship repair, heavy and civil construction, and leading-edge technical consulting. Many of these industries employ highly skilled individuals.

Canada will need to make sound strategic decisions as it looks to re-energize its economy in a post-COVID environment. We are confident the electrification of BC Ferries' terminals and vessel conversions will have a lasting and positive impact. We urge the government to financially contribute to its success.

Sincerely,



Ian Maxwell  
Owner / CEO

C.C. The Honourable Catherine McKenna, P.C., M.P., Minister of Infrastructure and Communities  
The Honourable Jonathan Wilkinson, P.C., M.P., Minister of Environment and Climate Change  
The Honourable Chrystia Freeland, P.C., M.P., Deputy Prime Minister and Minister of Finance  
The Honourable Rob Fleming, Minister of Transportation and Infrastructure, Government of British Columbia  
The Honourable George Heyman, Minister of Environment and Climate Change, Government of British Columbia  
The Honourable Selina Robinson, Minister of Finance, Government of British Columbia  
Mark Collins, CEO, BC Ferries

#### RALMAX GROUP OF COMPANIES

|                                    |                                     |                            |                                       |                             |                                          |
|------------------------------------|-------------------------------------|----------------------------|---------------------------------------|-----------------------------|------------------------------------------|
| <b>POINT HOPE</b><br>MARITIME      | <b>UNITED</b><br>ENGINEERING        | <b>CHEW</b><br>CONTRACTING | <b>TRIO</b><br>READY-MIX              | <b>ELLICE</b><br>RECYCLE    | <b>SALISH SEA</b><br>INDUSTRIAL SERVICES |
| <b>NIXON BROS.</b><br>TRUCK REPAIR | <b>ESQUIMALT</b><br>DRYDOCK COMPANY | <b>RALMAX</b><br>MARINE    | <b>ST. VINCENT BAY</b><br>QUARRY LTD. | <b>RALMAX</b><br>PROPERTIES | <b>VICTORIA</b><br>HARBOR FERRY          |

February 1, 2021

The Right Honourable Justin Trudeau, P.C., M.P.  
Prime Minister of Canada  
80 Wellington Street  
Ottawa, ON K1A 0A2

**Re: Letter of Support - BC Ferries Island Class Electrification Project**

Dear Prime Minister:

On behalf of the Regional District of Nanaimo's Board of Directors, I am pleased to provide a letter of support for BC Ferries Island Class Electrification project.

This project would enable the conversion of Island Class ferries from hybrid-powered to all-electric vessels by allowing them to seamlessly recharge their batteries during docking as passengers embark and disembark. Several of the inter-island routes served by the Island Class vessels lie within the Regional District of Nanaimo, and the electrification project would result in significant community benefits.

Electrifying the Island Class vessels and associated terminals would help reduce greenhouse gas emissions. In 2013, the Regional District of Nanaimo adopted our Community Energy and Emission Plan to address and mitigate impacts of climate change in our region. Under this plan, the reduction of greenhouse gas emissions is a key priority to promote the long-term wellbeing of our growing community. Additionally, climate change adaptation and mitigation, including a strategy for electric vehicle recharging and the goal of becoming net zero by 2032 are identified in the Board's current Strategic Plan.

Climate change is one of the most significant challenges facing our province and Canada. This project would be a first on the West Coast and represents an essential step in the transition towards low carbon energy. It would help Canada take meaningful action against climate change while positioning our region as a leader in marine environmental protection.

In addition to emissions reduction, electrification of the Island Class is a valuable opportunity to collaborate with BC Ferries on a community decarbonisation strategy that incorporates local resident and business perspectives. Since the Island Class ferries serve inter-island communities, this project will provide prospects to enhance community resilience and adaptability as we position ourselves to optimize post-pandemic economic recovery opportunities.

The Regional District of Nanaimo Board strongly supports this project and encourages the federal government to provide funding to help make it possible.

Sincerely,

A handwritten signature in black ink, appearing to read "Tyler Brown".

Tyler Brown, Chair  
Regional District of Nanaimo

cc: The Honourable Catherine McKenna, P.C., M.P., Minister of Infrastructure and Communities  
The Honourable Jonathan Wilkinson, P.C., M.P., Minister of Environment and Climate Change  
The Honourable Chrystia Freeland, P.C., M.P., Deputy Prime Minister and Minister of Finance  
The Honourable Rob Fleming, Minister of Transportation and Infrastructure, Government of British Columbia  
The Honourable George Heyman, Minister of Environment and Climate Change, Government of British Columbia  
The Honourable Selina Robinson, Minister of Finance, Government of British Columbia  
Mark Collins, Chief Executive Officer, BC Ferries

January 20, 2021

Chief Executive Officer, BC Ferries

Suite 500 - 1321 Blanshard Street,  
Victoria, BC,  
V8W 0B7

Dear Mark;

The Salt Spring Island Ferry Advisory Committee strongly supports the electrification of the BCF Island Class ferries and of the terminals from which they will operate. This project will enable the diesel-electric Island Class to meet their full potential as all-electric vessels by allowing them to seamlessly and efficiently recharge their batteries in the berth while passengers disembark and embark. As Salt Spring Island's Route 6 will utilize Island Class ferries in the near future this program is particularly critical to us.

The Salt Spring Island FAC is very cognizant of how electrification of ferries would be a major benefit to the Salish Sea coastal environment by eliminating air contaminants generated by marine diesel operations.

The quieter electric engines will also be a major benefit both to marine life as well as to local onshore coastal communities.

The leading edge technology involved in the program will be a major benefit to the local economy and generate significant employment of a high caliber. As well, upgrading the electrical grid by greater interconnection and provision of three phase power will be a major benefit to future local economic and business growth.

In our view, this effort would be an innovative first step on the West Coast and represent an essential step that will help Canada take meaningful action against climate change while positioning our region as a leader in marine environmental protection. We therefore support this project and encourage the government to contribute financially to its implementation and success.

Sincerely,

Harold Swierenga  
Chair, Salt Spring Island Ferry Advisory Committee.

Northern Sunshine Coast Ferry Advisory Committee  
c/o 7734 McAulay Road  
Powell River, B.C. V8A 0R4

January 18, 2021

Mark Collins  
Chief Executive Officer, BC Ferries  
Suite 500 – 1321 Blanshard Street  
Victoria, BC V8W 0B7

VIA EMAIL

Dear Mark,

On behalf of the Northern Sunshine Coast Ferry Advisory Committee, I am writing to express our support for the electrification of BC Ferries' Island Class vessels and their associated terminals. This project would enable the conversion of Island Class ferries from diesel-electric hybrid to all-electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers.

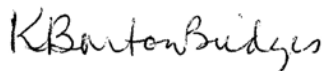
As a Ferry Advisory Committee, we value the endangered Southern Resident Killer Whales, Pacific Salmon and all other sea resources within the waters of our communities. We understand that marine electrification of the Island Class ferries will contribute to quieter ship operations that will help reduce noise impacts on local communities and the marine life that we value. We are also supportive of the elimination of air contaminants for cleaner air that will help improve our community health and well-being.

The employment generated by this project would help stimulate the local economy and be of benefit to our community. Lastly, interconnection upgrades also have the potential of benefiting the power grid system by providing three phase power to our community that will support future economic and local business growth.

In our view, this effort would be a first on the West Coast and represent an essential step that will help Canada take meaningful action against climate change while positioning our region as a leader in marine environmental protection.

We support this project and encourage the government to financially contribute to its success.

Sincerely,



Kim Barton-Bridges, Chair  
Northern Sunshine Coast Ferry Advisory Committee

January 13<sup>th</sup>, 2021

Mark Collins  
Chief Executive Officer, BC Ferries  
Suite 500 – 1321 Blanshard Street  
Victoria, BC, V8W 0B7

**Re: BC Ferries request for federal grant money for electrification of Island Class routes**

Dear Mark,

I am writing to express the support of the Gabriola Ferry Advisory Committee for the electrification of BC Ferries' Island Class vessels and their associated terminals. This initiative would enable the conversion of Island Class ferries from diesel-electric hybrid to all-electric by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers.

Like most Canadians, we are aware of the significant threats posed by climate change, and we support any efforts to reduce the use of fossil fuels in transportation systems, including the BC Ferries fleet.

We also value the endangered Southern Resident Killer Whales, Pacific Salmon and all other marine organisms within the waters of our communities. We understand that electrification of the Island Class ferries will contribute to quieter and cleaner ship operations that will help reduce noise impacts on local communities and on the marine life that we value. We are also supportive of the elimination of air contaminants that will help improve our community health and well-being.

The employment generated by this project would help stimulate the local economy and be of benefit to our community. Interconnection upgrades also have the potential of benefiting the power grid system by providing three phase power to our community that will support future economic and local business growth.

In our view, this effort represents an essential step that will help Canada take meaningful action against climate change while positioning our region as a leader in marine environmental protection.

We support this project and hope that the government will contribute funding so that the conversions can proceed quickly.

Sincerely,



Steven Earle on behalf of the Gabriola Ferry Advisory Committee

January 13<sup>th</sup>, 2021

Mark Collins  
Chief Executive Officer,  
BC Ferries  
Suite 500 – 1321 Blanchard Street  
Victoria, BC V8W 0B7

Dear Mark,

On behalf of the Chemainus-Thetis-Penelakut (Route 20) Ferry Advisory Committee, I am writing to express our support for the electrification of BC Ferries' Island Class vessels and their associated terminals. This project would enable the conversion of Island Class ferries from diesel-electric hybrid to all-electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers.

As a Ferry Advisory Committee, we value the endangered Southern Resident Killer Whales, Pacific Salmon and all other sea resources within the waters of our communities. We understand that marine electrification of the Island Class ferries will contribute to quieter ship operations that will help reduce noise impacts on local communities and the marine life that we value. We are also supportive of the elimination of air contaminants for cleaner air that will help improve our community health and well-being.

The employment generated by this project would help stimulate the local economy and be of benefit to our community. Lastly, interconnection upgrades also have the potential of benefiting the power grid system by providing three phase power to our community that will support future economic and local business growth.

In our view, this effort would be a first on the West Coast and represent an essential step that will help Canada take meaningful action against climate change while positioning our region as a leader in marine environmental protection.

We support this project and strongly encourage both the Provincial and Federal Governments to financially contribute in a significant way to the success of this initiative.

Sincerely,

Keith Rush  
Co-Chair  
Route 20 FAC

January 18, 2021

Mark Collins  
Chief Executive Officer, BC Ferries  
Suite 500 – 1321 Blanshard Street  
Victoria, BC V8W 0B7

Dear Mark,

On behalf of the Denman/Hornby Island Ferry Advisory Committee, I am writing to express our support for the electrification of BC Ferries' Island Class vessels and their associated terminals.

We realize COVID-19 is the government's major immediate concern. However, we also realize the government must begin to lay the groundwork for rebuilding our economy to face THE defining issue of our time, the climate emergency.

Here we have an industry, BC Ferries, a major employer on the west coast of Canada desirous of making changes in its operations that would assist Canada to fulfill its goal of carbon neutrality by 2050. Electrifying the Island Class ferries would be the equivalent of reducing GHG emissions by 18,000 tonnes or removing 3800 vehicles from our nation's roadways. Unfortunately BC Ferries, like many other industries, has watched as its revenues dropped to record lows while it continued to transport essential supplies to communities large and small up and down the Canadian Pacific coast. Therefore, it needs financial assistance to make this practical environmental project a reality.

May I remind you that Canada has a long history of industry and government working together to achieve social and economic goals. This cooperation began shortly after Confederation with the building of the Canadian Pacific Railway and has continued with numerous other projects deemed significant and/or in the national interest over the past 150 years.

The government is always concerned about creating jobs and encouraging training opportunities in emerging technologies. This project would generate significant new jobs in many areas including construction, manufacturing, high voltage electrical, and ship conversion, for example. The employment would stimulate the local economy and be of benefit to our community. As well, interconnection upgrades would have the potential of benefiting the electrical grid by providing three phase power to our community that would support further local economic growth.

In our view, this effort would be a first on the West Coast and represent an essential step that will help Canada take meaningful action against climate change while positioning our region as a leader in marine environmental protection.

We support this project and encourage the government to financially contribute to its success.

Sincerely,

Frank Frketich  
Chairperson, Denman/Hornby FAC

January 26, 2021

Mark Collins  
Chief Executive Officer, BC Ferries  
Suite 500 – 1321 Blanshard Street  
Victoria, BC V8W 0B7

Dear Mark,

On behalf of our Route 25 Tri-Island Ferry Advisory Committee, I am writing to express our support for the electrification of BC Ferries' Island Class vessels and their associated terminals. This project would enable the conversion of Island Class ferries from diesel-electric hybrid to all-electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers.

As a Ferry Advisory Committee, we value the endangered Southern Resident Killer Whales, Pacific Salmon and all other sea resources within the waters of our communities. We understand that marine electrification of the Island Class ferries will contribute to quieter ship operations that will help reduce noise impacts on local communities and the marine life that we value. We are also supportive of the elimination of air contaminants for cleaner air that will help improve our community health and well-being.

The employment generated by this project would help stimulate the local economy and be of benefit to our community. Lastly, interconnection upgrades also have the potential of benefiting the power grid system by providing three phase power to our community that will support future economic and local business growth.

In our view, this effort would be a first on the West Coast and represent an essential step that will help Canada take meaningful action against climate change while positioning our region as a leader in marine environmental protection.

We support this project and encourage the government to financially contribute to its success.

Sincerely,

A handwritten signature in blue ink, appearing to read "Melissa Fletcher", with a stylized flourish at the end.

Melissa Fletcher  
Tri-Islands FAC Chair

Campbell River/Quadra/Cortes Ferry Advisory Committee

January 15<sup>th</sup> 2021

Mark Collins  
Chief Executive Officer, BC Ferries  
Suite 500 – 1321 Blanshard Street  
Victoria, BC V8W 0B7

Dear Mr. Collins,

On behalf of the Campbell River/Quadra/Cortes Ferry Advisory Committee, I am writing to express our support for the electrification of BC Ferries' Island Class vessels and their associated terminals. We understand that this project will enable the conversion of Island Class ferries from the present diesel-electric hybrid to all-electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers as well as at overnight berths.

We believe that the full electrification of the Island Class ferries will contribute to quieter ship operations in order to reduce noise impacts on local communities and the marine life that we value including the endangered Whales, Pacific Salmon and all other sea resources within the waters of our islands. We are also supportive of the elimination of air contaminants for cleaner air that will contribute to our community health and well-being.

The interconnection upgrades also have the potential of benefiting the power grid system by providing three phase power that will support future economic and local business growth. In addition, the employment generated by this project would be a welcome a boost to the local economy.

In our view, this effort would put British Columbia in the forefront of marine environmental protection technology and represent an essential step that will help Canada take meaningful action against climate change.

We support this project and encourage the government to financially contribute to its success.

Sincerely,

Michael Lynch,  
Chair, CRQC Ferry Advisory Committee



Salt Spring Community Energy Society  
PO Box 123, Fulford Harbour  
Salt Spring, BC, V8K 2P2

January 18, 2021

The Right Honourable Justin Trudeau, P.C., M.P.  
Prime Minister of Canada  
80 Wellington Street  
Ottawa, ON K1A 0A2

Dear Prime Minister,

On behalf of the Salt Spring Community Energy Society, I am writing to express our strong support for the BC Ferries Island Class electrification project and the need for federal government funding for this important project.

The Society is an active non-profit organisation, concerned about sustainability, encouraging renewable energy and clean technology development on Salt Spring Island and the entire Salish Sea region. We are especially interested in renewable energy projects that will inspire our community to embrace a rapid transition to a low carbon economy.

The BC Ferries electrification plan would enable the conversion of Island-class ferries from hybrid-powered to all-electric vessels to allow recharging their batteries at ferry terminals during the embarkation and disembarkation of vehicles and passengers. We believe that the project would result in significant marine environmental, public health, economic and other community benefits for the region and reflect the Federal Government's commitment to reducing GHG emissions, especially in the transportation sector.

Salt Spring has just completed an updated Climate Action Plan for our community and electrifying all forms of transportation is a major strategy in the Plan. BC Ferries on Salt Spring routes alone are estimated to produce over 17,000 tCO<sub>2</sub>e each year. Electrifying the Island Class ferries and its associated terminals throughout our region would contribute significantly to the overall goal of a 50% reduction in GHG emissions by 2030.

Our regional and local governments have declared a Climate Emergency in the region and this project represents an effective step in the urgent transition needed from fossil fuels towards low carbon energy. It would demonstrate meaningful action by Canada on the climate crisis while positioning our region as a leader in marine environmental protection.

This project has our full support and we urge the federal government to financially contribute to its success.

Sincerely,

*Ron Watts*

Ron Watts  
Chair  
Salt Spring Community Energy Society



Salt Spring Community Energy Society  
PO Box 123, Fulford Harbour  
Salt Spring, BC, V8K 2P2

- C.C. The Honourable Catherine McKenna, P.C., M.P., Minister of Infrastructure and Communities  
The Honourable Jonathan Wilkinson, P.C., M.P., Minister of Environment and Climate Change  
The Honourable Chrystia Freeland, P.C., M.P., Deputy Prime Minister and Minister of Finance  
The Honourable John Horgan, Premier, Government of British Columbia  
The Honourable Rob Fleming, Minister of Transportation and Infrastructure, Government of British Columbia  
The Honourable George Heyman, Minister of Environment and Climate Change, Government of British Columbia  
The Honourable Selina Robinson, Minister of Finance, Government of British Columbia  
Mark Collins, CEO, BC Ferries

25 January, 2021

The Right Honourable Justin Trudeau, P.C., M.P.  
Prime Minister of Canada  
80 Wellington Street  
Ottawa, ON K1A 0A2

Dear Prime Minister,

**Re: Island Class Ferry Electrification Project**

On behalf of Simon Fraser University, we are pleased to provide this letter of support for British Columbia Ferry Services Inc.'s Island Class electrification project. The project will overcome critical barriers to the use of renewably generated electricity within Canadian maritime transportation. It will advance Canada's goal of achieving net-zero CO<sub>2</sub> emissions by 2050 while providing long-term benefit to Canadian infrastructure, communities, and industry.

The core values of SFU's School of Sustainable Energy Engineering (SEE) are closely aligned with the scope and goals of this project. SEE is a unique program in Western Canada, dedicated to leading the transition to truly sustainable energy systems. SFU's vision for SEE received strong support from Provincial and Federal Governments, including over \$90 million for a brand-new, world-class facility to host the program and provide critical research infrastructure to drive sustainable energy innovation. SEE faculty are engaged in diverse fields of energy-related research, from developing nano-materials for CO<sub>2</sub> conversion to continental-scale modelling of energy systems. Clean transportation is a key pillar of the SEE program that dovetails perfectly with BC Ferries' aim of decarbonizing their fleet.

The Island Class electrification project fits well within SEE's core mission and the research expertise of our faculty. We envision SEE playing a key role in driving the long-term and wider benefits of this project, by providing:

- world-leading technical expertise in energy systems and the interactions between transportation technologies and wider societal use of energy;
- wide dissemination of results at industrial, policy, and academic forums nationally and globally, driving growth and raising the profile of Canada's clean-tech industry;

- evaluation of the role of policies and incentives in maximizing environmentally friendly development that provides benefits to society, with many benefits accruing to remote/island communities; and
- training, development, and inspiration of the next generation of energy engineers, through the active involvement of undergraduate and post-graduate engineering students in key parts of the project.

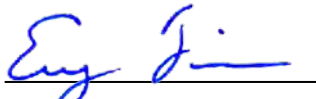
We would like to particularly highlight the value that this project will provide in training future leaders in clean energy technologies, a key enabler of future economic growth and job creation. We foresee a wide range of experiential learning interactions between our students and the BC Ferries team. Opportunities will range from undergraduate course projects and co-op employment to long-term post-graduate collaborative research projects and internships. The project would also underpin multiple opportunities with affiliated organizations in the public and private sectors, from technology development to system modelling to policy analysis. Similarly, SFU will be offering sustainable-energy focused course-based and professional graduate degrees that the project's industry experts can access for career-boosting training. All these interactions will focus on developing a robust long-term environment for low-carbon energy activities in the marine sector while driving skills development, job creation, and economic growth.

In closing, SFU is pleased to express our strong support for this initiative and we look forward to our SEE faculty complement and students supporting BC Ferries in this timely and immensely valuable project.

Best regards,



Dr. Kevin Oldknow, P.Eng.  
Director, School of Sustainable  
Energy Engineering



Dr. Eugene Fiume  
Dean, Faculty of Applied  
Sciences



Dr. Dugan O'Neil  
Vice-President, Research and  
International (pro tem)

January 11, 2021

The Right Honourable Justin Trudeau, P.C., M.P.  
Prime Minister of Canada  
80 Wellington Street  
Ottawa, ON K1A 0A2

**SUBJECT: Support for electrification of vessels and supporting infrastructure across Canada's Pacific Coast**

Dear Prime Minister Trudeau,

On behalf of the South Island Prosperity Partnership (SIPP) in Greater Victoria, BC, please accept our support for the electrification of BC Ferries' Island Class vessels and their associated terminals; which will aid economic recovery while reducing GHG emissions of our country's and province's transportation system.

As the economic development alliance for the Greater Victoria region, SIPP convened hundreds of organizations and businesses (along with municipal, provincial, federal and First Nations governments) in discussions about meaningful and inclusive recovery from the COVID-19 pandemic. The key themes that emerged from this work were captured in the *Reboot: Greater Victoria's Economic Recovery Plan 2020-2022* report and the need for a clean economy while also investing in the future workforce to ensure nobody gets left behind was loud and clear.

To aid this clean recovery, SIPP strongly encourages the provincial and federal governments to invest in BC Ferries' electrification initiative. Every dollar invested in this project will generate economic and environmental benefits to British Columbian communities. Moreover, companies that will source material and equipment for this project will have significant Canadian content throughout their value chain creating jobs in industries such as ship-repair, heavy and civil construction, and leading-edge technical consulting. Many of these industries employ highly skilled individuals.

We are confident the electrification of BC Ferries' terminals and vessel conversions can be a key part of Canada's economic recovery, while also having a lasting and positive impact. Please connect with me anytime by phone (250-891-9220) or email [ederosenroll@southislandprosperity.ca](mailto:ederosenroll@southislandprosperity.ca) to discuss further.

Sincerely,



Emilie de Rosenroll  
CEO

C.C. The Honourable Catherine McKenna, P.C., M.P., Minister of Infrastructure and Communities

901-747 Fort Street, Victoria BC, V8W 3E9 | (778) 265-8128 | [office@southislandprosperity.ca](mailto:office@southislandprosperity.ca)

The Honourable Jonathan Wilkinson, P.C., M.P., Minister of Environment and Climate Change

The Honourable Chrystia Freeland, P.C., M.P., Deputy Prime Minister and Minister of Finance

The Honourable Rob Fleming, Minister of Transportation and Infrastructure, Government of British Columbia

The Honourable George Heyman, Minister of Environment and Climate Change, Government of British Columbia

The Honourable Selina Robinson, Minister of Finance, Government of British Columbia

Mark Collins, CEO, BC Ferries

901-747 Fort Street, Victoria BC, V8W 3E9 | (778) 265-8128 | [office@southislandprosperity.ca](mailto:office@southislandprosperity.ca)

March 8<sup>th</sup>, 2021

Lorien Melnick  
Manager, Indigenous Relations  
Strategy & Community Engagement  
British Columbia Ferry Services Inc.

Re: BC Ferries Island Class Electrification Project

Please accept this letter as a response to the email sent to the Tla'amin Nation on January 7<sup>th</sup>, 2021 requesting support for an application to the federal government for a ferry electrification initiative. We understand that the deadline for this application has passed but would like to thank BC Ferries for the information and request follow-up correspondence as the project progresses.

The description of the initiative includes a process to fully electrify the Island Class vessels and connecting terminals. The expected results of the project include a reduction in GHG emissions, improvement to air quality, reduction in sea noise, and several economic and green innovation benefits.

This preliminary information does appear to show great benefits to the economy and environment. The Nation would be interested in pursuing economic partnerships and employment opportunities that may come from this initiative. Any additional information would be appreciated as it becomes available. We would also like to ensure that we are informed of any environmental assessments or expected impacts that may occur during the life of the project.

Sincerely,



Shawn Tougas  
Referrals Co-ordinator  
Tla'amin Nation

shawn.tougas@tn-bc.ca  
(604) 413-7020

cc:

John Hackett – Hegus, Tla'amin Nation  
Rod Allan – CAO, Tla'amin Nation  
Denise Smith – Manager of Lands and Resources, Tla'amin Nation



January 27, 2021

The Right Honourable Justin Trudeau, P.C., M.P.  
Prime Minister of Canada  
80 Wellington Street  
Ottawa, ON K1A 0A2

Dear Prime Minister,

On behalf of Tourism Vancouver Island, I am writing to urge you to financially support the electrification of BC Ferries' Island Class vessels and their associated terminals. This project would enable the conversion of Island Class ferries from diesel-electric hybrid to all electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers. The project also closely aligns with the responsible travel and sustainability priorities of Tourism Vancouver Island and our stakeholders.

This effort would significantly boost the regional economy at a time when it needs it most. Every dollar invested in this project will generate economic benefits to British Columbian communities. Moreover, companies that will source material and equipment for this project will have significant Canadian content throughout their value chain.

The electrification of BC Ferries' terminals and vessel conversions create jobs in industries such as ship repair, heavy and civil construction, and leading-edge technical consulting. Many of these industries employ highly skilled individuals.

Furthermore, the electrification of BC Ferries' terminals and vessels will help British Columbia and Vancouver Island to reduce travel related emissions and to position the region as a more sustainable destination. Tourism Vancouver Island and its partners have prioritized the development of a more responsible and sustainable tourism industry. An investment in BC Ferries' electrification would advance our region's vision for a more balanced tourism industry.

Canada will need to make sound strategic decisions as it looks to re-energize its economy in a post-COVID environment. We are confident the electrification of BC Ferries' terminals and vessel conversions will have a lasting and positive impact. We urge the government to financially contribute to its success.

Sincerely,

A handwritten signature in black ink, appearing to read "Anthony Everett", is placed above the printed name.

Anthony Everett  
President & CEO

CC The Honourable Catherine McKenna, P.C., M.P., Minister of Infrastructure and Communities  
The Honourable Jonathan Wilkinson, P.C., M.P., Minister of Environment and Climate Change  
The Honourable Chrystia Freeland, P.C., M.P., Deputy Prime Minister and Minister of Finance  
The Honourable Rob Fleming, Minister of Transportation and Infrastructure, Government of British Columbia  
The Honourable George Heyman, Minister of Environment and Climate Change, Government of British Columbia  
The Honourable Selina Robinson, Minister of Finance, Government of British Columbia  
Mark Collins, CEO, BC Ferries

January 12, 2021

The Right Honourable Justin Trudeau, P.C., M.P.  
Prime Minister of Canada  
80 Wellington Street  
Ottawa, ON K1A 0A2

Dear Prime Minister,

On behalf of Transition Salt Spring, I am writing to express our strong support of the **BC Ferries Island Class electrification project** and urge the federal government to provide necessary financial funding for this important project.

The project is timely. Transition Salt Spring is preparing to publicly the **Salt Spring Island Climate Action Plan** for our community which calls for the electrification of our ferries by 2030. As of 2018, ferries serving Salt Spring Island generated 17,400 tonnes CO<sub>2</sub>e annually – one of the single largest sources of emissions for Salt Spring Island, behind passenger vehicles.

Electrifying the Island Class ferries would reduce emissions in this category by 95%, contributing significantly to Salt Spring Island's overall target of a 50% reduction in GHG emissions by 2030, and electrification of the Vesuvius to Crofton route would be a great step in the right direction.

Electrification also brings the following co-benefits:

- The dramatically-lower noise profiles of electrified marine vessels help our endangered resident and our transient orcas navigate our waters more safely and reenforce the leadership position that our federal and provincial governments are taking with respect to marine environmental protection.
- The project provides a valuable opportunity to collaborate with BC Ferries on a community decarbonisation strategy that incorporates local resident and business perspectives.
- Is a key opportunity to strengthen community resilience by adapting a key piece of infrastructure in the face of climate change.

Addressing the Climate Emergency is one of the most urgent challenges facing our province and, indeed, all of Canada. This project would be a first on Canada's west coast and represents an effective high profile step in the transition to a low carbon future.

In closing, this project has our full support and we urge the federal government to financially contribute to its success.

Sincerely,



Bryan Young  
President  
bryan@transitionsaltspring.com

c.c.: The Honourable Catherine McKenna, P.C., M.P., Minister of Infrastructure and Communities  
The Honourable Jonathan Wilkinson, P.C., M.P., Minister of Environment and Climate Change  
The Honourable Chrystia Freeland, P.C., M.P., Deputy Prime Minister and Minister of Finance  
The Honourable John Horgan, Premier, Government of British Columbia  
The Honourable Rob Fleming, Minister of Transportation and Infrastructure, Government of British Columbia  
The Honourable George Heyman, Minister of Environment and Climate Change, Government of British Columbia  
The Honourable Selina Robinson, Minister of Finance, Government of British Columbia  
Mark Collins, CEO, BC Ferries

January 11, 2021

The Right Honourable Justin Trudeau, P.C., M.P.  
Prime Minister of Canada  
80 Wellington Street  
Ottawa, ON K1A 0A2

**Re. BC Ferries electrification of Island Class vessels**

Dear Prime Minister,

On behalf of the Greater Victoria Chamber of Commerce, I am writing to urge you to financially support the electrification of BC Ferries' Island Class vessels and their associated terminals. This project would enable the conversion of Island Class ferries from diesel-electric hybrid to all electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers.

This effort would significantly boost the regional economy at a time when it needs it most. Every dollar invested in this project will generate economic benefits to British Columbian communities. Moreover, companies that will source material and equipment for this project will have significant Canadian content throughout their value chain.

The electrification of BC Ferries' terminals and vessel conversions create jobs in industries such as ship repair, heavy and civil construction, and leading-edge technical consulting. Many of these industries employ highly skilled individuals.

Canada will need to make sound strategic decisions as it looks to re-energize its economy in a post-COVID environment. We are confident the electrification of BC Ferries' terminals and vessel conversions will have a lasting and positive impact. We urge the government to financially contribute to its success.

Sincerely,

A handwritten signature in dark ink, appearing to read "Bruce Williams". The signature is fluid and cursive, with the first name "Bruce" and last name "Williams" clearly distinguishable.

Bruce Williams  
CEO,  
Greater Victoria  
Chamber of Commerce

C.C.    The Honourable Catherine McKenna, P.C., M.P., Minister of  
Infrastructure and Communities  
The Honourable Jonathan Wilkinson, P.C., M.P., Minister of Environment and Climate Change  
The Honourable Chrystia Freeland, P.C., M.P., Deputy Prime Minister and Minister of Finance  
The Honourable Rob Fleming, Minister of Transportation and Infrastructure, Government of  
British Columbia  
The Honourable George Heyman, Minister of Environment and Climate Change, Government of  
British Columbia  
The Honourable Selina Robinson, Minister of Finance, Government of British Columbia  
Mark Collins, CEO, BC Ferries



January 18, 2021

The Right Honourable Justin Trudeau, P.C., M.P.  
Prime Minister of Canada  
80 Wellington Street  
Ottawa, ON K1A 0A2

Dear Prime Minister Trudeau,

On behalf of the Vancouver Island Economic Alliance, I am writing to encourage financial support for electrification of BC Ferries' Island Class vessels and their associated terminals. This project will accelerate plans to enable conversion of Island Class ferries from diesel-electric hybrid to all electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers.

This project will significantly boost the regional economy at a time when it needs it most. Investment in this project will generate direct economic benefits to coastal communities throughout the Vancouver Island and Gulf Island region. In addition, companies contracted for this work will have significant Canadian materials and equipment throughout their value chains.

The electrification of BC Ferries' terminals and vessel conversions will create jobs in industries such as ship repair, heavy and civil construction, and leading-edge technical consulting. Many of these industries employ highly skilled individuals.

Full electrification as proposed is embedded in the long-range plans of BC Ferries and we are confident the electrification of BC Ferries' terminals and vessel conversions will have a lasting and positive impact. Current circumstances necessitating government infrastructure investment, especially to assist rural economies, now serve to shorten the technical horizon and achieve GHG reductions while also mitigating diesel engine noise impacts on marine life.

Sincerely,

George Hanson, President & CEO  
[george@viea.ca](mailto:george@viea.ca), 250-667-5225

PS: Thank you again for providing a personalized video message for the virtual 2020 'State of the Island' Economic Summit.

C.C. The Honourable Catherine McKenna, P.C., M.P., Minister of Infrastructure and Communities  
The Honourable Jonathan Wilkinson, P.C., M.P., Minister of Environment and Climate Change

The Honourable Chrystia Freeland, P.C., M.P., Deputy Prime Minister and Minister of Finance

The Honourable Rob Fleming, Minister of Transportation and Infrastructure, Government of British Columbia

The Honourable George Heyman, Minister of Environment and Climate Change, Government of British Columbia

The Honourable Selina Robinson, Minister of Finance, Government of British Columbia  
Mark Collins, CEO, BC Ferries



**THE CORPORATION OF THE VILLAGE OF ALERT BAY**  
15 Maple Road- Bag Service 2800, Alert Bay, British Columbia V0N 1A0  
TEL: (250)974-5213 FAX: (250) 974-5470  
mail: [officeclerk@alertbay.ca](mailto:officeclerk@alertbay.ca) Web: [www.alertbay.ca](http://www.alertbay.ca)

February 16, 2021

Mark Collins  
Chief Executive Officer, BC Ferries  
Suite 500 – 1321 Blanshard Street  
Victoria, BC V8W 0B7

Dear Mark,

On behalf of the Alert Bay Council, I am writing to express our support for the electrification of BC Ferries' Island Class vessels project – given that there will be no plans to change the homeport of Alert Bay.

This project would enable the conversion of Island Class ferries from diesel-electric hybrid to all electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers. Thus, reducing greenhouse gases.

This effort would significantly boost our economy at a time when we need it most. Every dollar invested in this project will exponentially generate benefits to our community.

We are confident the electrification of our BC Ferry terminal and vessel conversion will have a lasting and positive impact on the North Island.

Sincerely,

Dennis Buchanan, Mayor  
Village of Alert Bay

**WE WAI KAI NATION**  
**690 Headstart Crescent**  
**Campbell River, BC**  
**V9H 1P9**



Jan 29, 2021

Mark Collins  
Chief Executive Officer, BC Ferries  
Suite 500 – 1321 Blanshard Street  
Victoria, BC V8W 0B7

Dear Mr. Collins:

On behalf of the We Wai Kai Nation, I am writing to express our support for the proposed electrification of BC Ferries' Island Class vessels and their associated terminals. This project would enable the conversion of Island Class ferries from diesel-electric hybrid to all-electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers.

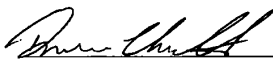
As a First Nation, we value the endangered Southern Resident Killer Whales, Pacific Salmon and all other sea resources within the waters of our territories. We understand that marine electrification of the Island Class ferries will contribute to quieter ship operations that will help reduce noise impacts on local communities and the marine life that we value. We are also supportive of the elimination of air contaminants for cleaner air that will help improve our members health and well-being.

This project would help stimulate the local economy and be of benefit to our members. Lastly, interconnection upgrades also have the potential of benefiting the power grid system by providing three phase power to our First Nation that will support future economic and local business growth.

The people of We Wai Kai Nation have used and occupied the territory where BC Ferries' terminals are located and continue to do so to this day. Although today we express our support in principle of BC Ferries' proposal to electrify the Island Class vessels and their associated terminals, we do, however, reserve the right to be consulted and our support will not be construed as precluding our Nation from bona fide participation in any application, review, or approval process relating to the manner in which BC Ferries' terminals may in the future be constructed, operated, or maintained as a result. We look forward to establishing a good working relationship with BC Ferries in this regard.

We understand that this project would greatly enhance the environmental and socio-economic well-being of our community. Electrification is the way of the future, and we support the electrification of BC Ferries' terminals and vessels and encourage the government to financially contribute to its success. Reducing greenhouse gases and its impacts on climate change are critical and we see this initiative as helping to do that. And, finally, should this initiative receive funding, we would welcome the opportunity to further engage with BC Ferries' to identify any potential economic opportunities or other areas of partnership.

Sincerely,

  
Chief Ronnie Chickite



# Wei Wai Kum First Nation

1650 Old Spit Road, Campbell River, BC, Canada V9W-3E8

Tel.: (250) 286-6949

Fax: (250) 287-8838

TOLL FREE: 1-877-286-6949

January 14, 2021

Mark Collins  
Chief Executive Officer, BC Ferries  
Suite 500 – 1321 Blanshard Street  
Victoria, BC V8W 0B7

Dear Mr. Collins:

On behalf of Wei Wai Kum First Nation, I am writing to express our support for the proposed electrification of BC Ferries' Island Class vessels and their associated terminals. This project would enable the conversion of Island Class ferries from diesel-electric hybrid to all-electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers.

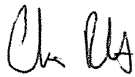
As a First Nation, we value all sea resources within the waters of our territories. We understand that marine electrification of the Island Class ferries will contribute to quieter ship operations that will help reduce noise impacts on local communities and the marine life that we value. Lastly, interconnection upgrades also have the potential of benefiting the power grid system by providing three phase power to our Nation that will support future economic and local business growth.

The Wei Wai Kum people have occupied the territory where BC Ferries' terminals are located since time immemorial. We look forward to our support to this project as a stepping stone of recognition and acknowledgement of our aboriginal rights over this area through relationship arrangements including commissioning of art from our artists and other agreements between Wei Wai Kum and BC Ferries. In addition, Wei Wai Kum has the expectation that the employment generated by this project would be of benefit to our members, as we move out of this COVID-19 age.

Although today we express our support in principle of BC Ferries' proposal to electrify the Island Class vessels and their associated terminals, we do, however, reserve the right to be consulted and our support will not be construed as precluding our Nation from bona fide participation in any application, review, or approval process relating to the manner in which BC Ferries' terminals may in the future be constructed, operated, or maintained as a result. We look forward to establishing a good working relationship with BC Ferries in this regard.

We understand electrification is the way of the future, and we support the electrification of BC Ferries' terminals and vessels and encourage the government to financially contribute to its success. Reducing greenhouse gases and its impacts on climate change are critical and we see this initiative as helping to do that. And, finally, should this initiative receive funding, we would welcome the opportunity to further engage with BC Ferries' to identify any potential economic opportunities or other areas of partnership.

Sincerely,

A handwritten signature in black ink, appearing to read 'Chris Roberts'.

Chris Roberts,  
Chief Councillor

The Right Honourable Justin Trudeau, P.C., M.P.  
Prime Minister of Canada  
80 Wellington Street  
Ottawa, ON K1A 0A2

February 3, 2021

Dear Prime Minister,

On behalf of the WestShore Chamber of Commerce, I am writing to urge you to financially support the electrification of BC Ferries' Island Class vessels and their associated terminals. This project would enable the conversion of Island Class ferries from diesel-electric hybrid to all electric powered vessels by allowing them to seamlessly recharge their batteries during the embarkation and disembarkation of passengers.

This effort would significantly boost the regional economy at a time when it needs it most. Every dollar invested in this project will generate economic benefits to British Columbian communities. Moreover, companies that will source material and equipment for this project will have significant Canadian content throughout their value chain.

The electrification of BC Ferries' terminals and vessel conversions create jobs in industries such as ship repair, heavy and civil construction, and leading-edge technical consulting. Many of these industries employ highly skilled individuals.

Canada will need to make sound strategic decisions as it looks to re-energize its economy in a post-COVID environment. We have no doubt that the electrification of BC Ferries' terminals and vessel conversions will have a lasting and positive impact. We urge the government to financially contribute to its success.

Sincerely,



Julie Lawlor  
Executive Director

c.c. The Honourable Catherine McKenna, P.C., M.P., Minister of Infrastructure and Communities  
The Honourable Jonathan Wilkinson, P.C., M.P., Minister of Environment and Climate Change  
The Honourable Chrystia Freeland, P.C., M.P., Deputy Prime Minister and Minister of Finance  
The Honourable Rob Fleming, Minister of Transportation and Infrastructure, Government of British Columbia  
The Honourable George Heyman, Minister of Environment and Climate Change, Government of British Columbia  
The Honourable Selina Robinson, Minister of Finance, Government of British Columbia  
Mark Collins, CEO, BC Ferries



04 February 2021

TO WHOM IT MAY CONCERN

**RE: Letter of Support for BC Ferries Island Class Ferry Electrification Program**

WWF-Canada is pleased to provide this letter of support to BC Ferries for its proposed *Island Class Ferry Electrification Program*. This bold program seeks to achieve meaningful Greenhouse Gas (GHG) emissions reduction within the BC Ferries fleet and demonstrates the feasibility of a fleet decarbonization transition that is both needed and required.

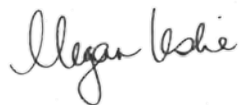
The waters off the Pacific coast where BC Ferries operates are a microcosm where decreasing environmental quality and increasing changes in the ocean are playing out, affecting the wellbeing of wildlife and people in the region. Amidst the dual crises of biodiversity loss and accelerated climate change, initiatives such as this ferry electrification program are more critical than ever. The benefits of a fleet decarbonization transition are not limited to lower GHG emissions, rather, can extend to environmental benefits such as improved local air quality, reduced oil spill risk and quieter ocean space. There are economic benefits related to new vessel builds and associated infrastructure as well as tremendous opportunities for innovation in technology that can protect biodiversity and help us define a new relationship with nature.

Building quieter vessels is an important way to reduce anthropogenic underwater noise impacts on marine life in what is an excessively noisy Salish Sea. The Salish Sea contains critical habitat for the southern resident killer whale, Canada's most endangered whale population and underwater noise is a principal threat, preventing its recovery. Underwater noise is linked to reduced foraging success among southern resident killer whales, which already have difficulty finding enough salmon, their main food source. Constant vessel noise also masks or alters the calls of killer whales, affecting communication and inducing chronic stress. Vessel traffic remains the dominant source of underwater noise in this region.

The Island Class Ferry Electrification Program presents a tangible opportunity to advance quiet ship building, helping Canada create solutions for underwater noise, and lead innovation to catalyze the transition to clean energy. Such initiatives need not only occur; they should be scaled up across the marine transportation sector. This initiative can contribute to BC Ferries own underwater radiated noise management plan and ambitious long term noise reduction goal to reduce underwater noise pollution from its fleet by half.

WWF-Canada enthusiastically supports the proposed Island Class Ferry Electrification Program and encourages all governments and other entities to support and work with BC Ferries to implement this program and meet ambitious goals for decarbonization, underwater noise reduction and realize other associated benefits for both people and nature.

Sincerely,

A handwritten signature in black ink, appearing to read "Megan Leslie". The signature is fluid and cursive, with the first name "Megan" written in a larger, more prominent script than the last name "Leslie".

Megan Leslie

President and CEO



**PORT of  
vancouver**

**Vancouver Fraser  
Port Authority**

January 15, 2021

The Right Honourable Justin Trudeau, P.C., M.P.  
Prime Minister of Canada  
80 Wellington Street  
Ottawa, ON K1A 0A2

Dear Prime Minister,

On behalf of the Vancouver Fraser Port Authority, I am writing to encourage financial support of BC Ferries' Island Class Electrification Program (ICEP), a key initiative towards reducing marine greenhouse gas emissions while boosting the regional economy.

Funding for this project would enable BC Ferries to convert its Island Class fleet from diesel-electric hybrid to all-electric powered vessels, including the provision of innovative, plug-in electric charging facilities, resulting in an estimated 28,000-tonne reduction in annual GHG emissions when fully built out. This project will represent a milestone achievement in the decarbonization of marine activities in Canada – a key step toward helping Canada fulfill its climate commitments of net zero greenhouse gas emissions by 2050.

Importantly, the electrification of these vessels would also help to achieve quieter and cleaner ship operations in the southern resident killer whale (SRKW) critical habitat off British Columbia's coast. On this front, BC Ferries has already played an important role through its participation in the port authority-led Enhancing Cetacean Habitat and Observation (ECHO) Program, which advances initiatives aimed at better understanding and reducing the cumulative effects of commercial shipping activities on at-risk whales.

We are confident the electrification of BC Ferries' Island Class vessels would mark an important step towards meeting Canada's emissions reduction commitments while creating jobs and stimulating the regional economy. We urge the government to financially contribute to its success.

Sincerely,

Robin Silvester,  
President and Chief Executive Officer

cc. The Honourable Omar Alghabra, P.C., M.P., Minister of Transport  
The Honourable Catherine McKenna, P.C., M.P., Minister of Infrastructure and Communities  
The Honourable Jonathan Wilkinson, P.C., M.P., Minister of Environment and Climate Change  
The Honourable Chrystia Freeland, P.C., M.P., Deputy Prime Minister and Minister of Finance  
The Honourable Rob Fleming, Minister of Transportation and Infrastructure, Government of British Columbia  
The Honourable George Heyman, Minister of Environment and Climate Change, Government of British Columbia  
The Honourable Selina Robinson, Minister of Finance, Government of British Columbia  
Mark Collins, CEO, BC Ferries  
Duncan Wilson, VP, Environment, Communities and Government Affairs, VFPA  
Peter Xotta, VP, Planning and Operations, VFPA

100 The Pointe, 999 Canada Place | Vancouver, B.C. Canada V6C 3T4 | portvancouver.com

**Canada**

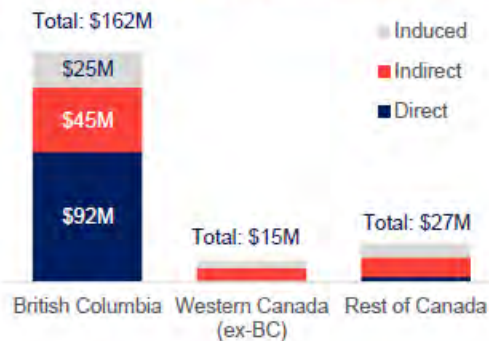
## Appendix D – Economic Impact Assessment Overview

The following charts summarize the findings of the Economic Impact Assessment.<sup>15</sup>

### Economic impact assessment – ICEP Stage 1

By 2024, the economic impacts associated with construction costs of ICEP Stage 1 would include:

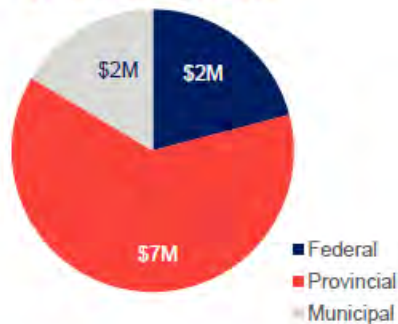
#### \$205M impact on Canadian output



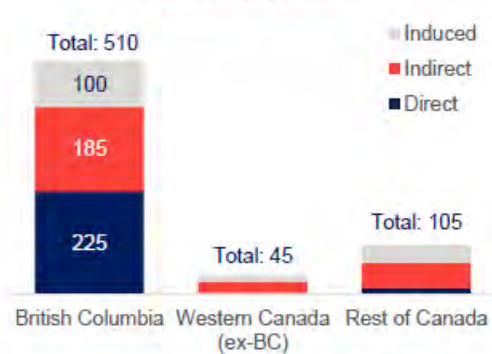
#### \$100M impact on Canadian GDP



#### \$11M in tax revenues



#### 660 jobs created



Note: Western Canada includes Manitoba, Saskatchewan and Alberta. Employment figures are in full-time equivalent jobs. Tax revenues include only indirect taxes and include expected HST tax rebates.  
Source: CPCS estimates based on Statistics Canada IO model.

<sup>15</sup> Reference: CPCS Final Report. Economic Impact Assessment – BC Ferries Island Class Electrification Program, dated February 17, 2021.

## Appendix E – Index of Responses to BC Ferry Commission Questions

### Commissioner's Determinations

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| A. Is the proposed project reasonably required?                                                                                                                                                                                                                                                                                                                                                                                                                                     | <i>Sections 1.1 &amp; 3.7</i>      |
| B. Does the proposed capital expenditure demonstrate good judgment, based on wisdom, experience and good sense?                                                                                                                                                                                                                                                                                                                                                                     | <i>Section 3.7</i>                 |
| C. Does the proposed capital expenditure indicate a wise use of resources?                                                                                                                                                                                                                                                                                                                                                                                                          | <i>Section 3.7</i>                 |
| D. Does the proposed capital expenditure show due consideration for the future?                                                                                                                                                                                                                                                                                                                                                                                                     | <i>Section 3.4.2</i>               |
| E. Has it been demonstrated that the proposed capital expenditure would not reasonably be considered excessive?                                                                                                                                                                                                                                                                                                                                                                     | <i>Section 4.4</i>                 |
| F. Does the proposed capital expenditure provide good value, at a moderate and fair price? Is it affordable?                                                                                                                                                                                                                                                                                                                                                                        | <i>Section 4.4</i>                 |
| G. Is the proposed program reasonably required?<br><br>i) Is the total cost different in any respect from what was approved in the capital plan?<br><br>ii) Is the total cost different in any respect from what was indicated in the BC Ferries' last submission to the Commissioner for price cap setting purposes?<br><br>iii) Does the scope of the proposed capital expenditure differ in any respect from what was included in the latest capital plan approved by the Board? | <i>Sections 1.1, 3.7 &amp; 4.4</i> |

|                                                                                                                                                                                           |                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| H. Is the proposed capital expenditure consistent with the requirements of the Coastal Ferry Services Contract?                                                                           | <i>Sections 1.1 &amp; 3.5</i> |
| I. How does the proposed capital expenditure support the government approved long term vision for the future of coastal ferry services?                                                   | <i>Section 3.5</i>            |
| J. Is the proposed capital expenditure in the public interest? Specifically, does the capital expenditure ensure, or enhance, a ferry service that remains safe, reliable and affordable? | <i>Section 3.6</i>            |
| K. Does the capital expenditure contribute to reduction in GHG emissions?                                                                                                                 | <i>Section 3.4.2</i>          |

#### *Options Analysis – Financial*

|                                                                                                                                                                                            |                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| <ul style="list-style-type: none"> <li>What are the total estimated capital expenditures by year by option?</li> </ul>                                                                     | <i>Section 4.2</i> |
| <ul style="list-style-type: none"> <li>What is the estimated IDC that will be capitalized?</li> </ul>                                                                                      | <i>Section 4.2</i> |
| <ul style="list-style-type: none"> <li>What are the estimated operating costs for each option?</li> </ul>                                                                                  | <i>Section 4.2</i> |
| <ul style="list-style-type: none"> <li>What are the estimated maintenance costs for each option?</li> </ul>                                                                                | <i>Section 4.2</i> |
| <ul style="list-style-type: none"> <li>How were the capital, operating and maintenance cost estimates derived? Entirely with BC Ferries' staff or was there an external review?</li> </ul> | <i>Section 4.3</i> |
| <ul style="list-style-type: none"> <li>Does BC Ferries intend to capitalize any of its own internal costs with respect to the capital expenditure?</li> </ul>                              | <i>Section 4.2</i> |
| <ul style="list-style-type: none"> <li><i>Vessels and Terminals:</i> Does the vessel/terminal design have any impact on labour costs? If so, how?</li> </ul>                               | <i>Section 4.2</i> |

|                                                                                                                                                                                             |             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| <ul style="list-style-type: none"> <li>Is there an allowance in the estimate for inflation from the date of acceptance of a proposal to the completion date (escalation clause)?</li> </ul> | Section 4.2 |
| <ul style="list-style-type: none"> <li>Is the net present value analysis done on a lifecycle basis for relevant comparison of options?</li> </ul>                                           | Section 4.2 |
| <ul style="list-style-type: none"> <li>What is the rationale for the discount rate used?</li> </ul>                                                                                         | Section 4.2 |
| <ul style="list-style-type: none"> <li>Has a sensitivity analysis been done on key assumptions, such as costs, revenues, discount rate, timing and inflation?</li> </ul>                    | Section 4.2 |
| <ul style="list-style-type: none"> <li>What are the major risks? Have they been taken into account in the NPV analysis?</li> </ul>                                                          | Section 4.2 |
| <ul style="list-style-type: none"> <li>How was the contingency amount determined?</li> </ul>                                                                                                | Section 4.2 |
| <ul style="list-style-type: none"> <li>Explain any impact on future price caps.</li> </ul>                                                                                                  | Section 4.4 |

#### *Preferred Option Procurement and Risks*

|                                                                                                                                                                                                                                            |               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <ul style="list-style-type: none"> <li>What is the expected in-service date? How was it determined? How confident is BC Ferries of the in-service date? Will electrification cause any delay in delivery of any of the vessels?</li> </ul> | Section 3.2.3 |
| <ul style="list-style-type: none"> <li>What are the consequences of a delay in the in-service or deployment date?</li> </ul>                                                                                                               | Section 3.2.3 |
| <ul style="list-style-type: none"> <li>What is Plan B if the program is delayed?</li> </ul>                                                                                                                                                | Section 3.2.3 |
| <ul style="list-style-type: none"> <li>What is the estimated impact of the proposed capital expenditure on future price caps assuming no change in non-passenger related revenues?</li> </ul>                                              | Section 4.4   |
| <ul style="list-style-type: none"> <li>Does the proposed program include significant features that are innovative or untried?</li> </ul>                                                                                                   | Section 3.4.4 |

|                                                                                                                                                                                               |               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <ul style="list-style-type: none"> <li>Describe any major risks that could affect the program's success, costs and timely implementation.</li> </ul>                                          | Section 5.3   |
| <ul style="list-style-type: none"> <li>Describe mitigation strategies for major risks that have been identified.</li> </ul>                                                                   | Section 5.3   |
| <ul style="list-style-type: none"> <li>What are the procurement options and process for the vessels and the terminals?</li> </ul>                                                             | Section 5.2.1 |
| <ul style="list-style-type: none"> <li>What are the procurement risks and how will they be mitigated?</li> </ul>                                                                              | Section 5.3.3 |
| <ul style="list-style-type: none"> <li><i>Vessels and Terminals (if applicable):</i><br/>Will BC Ferries require the shipyard/contractor to bear the design and construction risk?</li> </ul> | Section 5.3.2 |

*Other*

|                                                                                                                                                  |             |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| <ul style="list-style-type: none"> <li>Please provide any public feedback you have received on the program.</li> </ul>                           | Section 3.3 |
| <ul style="list-style-type: none"> <li>Will the program have an impact on future vessels and terminals in the long-term capital plan?</li> </ul> | Section 4.3 |