



OFFICE OF THE
BRITISH COLUMBIA
FERRIES COMMISSIONER

ORDER NUMBER: 19-02

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IN THE MATTER OF
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.

BEFORE: Sheldon Stoilen, British Columbia Ferries Commissioner
(the “commissioner”)

ORDER

WHEREAS:

- A. On November 5, 2018 British Columbia Ferry Services Inc. (“BC Ferries”) submitted an application (the “Application”) under section 55(2) of the *Coastal Ferry Act* (the “Act”) seeking the commissioner’s approval of a proposed major capital expenditure for the procurement of four new Island class vessels, one new Salish class vessel and incremental terminal improvements which will enable the retirement of three Bowen class vessels, the *Powell River Queen* (built in 1965), the *Bowen Queen* (built in 1965), and the *Mayne Queen* (built in 1965) in fiscal 2021 (the “Project”);
- B. BC Ferries plans to deploy the first two of the four Island class vessels on the route connecting Campbell River and Quadra Island (“Route 23”) as a direct replacement for the *Powell River Queen*. The other two Island class vessels would be deployed on the route

connecting Nanaimo Harbour and Gabriola Island (“Route 19”) enabling the redeployment of the *Quinsam* to the route connecting Crofton with Vesuvius (“Route 6”), the *Quinitsa* to refit relief, and the retirement of the *Bowen Queen*. The Salish class vessel would replace the *Mayne Queen* and would be deployed, with the *Queen of Cumberland*, on the route connecting Swartz Bay with the Southern Gulf Islands (“Route 5/5A”);

C. Section 55 of the Act governs the commissioner’s consideration of capital deployment and expenditures of ferry operators as follows:

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

D. Pursuant to section 55(5) of the Act, the commissioner established criteria of a major capital expenditure for any new vessel by issuing Order 17-02 dated March 2, 2017 which defines a major capital expenditure for any new vessel as any capital expenditure which exceeds \$50 million, inclusive of component programs and interest during construction;

- E. Upon receipt of the Application, the commissioner placed a public notice on his website and appropriate media inviting comments or submissions regarding BC Ferries' proposed major capital expenditures for the Project;
- F. The commissioner retained the consulting firm of MNP LLP ("MNP") to assist in his review of the Application particularly the financial analysis of the proposed major capital expenditure and the need to replace vessels which BC Ferries submits are nearing the end of their economic lives;
- G. The commissioner has reviewed the Application, MNP's report and the comments received from the public and has attached his Findings and Determinations to this order; and
- H. In summary the commissioner has determined that the major capital expenditure proposed in the Application to be:
 - a) reasonable,
 - b) prudent, and
 - c) consistent with:
 - (i) the current Coastal Ferry Services Contract, and
 - (ii) the long term capital plan established by the ferry operator; and

NOW THEREFORE the commissioner orders as follows:

- 1. The proposed major capital expenditure for the Project, as generally described in the Application, is approved subject to the following conditions:
 - a) The maximum amount of the major capital expenditure for the Project is set at the amounts stated in the Application which will be confirmed by a separate confidential order to BC Ferries. The maximum amount will remain confidential until completion of the procurement process or such later date as the commissioner may determine; and
 - b) Prior to signing a final contract with a shipyard for the design and build of the proposed new vessels BC Ferries must satisfy the commissioner that the actual design of the vessels is as generally as described in the Application and the cost does not exceed the maximum amount approved by the confidential order referred to in paragraph 1(a) above.

DATED at Victoria, in the Province of British Columbia, this 7th day of January 2019.

BY ORDER

A handwritten signature in blue ink that reads "S. T. Stoilen". The signature is written in a cursive style with a large initial "S" and "T".

Sheldon Stoilen
British Columbia Ferries Commissioner



FINDINGS AND DETERMINATIONS

FOR ORDER 19-02

In the Matter of 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.

January 7, 2019

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Table of Contents

Background	3
Regulatory Framework	4
Summary of the Application.....	5
Scope of the Review	6
Review Process.....	6
Commissioner’s Findings and Determinations	8
Summary.....	16
Appendices.....	17
Appendix A – MNP Report	
Appendix B – Public Notice	
Appendix C – Public Comments	



FINDINGS AND DETERMINATIONS FOR ORDER 19-02

In the Matter of 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.

Background

On November 5, 2018 British Columbia Ferry Services Inc. (“BC Ferries”) submitted an application (the “Application”) under section 55(2) of the *Coastal Ferry Act* (the “Act”) seeking the commissioner’s approval of a proposed major capital expenditure for the procurement of four new Island class vessels, one new Salish class vessel and incremental terminal improvements which will enable the retirement of the Powell River Queen (built in 1965), the Bowen Queen (built in 1965), and the Mayne Queen (built in 1965) in fiscal 2021 (the “Project”).

BC Ferries plans to deploy the first two of the four Island class vessels on the route connecting Campbell River and Quadra Island (“Route 23”) as a direct replacement for the Powell River Queen. The other two Island class vessels would be deployed on the route connecting Nanaimo Harbour and Gabriola Island (“Route 19”) enabling the redeployment of the Quinsam to the route connecting Crofton with Vesuvius (“Route 6”), the Quinitsa to refit relief, and the retirement of the Bowen Queen. The Salish class vessel would replace the Mayne Queen and

would be deployed, with the Queen of Cumberland, on the route connecting Swartz Bay with the Southern Gulf Islands (“Route 5/5A”).

The Application was submitted in accordance with section 55(2) of the Act and the Guidelines for Section 55 Applications established by the commissioner.

Regulatory Framework

Under the Act the commissioner regulates ferry operators by determining price caps for each performance term and approving major capital expenditures. In determining price caps the commissioner includes those capital expenditures that are determined to be reasonable, including capital expenditures that have received approval under Section 55 of the Act.

Section 55 states:

- “(1) Subject to subsections (2) to (5), before deploying capital assets on, or incurring capital expenditures in connection with, a designated ferry route or terminal, the ferry operator may apply to the commissioner and the commissioner must, within one month after the application, declare whether the capital assets proposed to be deployed on, or the capital expenditures proposed to be incurred in connection with, the designated ferry route or terminal are reasonably required.
- (2) A ferry operator must not incur a major capital expenditure without first obtaining the commissioner’s approval of the expenditure.
- (3) A ferry operator may apply to the commissioner for approval of a proposed major capital expenditure and the commissioner must respond to the application within 2 months after its receipt by the commissioner.
- (4) The commissioner may approve a proposed major capital expenditure if the proposed major capital expenditure is
 - (a) reasonable,
 - (b) prudent, and
 - (c) consistent with
 - (i) the current Coastal Ferry Services Contract, and

(ii) any long term capital plan established by the ferry operator.

(5) For the purposes of this section, a capital expenditure of a ferry operator is a major capital expenditure if it meets the criteria

(a) established from time to time by the commissioner, and

(b) most recently provided by the commissioner to the ferry operator.”;

Pursuant to subsection 55(5) of the Act the commissioner established the criteria of a major capital expenditure by issuing Order 17-02 dated March 2, 2017 which defines a major capital expenditure for any new vessel as any capital expenditure which exceeds \$50 million.

As the proposed capital expenditure exceeds \$50 million, Section 55(2) of the Act applies.

Summary of the Application

BC Ferries supplied a number of documents with its Application. Opinions from outside technical experts were appended to the Application, which contained condition reports on the vessels to be retired, financial analyses of the options to life extend or replace these vessels and an analysis of the impacts to traffic on routes 19 and 23. The Application also included a summary of customer feedback from community engagement regarding ferry service between Campbell River to Quadra Island (Route 23) and between Nanaimo Harbour and Gabriola Island (Route 19).

The Application included the estimated total amount of the major capital expenditure for the four Island class vessels and the one new Salish class vessel and incremental terminal modifications. These amounts have been redacted from the Application as shown on BC Ferries’ or the commissioner’s website due to commercially sensitive nature of such information. The commissioner accepts BC Ferries’ position that disclosure of such information could reasonably be expected to harm their negotiating position with shipyards. Accordingly a separate order will be released to BC Ferries with the actual amount of major capital expenditure approved by the commissioner. This separate order shall remain confidential until completion of the procurement process or such later date as the commissioner may determine.

Scope of the Review

The commissioner's review of the Application relies on documents and representations of BC Ferries' management and their consultants, as well as comments received from the public. The review does not constitute an audit but rather an assessment of the reasonableness of the assumptions and analyses underlying the proposed replacement of the Bowen class vessels. In addition, this review does not involve an assessment of proposed design and propulsion system of the proposed new vessels which BC Ferries submits are identical in all substantial respects to previous vessels of the same class approved in previous orders namely Order 13-01 dated July 19, 2013 for three Salish class vessels and Order 17-01 dated February 27, 2017 for two Island class vessels. Accordingly this review is based on the opinions of the same independent naval architect who assisted the commissioner in his review of the previous applications. The review did include an assessment of the reasonableness of the new vessels to handle the estimated future traffic demand on routes 23 and 19.

It is also outside the scope of the commissioner's review to perform due diligence on the procurement process (e.g. by reviewing contract bid documents) other than commenting on the proposed process. In reviewing the Application, as with all other Section 55 applications, the commissioner is mindful of his statutory responsibilities under the Act to balance the interests of ferry users, taxpayers and the ferry operator. In the context of reviewing any application for approval of a major capital expenditure the commissioner is of the view that these interests are protected and balanced if the proposed major capital expenditure meets the criteria set out in section 55(4) above.

Review Process

The commissioner engaged the consulting firm of MNP LLP ("MNP") to provide technical and financial expertise during his review of the Application. MNP in turn engaged, as a subcontractor, Richard Greenwood, to provide naval architectural expertise to review the condition assessment reports of the Bowen class vessels to be replaced and the designs of the new vessels for comparison with previously approved vessels of the same class.

MNP was asked to give their opinions as to whether the information provided by BC Ferries in its Application and subsequent clarifications, reasonably support the proposed Project and whether such capital major capital expenditure is reasonable, prudent and consistent with the current Coastal Ferry Services Contract (“CFSC”) and the long-term capital plan of BC Ferries.

MNP was also asked to confirm whether or not BC Ferries had responded adequately in their Application to the commissioner’s Section 55 Application Guidelines. MNP examined the Application and the index and the cross reference of BC Ferries’ responses to the commissioner’s Section 55 guidelines contained therein. MNP is satisfied that the explanations and information provided by the company are satisfactory and do support the proposed major capital expenditure.

In conducting this review the commissioner has carefully considered the opinions of MNP and its subcontractor in reaching his own determinations regarding the Application. The commissioner also considered the public comments regarding the Application which are attached hereto.

In accordance with Section 55 the commissioner is required to determine whether the proposed capital expenditures to be incurred in connection with the designated ferry routes are reasonably required and whether the proposed major capital expenditure is:

- 1) Reasonable as defined in the commissioner’s s.55 Application Guidelines;
- 2) Prudent as defined in the commissioner’s s. 55 Application Guidelines;
- 3) Consistent with the current Coastal Ferry Services Contract and the long term capital plan of the ferry operator.

For purposes of applying the requirements of section 55 the commissioner is guided by the following definitions as stated in the s.55 Application Guidelines:

“Reasonable”, is defined as:

“An intelligent approach supported or justified by reason; fair, proper, sound behavior that avoids needless error and steers clear of extremes.” (BusinessDictionary.com)

“Prudent”, is defined as:

“Good judgment or wisdom gained from experience, expressed in a realistic and frugal attitude. Prudence, however, is not the same as grave caution or wariness concerned only with preserving

the status quo.” (BusinessDictionary.com)

The commissioner’s determinations are also guided by Order 17-02 which states that applications for approval of a major capital expenditure will be based on whether or not the proposed capital expenditure project is:

- a) reasonable, affordable and prudent,
- b) consistent with the twelve-year capital plan submitted to the commissioner under section 64.1 for the current performance term;
- c) consistent with the current Coastal Ferry Services Contract; and
- d) consistent with any government long term vision for the future evolution of coastal ferry services.

In reviewing the Application the commissioner identified the following issues that warranted consideration in his determination of whether to approve the proposed major capital expenditure:

1. Are the Bowen class vessels nearing the end of their economic life and do they need to be either life extended or replaced?
2. Is the preferred option for new replacement vessels reasonable, affordable and prudent?
3. Is the preferred option consistent with the Coastal Ferry Services Contract and BC Ferries’ most recent long term capital plan?
4. Was BC Ferries' community engagement process adequate to support the preferred option and do the public comments submitted to the commissioner support the preferred option?
5. Is the proposed procurement process consistent with generally accepted good practice and consistent with BC Ferries’ normal process for large capital projects?

Commissioner’s Findings and Determinations

Upon review of the Application and consideration of the opinions expressed in MNP’s report and in the public comments, the commissioner has made the following determinations:

1) *Are the Bowen class vessels nearing the end of their economic life and do they need to be either life extended or replaced?*

The three Bowen class vessels referred to in the Application were independently surveyed by Lloyd's Register to assess their condition. For each vessel they have reported in their vessel condition assessment report that

“Given the age of the vessel and evident deterioration, machinery and equipment upgrades are now necessary in order to comply with recent safety standards and pollution requirements.”

MNP have further advised that *“the application and the vessel condition reports make a reasonable case for replacement of three Bowen class vessels rather than service life extension. In particular, the age and condition of the 1965 vessels are reportedly factors that increase the risk of premature asset failure and service disruption.”*

Accordingly the commissioner finds the replacement or life extension of the Bowen class vessels to be reasonably required in order to avoid the risk of further declines in their reliability.

2) *Is the preferred option for the new replacement vessels reasonable, affordable and prudent?*

In its Application BC Ferries has presented three options for the replacement of the Powell River Queen, Bowen Queen and Mayne Queen:

Option 1: Life extend the three existing vessels for 10 years and then replace them with four Island class vessels and one Salish class vessel;

Option 2: Replace the two existing vessels on Routes 23 and 19 with two Shuttle class vessels and the existing vessel on Route 5 with one Salish class vessel; or

Option 3: Replace the two existing vessels on Routes 23 and 19 with four Island class vessels and the existing vessel on Route 5 with one Salish class vessel.

Although the net present value analysis of the three options indicates that Option 3 has the highest net present value, BC Ferries submits that Option 3 is the preferred option for the following reasons:

- A. It furthers fleet standardization objectives, enabling flexibility and scalability in vessel scheduling, and a consistent service offering, even during refits.
- B. Deployment of Island class vessels to Routes 23 and 19 would:
 - i) provide sufficient capacity to meet current and forecast peak season traffic demand on these routes;
 - ii) enable an increase in scheduled sailing frequency and flexibility, and would result in an increase in annual capacity provided;
 - iii) allow for more commuter sailings, with more capacity provided during peak travel hours when needed;
 - iv) provide for greater foot passenger capacity;
 - v) provide the capability to operate on any near Coastal 2 route and would not be limited to, nor designed specifically for, any particular region;
 - vi) support vessel commonality which in turn will improve interoperability, thus resulting in lower training, supply chain, procurement and operating costs; and
 - vii) meet community expectations which, when asked to identify their preference for one larger vessel or two smaller vessels, participants indicated a strong preference for the two smaller Island class vessels.

The commissioner has previously encouraged greater fleet standardization in order to increase interoperability and efficiency. Over time this will reduce capital and operating costs of the ferry system thus reducing pressure on future price caps. BC Ferries has embraced fleet standardization in their Fleet Master Plan and this strategy appears to be in alignment with the government's previously stated objectives or vision of a coastal ferry service that is affordable, efficient and sustainable. Accordingly the commissioner supports the greater standardization of vessels as proposed by BC Ferries in their Application. Option 1 would also lead to future standardization but only after the 10 year life extension of the existing Bowen class vessels. Option 2 would also result in fleet standardization but

only after additional Shuttle class vessels are added to the fleet. Option 3 accelerates fleet standardization by adding four identical vessels to an existing class of vessels by the time they are delivered. Accordingly the preferred option (Option 3) of procuring vessels in the same class of vessels recently approved for certain minor routes meets the definition of being reasonable as it is *“an intelligent approach supported or justified by reason; fair, proper, sound behavior that avoids needless error and steers clear of extremes”*.

The commissioner also finds that, despite the fact that the preferred option has the highest net present value (“NPV”), it still meets the definition of being prudent as *“good judgment or wisdom gained from experience, expressed in a realistic and frugal attitude. Prudence, however, is not the same as grave caution or wariness concerned only with preserving the status quo”*. In the context of s. 55 applications seeking the commissioner’s approval of major capital expenditures, the commissioner is of the view that “prudence” does not mean that the lowest NPV option should, by default, be the preferred option in all cases.

MNP has noted in their report that:

“Although Option 3 carries the highest NPV, it represents the lowest total project expenditure. The higher NPV is attributable to the discount rate and delay in significant cashflows for Option 1, the 10-year life extension of the Bowen class vessels prior to their replacement with one Salish class and four Island class Vessels. The NPV for Option 1 carries considerably higher risk and uncertainty than Option 3.”

The commissioner agrees with MNP’s assessment of Option 1 and believes that other factors should be considered such as future benefits or efficiencies not identified in an NPV analysis. The NPV analysis does not assume conversion to all electric propulsion for the Island class vessels over the 45 year life cycle included in Option 1 and 3 nor for the Shuttle class vessels in Option 2. The commissioner believes that there will be an opportunity to convert to such propulsion perhaps before mid-life of the Island class vessels as technological and infrastructure develops.

The commissioner has also considered whether the preferred option is affordable for ferry users and taxpayers. Affordability is measured in terms of how the major capital

expenditure would impact price caps in the next performance term and beyond. To be affordable any major capital expenditure should not, by itself, drive future price caps significantly above the rate of inflation in the province.

BC Ferries has indicated in their Application that because of the higher capital and operating costs over what was assumed in the forecast model for the current performance term and beyond, the preferred option can be expected to have a slightly greater impact on price caps over the 45-year lifecycle of the four Island class and one Salish class vessels.

After receiving clarifications from BC Ferries, the commissioner is confident that the potential impact of the preferred option on future price caps will be offset by efficiency gains from fleet standardization and the eventual conversion to all-electric propulsion for the Island class vessels. The commissioner will take this into account when setting price caps for future performance terms. Accordingly, the commissioner has determined that the preferred option should not, in itself, drive future price caps significantly above the rate of inflation and is therefore affordable to ferry users and taxpayers.

The commissioner has noted that in its Application, BC Ferries has not stated their intentions regarding the potential conversion to all-electric propulsion for the four new Island class vessels other than providing extra battery space in the construction of the vessels. Given the trend towards all-electric ferries in Northern Europe and elsewhere BC Ferries should soon state their expectations and intentions regarding the potential conversion to all-electric propulsion for the Island class vessels to be deployed on routes 23 and 19.

For these reasons the commissioner finds the preferred option to be prudent because it demonstrates good judgment by proposing replacement vessels with hybrid propulsion systems to take advantage of new technology in LNG and emerging all-electric propulsion.

These determinations are supported by MNP who state in their report that “*Option 3 represents the lowest total project expenditure. However, it carries the highest NPV. The higher NPV is attributable to the discount rate and delay in significant cashflows for Option 1, the 10-year life extension of the Bowen class vessels prior to their replacement with one*

Salish class and four Island class Vessels. The NPV for Option 1 carries considerably higher risk and uncertainty than Option 3. BC Ferries makes a reasonable case that Option 3 provides the best solution to further fleet standardization as well as interoperability objective and the fostering of efficiencies. The future introduction of clean technology across a larger class of vessels should also lead to economies of scale.”

MNP concludes that

“Overall, BC Ferries’ proposal to proceed with Option 3 and invest in the procurement of four new Island class vessels and one new Salish class vessel in 2021 and to retire the Powell River Queen, Bowen Queen and Mayne Queen in fiscal 2022 is reasonable, affordable, prudent and consistent with the Coastal Ferry Services Contract with the Province of BC.”

In addition a previous MNP report dated February 22, 2017 supporting the commissioner’s approval by Order 17-01 of BC Ferries’ procurement of the first two Island class vessels they concluded that:

“The Application is considered a prudent and modest proposal, within current state technology, designed to provide affordable, scalable service. The approach of buying the design rights in order to facilitate future construction to the same or similar design is prudent to maintaining fleet commonality.”

BC Ferries is now in a position to take advantage of this approach by pursuing the preferred option.

3) Is the preferred option consistent with the Coastal Ferry Services Contract and BC Ferries’ most recent long term capital plan?

The commissioner has considered whether the proposed major capital expenditure is consistent with the Coastal Ferry Services Contract (“CFSC”) and with BC Ferries’ most recent long term capital plan which has been submitted as part of BC Ferries’ recent submissions for the next performance term. Schedule A of the CFSC stipulates core service levels for each regulated route expressed as the minimum number of round trips to be delivered per contract year, the minimum number of round trips per day and the minimum hours of operation that BC Ferries must operate. The capacity provided on each designated

ferry route must be sufficient to carry the previous year's traffic (Appendix 1 of Schedule "A" to CFSC).

BC Ferries submits that with the proposed four new Island class vessels and the new Salish class vessel, the company complies with the current CFSC by being able to deliver the core service levels as required under the CFSC and provide sufficient capacity on routes affected by this Application.

The commissioner accepts BC Ferries' submission that it can provide sufficient capacity with two new Island class vessels on both routes 23 and 19 and the new Salish class vessel operating with the Queen of Cumberland on routes 5/5A. Rennie Intelligence reviewed BC Ferries methodology and traffic forecasts and concluded that they are reasonable. The reduction in vessel capacity with the smaller replacement vessels on routes 23 and 19 is more than offset by the proposed increase in frequency of sailings on both routes so overall there is an increase in capacity.

BC Ferries provided MNP with information regarding their most recent long-term capital plan. MNP has confirmed that new replacement vessels and incremental terminal improvements proposed in this Application are included in the long-term capital plan included as part of BC Ferries' the Performance Term Five submission. Accordingly, the commissioner finds that the proposed major capital expenditure as described in the Application is consistent with their most recent long-term capital plan submitted to the commissioner as part of BC Ferries' submission for Performance Term Five.

4) Was BC Ferries' community engagement process adequate to support the preferred option and do the public comments submitted to the commissioner support the preferred option?

The commissioner has reviewed BC Ferries' engagement process outlined in the Application regarding routes 23 and 19 and the results of feedback obtained from ferry users and the local communities. The feedback suggests a strong preference for the two ferry option for ferry service on these routes. Regarding routes 5/5A in the Southern Gulf Islands

BC Ferries submits in its Application that they engaged with the public through the Ferry Advisory Committee process. Specifically BC Ferries states the following in their Application;

“While the design of the vessel will replicate that of the three existing vessels in the class, some improvements that are being applied to the existing ships, such as galley ventilation and improved external door operation, will also be included in the new vessel for Route 5. In addition to addressing these matters, which were among those raised by the Southern Gulf Islands Ferry Advisory Committee, BC Ferries has engaged with the Committee throughout the Mayne Queen vessel replacement process to understand and consider their specific concerns and questions.”

In addition the commissioner reviewed all comments received as a result of his public notice inviting comments on BC Ferries’ Application. All public comments are attached hereto and the majority is supportive of the preferred option recommended by BC Ferries.

Accordingly based on the feedback BC Ferries obtained from their engagement processes and the public comments submitted to the commissioner, the commissioner is satisfied that there is adequate support for the preferred option.

5) Is the proposed procurement process consistent with generally accepted good practice and consistent with BC Ferries’ normal process for large capital projects?

With regard to BC Ferries’ procurement process for the proposed new vessels, the commissioner is satisfied that the proposed process will follow BC Ferries’ procurement policies and practices which were found to be sound during a performance review conducted by the commissioner last year. In March 2018 the commissioner published the performance review report which concluded that:

“Contract mechanisms and vendor management enable BC Ferries to monitor and enforce supplier accountability, further supporting the achievement of value-for-money. Case studies support that tendering and procurement are conducted in compliance with internal policies, free trade requirements, and mandated regulatory approvals. They also encourage supplier participation and competition through open and transparent processes.

Procurement risk management, oversight and assurance practices are strong in delivering

the organization with value-for-money.”

Summary

In summary the commissioner has determined that the proposed major capital expenditure as described in the Application to be:

- (a) reasonable,
- (b) prudent, and
- (c) consistent with
 - (i) the current Coastal Ferry Services Contract, and
 - (ii) any long term capital plan established by the ferry operator.

Accordingly the proposed major capital expenditure is approved subject to a condition that prior to signing a final contract with a shipyard for the construction of the proposed new vessels, BC Ferries must satisfy the commissioner that the actual design of the vessels is as generally described in the Application and the cost does not exceed the maximum amount approved by the confidential order.

APPENDICES:

Appendix 1 – MNP Report

Appendix 2 – Public Notice

Appendix 3 – Public Comments

Section 55 Review

British Columbia Ferry Services Inc.
Application to the
British Columbia Ferries Commissioner
One New Salish Class Vessel and
Four New Island Class Vessels
Routes 5, 19 and 23

January 4, 2019

PLEASE NOTE

Information of a confidential and commercially-sensitive nature has been redacted from this copy of the report

MNP
LLP

Contents

Executive Summary 3

Background..... 5

 Role of the Independent Review 5

 Scope..... 6

 Limitations 6

Approach 7

Analysis of Options..... 8

 Need for New Vessels 8

 Design of New Vessels 8

 Resources and Capital Planning 8

Conclusions..... 11

 Sufficiency of the Application 11

 Reasonableness, Prudence and Consistency of the Application..... 11

Appendix A 1

 Section 55 Questions A-1

 Timing and In-Service Date A-10

 Specific Questions..... A-11

 Wise Use of Resources..... A-13

 Showing Due Consideration for the Future A-14

 Not Excessive A-16

Executive Summary

On November 5, 2018, pursuant to Section 55(2) of the *Coastal Ferry Act*, British Columbia Ferry Services Inc. (“BC Ferries”) applied to the British Columbia Ferries Commissioner (the “Commissioner”) for the procurement of one Salish class and four Island Class Vessels for routes 5, 19 and 23.¹ The Commissioner engaged MNP to conduct an independent review of this Section 55 Application, with a focus on the following aspects:

REVIEW QUESTIONS	SUMMARY RESPONSES
Are the proposed new vessels reasonably required?	Yes
Is the decision to replace reasonable based on the condition of the existing vessels?	Yes
Are the design characteristics of the proposed new vessels, including the propulsion and fuel system, appropriate and reasonable?	Yes
Are the assumptions used in the analysis of options reasonable?	Yes
Are the replacement vessels a prudent choice (i.e. a wise use of resources, not excessive, and affordable to both build and operate)?	Yes
Are the replacement vessels included in the long-term capital plan which has been approved by the BC Ferries’ Board of Directors?	Yes
Will the proposed new vessels allow BC Ferries to comply with the terms of the current Coastal Ferry Services Contract?	Yes
Are the methodologies and underlying assumptions used in determining future traffic volumes and capacity requirements for the applicable routes reasonable?	Yes
Are the procurement plans appropriate?	Yes
Have risks been identified to a reasonable standard and are mitigation plans sufficient?	Yes
Have all questions in the Commissioner’s guidelines for Section 55 applications been adequately addressed?	Yes
Is the discount rate used to calculate life cycle costing appropriate and reasonable?	Yes
Overall, is the business case for the replacement vessels reasonable?	Yes
Does the preferred option provide the best net present value (“NPV”)?	No

Upon completion of the review, it was found that:

- Option 3, the procurement of one Salish class and four Island Class Vessels to replace three Bowen class vessels, is reasonable, prudent and consistent with the Coastal Ferry Services Contract;

¹ The procurement of these vessels will enable the retirement of the *Mayne Queen*, *Powell River Queen* and *Bowen Queen*.

- Although Option 3 carries the highest NPV, it represents the lowest total project expenditure. The higher NPV is attributable to the discount rate and delay in significant cashflows for Option 1, the 10-year life extension of the Bowen class vessels prior to their replacement with one Salish class and four Island Class Vessels. The NPV for Option 1 carries considerably higher risk and uncertainty than Option 3.
- The preferred option provides a reasonable long-term solution and aligns with BC Ferries' fleet renewal program objectives to achieve capital and operating cost savings along with efficiencies through a strategy of vessel standardization;
- The underlying assumptions, volume and capacity analysis as well as procurement and risk mitigation plans are reasonable, sufficient and appropriate; and
- The preferred option to procure vessels is in alignment with the long-term capital plan which has been approved by the BC Ferries' Board of Directors.

Background

The Office of the British Columbia Ferries Commissioner (the “Commissioner”) is a regulatory agency that has been established under the *Coastal Ferry Act* of 2003. The Commissioner’s regulatory mandate is specific to core ferry services and tariffs including those of British Columbia Ferry Services Inc., operating as BC Ferries. As it pertains to the tariffs charged for core ferry services, the Commissioner has the authority to establish a “price cap” that balances the interests of ferry users and tax payers while allowing for the financial sustainability of BC Ferries. The Commissioner also fulfills other key tasks within its directive, including the monitoring of BC Ferries’ adherence to the terms of the Coastal Ferry Services Contract, addressing any circumstances of unfair competitive advantage, monitoring BC Ferries customer complaints process, and the approval of major capital projects.

BC Ferries is a former crown corporation now operating as an independent commercial organization under the *Business Corporations Act*. It is one of the largest passenger ferry line in North America and the world, offering passenger and vehicle service with a fleet of 35 vessels along with 47 terminals covering 25 routes around coastal British Columbia. The transformation from Crown Corporation to an independent commercial entity occurred in April 2003. The Coastal Ferry Services Contract between the Government of British Columbia and BC Ferries defines the service levels required, which as stated above are then monitored by the Commissioner.

Under the *Coastal Ferry Act* (2003), the Commissioner, as noted above, has specific duties to consider capital deployment and expenditures under Section 55. In 2012, Bill 47-2012, the *Coastal Ferry Amendment Act*, was enacted replacing the original Section 55 with:

- (2) A ferry operator must not incur a major capital expenditure without first obtaining the Commissioner's approval of the expenditure.*
- (3) A ferry operator may apply to the Commissioner for approval of a proposed major capital expenditure and the Commissioner must respond to the application within 2 months after its receipt by the Commissioner.*
- (4) The Commissioner may approve a proposed major capital expenditure if the proposed major capital expenditure is
 - (a) reasonable,*
 - (b) prudent, and*
 - (c) consistent with:
 - (i) the current Coastal Ferry Services Contract, and*
 - (ii) any long-term capital plan established by the ferry operator.***

For purposes of section 55(5), a major capital expenditure for a new vessel or mid-life upgrade to a vessel is defined as exceeding \$50 million, inclusive of component programs and interest during construction.

Role of the Independent Review

BC Ferries applied to the Commissioner on November 5, 2018 pursuant to Section 55 of the *Coastal Ferry Act* (2003). The application proposed the procurement of one Salish Class and four Island Class Vessels for routes 5, 19 and 23, pursuant to Section 55 (2) of the *Coastal Ferry Act*. The procurement of these vessels would enable the retirement of the Mayne Queen, Powell River Queen and Bowen Queen. The Commissioner engaged MNP to review this application in accordance with Section 55 of the *Coastal Ferry Act*.

Scope

The scope of the Section 55 Independent Review included the following:

- Review of documentation related to the Section 55 Application from November 5, 2018;
- Meetings with the BCFS project team to clarify details of the Section 55 Application and business case;
- Review of additional supporting materials;
- Regular status updates with the Commissioner;
- Preparation and review of a findings report with the Commissioner; and
- Preparation of a final report.

Limitations

MNP prepared this report for the exclusive use of the Commissioner to support the assessment of the Section 55 Application by BCFS for four new Island Class and one new Salish Class vessels for Routes 5, 19 and 23.

MNP's work was planned and conducted to assess the reasonableness of the application. MNP did not examine, compile or apply procedures over the financial information used in this report under the requirements of the Chartered Professional Accountants of Canada. As a result, MNP is unable to express assurances on such information except where expressly stated in the report to form part of the scope of our work. Further, this report does not constitute a legal opinion on any matters including the interpretation of the *Coastal Ferry Act* (2003).

MNP did not examine BC Ferries' strategy of fleet standardization including, but not limited to, state, scope of implementation, and realized benefits. Rather, MNP's focused on whether the application fits with, and furthers, BC Ferries' standardization strategy.

The results of this work do not in any way constitute advice or recommendations (and MNP accepts no liability in relation to any such interpretation) regarding any commercial decisions. In addition, this work was not designed to identify and cannot necessarily be expected to disclose defalcations, fraud and other irregularities. As a result, this report does not necessarily include all those matters, which a more extensive or special examination might develop.

The work to provide this report was carried out based on the assumption that information provided to MNP by the management and employees of BCFS was reliable, accurate and complete. We did not subject the information contained in the report to checking or verification procedures except to the extent expressly stated. In no circumstances shall MNP be responsible for any loss or damage, of whatsoever nature, arising from information material to our work being withheld or concealed from us or misrepresented to us by management and employees of BCFS or any other person of whom we may have made enquiries.

Approach

MNP reviewed BC Ferries' Section 55 Application and other supporting documentation to assess if the planned major capital expenditure for procurement of four new Island class vessels and one new Salish class vessel in 2021 coupled with the retirement of the *Powell River Queen*, *Bowen Queen* and *Mayne Queen* in fiscal 2022 is reasonable, affordable, prudent and consistent with the Coastal Ferry Services Contract with the Province of BC.

MNP drew on staff and subcontractors with the professional expertise necessary to conduct a review based on:

- Available documentation including an assessment of vessel design characteristics (i.e., of both the new vessels and old vessels that will potentially be replaced);
- Consultation with BCFS personnel;
- A consideration of the BCFS budget, net present value ("NPV"), and underlying assumptions;
- A check of the analysis of future traffic volumes along with capacity requirements; and
- A detailed appraisal of BC Ferries' Section 55 Application, including the associated analyses and procurement plans for the new vessels.

The review was an iterative process, involving meetings and the submission of multiple sets of questions to BC Ferries. The review sought to ensure that the questions outlined in the Section 55 Guidelines established by the BC Ferry Commissioner were answered with appropriate detail.

Analysis of Options

The following analysis provides additional detail around the responses to questions from the table contained in the Executive Summary section of this document.

Need for New Vessels

Are the proposed new vessels reasonably required, and is the decision to replace vessels reasonable based on the condition of the existing vessels?

The application and the vessel condition reports make a reasonable case for replacement of three Bowen class vessels rather than service life extension. In particular, the age and condition of the 1965 vessels are reportedly factors that increase the risk of premature asset failure and service disruption.

The new Island and Salish class vessels, in turn, will further fleet standardization, enable service flexibility and interoperability, and allow for future conversion to an all-electric, zero emission propulsion.

Design of New Vessels

Are the design characteristics of the proposed new vessels, including the propulsion and fuel system, appropriate and reasonable?

The characteristics of the Island and Salish class vessels are appropriate and reasonable. The vessel design is well within the current state of technology and should lead to a reliable and relatively risk-free outcome, with predictable service performance. The ability for the Island class vessels to accommodate future conversion to an all-electric, zero emission propulsion should also provide long-term technical and financial benefits.

Resources and Capital Planning

Are the assumptions used in the analysis of options reasonable?

The assumptions used in the analysis of options are considered reasonable. The proposed new vessels should reliably achieve the forecast performance.

Are the replacement vessels a prudent choice, i.e. a wise use of resources, not excessive, affordable to both build and operate?

Option 3, the replacement of the Bowen class vessels with one Salish class and four Island Class Vessels, represents the lowest total project expenditure. However, it carries the highest NPV. The higher NPV is attributable to the discount rate and delay in significant cashflows for Option 1, the 10-year life extension of the Bowen class vessels prior to their replacement with one Salish class and four Island Class Vessels. The NPV for Option 1 carries considerably higher risk and uncertainty than Option 3.

The application makes a reasonable case that Option 3 provides the best solution to further fleet standardization and interoperability combined with the potential to generate efficiencies.

Are the replacement vessels a fit with the long-term capital plan which has been approved by the BC Ferries' Board of Directors?

The replacement of the Bowen class vessels was included in BC Ferries' 12-year Capital Plan (Fiscal 2015 to 2026) for performance term four (2016 – 2020) and 12-year Capital Plan (Fiscal 2019 – 2030) submitted for performance

term five (2020 – 2024). As such, the total expenditure, as described in the application, is aligned with the long-term capital planning of BC Ferries.

Compliance with Coastal Ferry Services Contract

Will the proposed new vessels allow BC Ferries to comply with the terms of the current Coastal Ferry Services Contract?

The Island and Salish class vessels comply with the terms of the current Coastal Ferry Services Contract. They will reportedly provide sufficient capacity to meet current and peak season traffic demand. The new vessels should also increase service continuity, reducing the potential of service disruptions resulting from aging systems on existing vessels. The replacement of one vessel with two vessels should also increase the flexibility of service delivery on Routes 19 and 23.

Economic Analysis

Are the methodologies and underlying assumptions used in determining future traffic volumes and capacity requirements for the applicable routes reasonable?

The methodologies and underlying assumptions used in determining future traffic volumes and capacity requirements appear reasonable and supported by specialists. BC Ferries engaged Rennie Intelligence to undertake the Traffic Forecast Validation and McElhanney to provide the Traffic Simulation Modeling.

Procurement Planning

Are the procurement plans appropriate?

The procurement of one Salish class and four Island Class Vessels will build on a Request for Expressions of Interest process used to identify shipyard interest and available capacity within the timeframe envisaged. BC Ferries has yet to issue or receive detailed proposals from shipyards that have been shortlisted as part of the RFPQ process. These proposals, which will be provided by proponents in response to an RFP, will outline a detailed schedule with major milestones listed for each vessel being constructed, and could differ based on each proponent's shipbuilding strategy as well as overall approach to each vessel project.

Have risks been identified to a reasonable standard, and are mitigation plans appropriate?

The underlying assumptions, volume and capacity analysis along with the procurement and risk mitigation plans are reasonable, particularly given that:

- The Island and Salish class vessels meet modern safety, environmental and other standards and requirements, and can be expected to reduce both operational and regulatory risk to BC Ferries.
- BC Ferries has identified price escalation and currency as procurement cost risks.
- The associated budget includes a contingency to address unforeseen cost pressures, including shipyard prices that might exceed current estimates. This will help mitigate against potential cost escalation that may occur during the contracting process. Depending on the magnitude of the cost variance, scope changes may also need to be considered.
- The Request for Proposal process will specify that the contract is to be negotiated to a fixed firm price in Canadian dollars. BC Ferries has adopted this approach for the original build programs for both these classes of vessels.
- Currency fluctuations between submission of this application and contract award have been accounted for with a budget contingency.

Section 55 Questions

Have the questions in the Commissioner's guidelines for Section 55 applications been adequately addressed?

The application adequately addresses the questions in the Commissioner's guidelines for Section 55 applications.

Financial Analysis

Is the discount rate used to calculate life cycle costing appropriate and reasonable?

The discount rate used to calculate life cycle costing was appropriate and reasonable. The business case was built on a full life cycle costing basis, with an NPV being prepared on an estimated 45-year life of the vessels.

Overall is the business case for the replacement vessels reasonable and does the preferred option(s) provide the best NPV?

Overall, BC Ferries' proposal to proceed with Option 3 and invest in the procurement of four new Island class vessels and one new Salish class vessel in 2021 and to retire the *Powell River Queen*, *Bowen Queen* and *Mayne Queen* in fiscal 2022 is reasonable, affordable, prudent and consistent with the Coastal Ferry Services Contract with the Province of BC.

Option 3 represents the lowest total project expenditure. However, it carries the highest NPV. The higher NPV is attributable to the discount rate and delay in significant cashflows for Option 1, the 10-year life extension of the Bowen class vessels prior to their replacement with one Salish class and four Island Class Vessels. The NPV for Option 1 carries considerably higher risk and uncertainty than Option 3.

Option 3 provides a reasonable long-term solution and aligns with BC Ferries' fleet renewal program objectives to achieve capital and operating cost savings along with efficiencies through a strategy of vessel standardization.

Conclusions

MNP was engaged to review BC Ferries' Section 55 Application and other supporting documentation to assess if the planned major capital expenditure for procurement of four new Island class vessels and one new Salish class vessel in 2021 combined with the retirement of the *Powell River Queen*, *Bowen Queen* and *Mayne Queen* in fiscal 2022 is reasonable, prudent and consistent with the Coastal Ferry Services Contract with the Province of BC.

Sufficiency of the Application

BC Ferries' application was supported by the following key external experts:

- Lloyd's Register Canada (Vessel Condition Assessments)
- Rennie Intelligence (Traffic Forecast Validation)
- McElhanney (Traffic Simulation Modeling)

Furthermore, MNP has determined that BC Ferries adequately answered all questions in the Section 55 Application Guidelines.

Reasonableness, Prudence and Consistency of the Application

BC Ferries has indicated a need to replace or life-extend 14 vessels over the next decade. The current BC Ferries' proposal to proceed with Option 3 and invest in the procurement of four new Island class vessels and one new Salish class vessel in 2021 and the retirement of the *Powell River Queen*, *Bowen Queen* and *Mayne Queen* in fiscal 2022 is reasonable. Built in 1965, the three Bowen class vessels will be over 55 years old at time of retirement. They are increasingly costly to keep functioning and pose a higher risk to reliable delivery of service if they are in operation past the planned retirement dates.

Option 3 represents the lowest total project expenditure. However, it carries the highest NPV. The higher NPV is attributable to the discount rate and delay in significant cashflows for Option 1, the 10-year life extension of the Bowen class vessels prior to their replacement with one Salish class and four Island Class Vessels. The NPV for Option 1 carries considerably higher risk and uncertainty than Option 3.

BC Ferries makes a reasonable case that Option 3 provides the best solution to further fleet standardization as well as interoperability objective and the fostering of efficiencies. The future introduction of clean technology across a larger class of vessels should also lead to economies of scale.

The replacement of the Bowen class vessels was included in BC Ferries' 12-year Capital Plan (Fiscal 2015 to 2026) for performance term four (2016 – 2020) and 12-year Capital Plan (Fiscal 2019-2030) submitted for performance term five (2020 – 2024).

The total expenditure, as described in the application, is reasonable, prudent and consistent with the Coastal Ferry Services Contract with the Province of BC.

Appendix A

Section 55 Questions

Assessment	Question	Observations and Reported Information from BC Ferries																								
Adequately Responded	Describe the proposal for the capital expenditure, and provide a comparison to the capital currently in use, in terms, for example, of size, capacity and staff and/or crew requirements.	<p>BC Ferries has indicated a need to replace or life extend 14 vessels over the next decade. The current proposal is to proceed with Option 3 and invest in the procurement of four new Island class vessels and one new Salish class vessel in 2021 and retire the <i>Powell River Queen</i>, <i>Bowen Queen</i> and <i>Mayne Queen</i> in fiscal 2022. Built in 1965, the three Bowen class vessels will be over 55 years old at time of retirement.</p> <p>The first two of the four Island class vessels will be deployed on Route 23 (Campbell River and Quadra Island). The remaining two Island class vessels will be deployed on Route 19 (Nanaimo Harbour to Gabriola Island). The <i>Quinsam</i> will be redeployed to Route 6 (Crofton to Vesuvius), the <i>Quinitsa</i> to refit relief, and the <i>Bowen Queen</i> will be retired.</p> <p>The Salish class vessel will replace the <i>Mayne Queen</i> and be deployed, with the <i>Queen of Cumberland</i>, on Route 5/5A (Swartz Bay – Southern Gulf Islands).</p> <p>This undertaking was included in BC Ferries’ 12-year Capital Plan (Fiscal 2015 to 2026) for performance term four (2016 – 2020) and 12-year Capital Plan (Fiscal 2019-2030) submitted for performance term five (2020 – 2024). BC Ferries submits that the total expenditure, as described in the Application, is reasonable, affordable, prudent and consistent with the Coastal Ferry Services Contract with the Province of BC.</p> <p><u>Route 5/5A</u></p> <table border="1"> <thead> <tr> <th>Specification</th> <th><i>Queen of Cumberland</i></th> <th><i>Mayne Queen</i></th> <th>Salish class</th> </tr> </thead> <tbody> <tr> <td>Current Route</td> <td>5</td> <td>5A</td> <td>9, 9A, 17</td> </tr> <tr> <td>Future Route</td> <td>5A</td> <td>Retire</td> <td>5</td> </tr> <tr> <td>Size</td> <td>96 metres</td> <td>84.96 metres</td> <td>107 metres</td> </tr> <tr> <td>Capacity</td> <td>112 AEQ 385 passengers</td> <td>58 AEQ 193 passengers</td> <td>138 AEQ 386 passengers</td> </tr> <tr> <td>Crew</td> <td>10</td> <td>8</td> <td>15</td> </tr> </tbody> </table>	Specification	<i>Queen of Cumberland</i>	<i>Mayne Queen</i>	Salish class	Current Route	5	5A	9, 9A, 17	Future Route	5A	Retire	5	Size	96 metres	84.96 metres	107 metres	Capacity	112 AEQ 385 passengers	58 AEQ 193 passengers	138 AEQ 386 passengers	Crew	10	8	15
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Adequately Responded	In the case of a new vessel, has an independent marine surveyor provided a condition assessment of the current vessel and is that assessment factored into the business case supporting the requested capital expenditure?	<p>Lloyds Register Marine prepared Vessel Condition Assessment Program Reports for the <i>Bowen Queen</i> and <i>Mayne Queen</i> in 2016 and the <i>Powell River Queen</i> in 2017 with the determination that they were not ideal for life extension. Given the age of the vessels and evident deterioration, Lloyds noted that machinery and equipment upgrades would be necessary in order to comply with safety standards and pollution requirements.</p> <p>These assessments factored into the business case and supported the need for the requested capital expenditure.</p>																																				
Adequately Responded	Is there a regulatory driver for the proposed capital expenditure?	<p>There is no regulatory requirement to retire the Bowen class vessels. However, due to their vintage, the <i>Bowen Queen</i>, <i>Mayne Queen</i>, and <i>Powell River Queen</i> are reportedly challenging and expensive to maintain, carrying a higher risk and documented history of unanticipated machinery failure. While they operate safely and in compliance with regulatory requirements, there are noted service reliability issues despite significant capital and maintenance expenditures.</p> <p><u><i>Bowen Queen</i></u></p> <ul style="list-style-type: none"> • Ongoing extensive steel repairs to hull, particularly the car deck and casings and rub strake • De-rated engine will have accumulated over 100,000 operating hours at retirement • Obsolete engine parts are increasingly unsupportable • Dated electrical and electronic systems are increasingly difficult to maintain • Accessibility and barrier-free transportation issues exist • Potential presence of hazardous materials including asbestos, lead paint, and PCBs 																																				

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Adequately Responded	Provide information on the operating costs of the vessel, terminal, information technology or other capital asset to be replaced and/or to be upgraded, covering the most recent three year period, including the current year	<p>BC Ferries asserts that the acquisition of the Island and Salish class vessels provides greater standardization and interoperability of the fleet combined with lower capital costs and greater operational efficiency for the ferry system overall.</p> <table border="1"> <thead> <tr> <th></th> <th><i>Powell River Queen</i></th> <th><i>Bowen Queen</i></th> <th>Island Class</th> </tr> </thead> <tbody> <tr> <td>Route</td> <td>23</td> <td>Relief</td> <td>19, 23</td> </tr> <tr> <td>Crew</td> <td>8</td> <td>10</td> <td>6</td> </tr> <tr> <td>Fuel consumption</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Annual maintenance</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Annualized refit</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Annual depreciation</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		<i>Powell River Queen</i>	<i>Bowen Queen</i>	Island Class	Route	23	Relief	19, 23	Crew	8	10	6	Fuel consumption				Annual maintenance				Annualized refit				Annual depreciation			
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Assessment	Question	Observations and Reported Information from BC Ferries																																		
	existing capital asset with those expected for the replacement and explain any significant variances.		<i>Mayne Queen</i>	Salish Class																																
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Adequately Responded	Have there been service disruptions due to inadequacy of the existing capital asset?	<p>The history of recorded mechanical incidents is included in the application. Averages for 2009 through 2017 are as follows:</p> <table border="1"> <thead> <tr> <th></th> <th><i>Bowen Queen</i></th> <th><i>Mayne Queen</i></th> <th><i>Powell River Queen</i></th> </tr> </thead> <tbody> <tr> <td>All mechanical incidents</td> <td>12</td> <td>9</td> <td>9</td> </tr> <tr> <td>Mechanical incidents that impacted service</td> <td>5</td> <td>6</td> <td>2</td> </tr> <tr> <td># of sailings</td> <td>5,728</td> <td>5,610</td> <td>11,026</td> </tr> <tr> <td># of delays</td> <td>25</td> <td>38</td> <td>6</td> </tr> <tr> <td>% delays (per sailing leg)</td> <td>0.44%</td> <td>0.67%</td> <td>0.05%</td> </tr> <tr> <td># cancels</td> <td>1.1</td> <td>.22</td> <td>5.33</td> </tr> <tr> <td>% cancels (per sailing leg)</td> <td>0.019%</td> <td>0.004%</td> <td>0.048%</td> </tr> </tbody> </table>				<i>Bowen Queen</i>	<i>Mayne Queen</i>	<i>Powell River Queen</i>	All mechanical incidents	12	9	9	Mechanical incidents that impacted service	5	6	2	# of sailings	5,728	5,610	11,026	# of delays	25	38	6	% delays (per sailing leg)	0.44%	0.67%	0.05%	# cancels	1.1	.22	5.33	% cancels (per sailing leg)	0.019%	0.004%	0.048%
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Adequately Responded	If age of the existing capital asset is a factor, what is the estimate of future costs of continuing its use?	<p>The <i>Bowen Queen</i>, <i>Mayne Queen</i>, and <i>Powell River Queen</i> will all be over 55 years at the time of proposed replacement in 2022. Although the life of these vessels could be extended another decade, BC Ferries asserts that there is significant risk to service continuity due to non-functional machinery or environment, safety and/or regulatory issues. The scope for the life extension of the three vessels would include the replacement or renewal of many of the ships' systems. BC Ferries' cost estimate for that is considered conservative and has a high degree of uncertainty, particularly with respect to asbestos and lead-based paint abatement and steel renewals.</p> <p>There are no up-front shore-side upgrades required for this option.</p> <table border="1"> <thead> <tr> <th>Option</th> <th>Total Project Expenditure (\$million)</th> <th>45-Year NPV</th> </tr> </thead> <tbody> <tr> <td>Option 1:</td> <td></td> <td>(\$663.2 million)</td> </tr> </tbody> </table>			Option	Total Project Expenditure (\$million)	45-Year NPV	Option 1:		(\$663.2 million)																										
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		Option 2: Replace with two Shuttle class vessels and one Salish class vessel		(\$690.7 million)																																				
		Option 3 (<i>preferred</i>): Replace with four Island class vessels and one Salish class vessel		(\$721.9 million)																																				
Adequately Responded	Have there been complaints from the public, or other stakeholders about the existing capital asset?	<p>BC Ferries has received complaints regarding Routes 5/5A, 19 and 23, with the following volume being reported.</p> <table border="1"> <thead> <tr> <th></th> <th>Route 5/5A</th> <th>Route 19</th> <th>Route 23</th> </tr> </thead> <tbody> <tr> <td>2010</td> <td>141</td> <td>43</td> <td>34</td> </tr> <tr> <td>2011</td> <td>195</td> <td>101</td> <td>55</td> </tr> <tr> <td>2012</td> <td>163</td> <td>89</td> <td>47</td> </tr> <tr> <td>2013</td> <td>138</td> <td>56</td> <td>26</td> </tr> <tr> <td>2014</td> <td>151</td> <td>129</td> <td>43</td> </tr> <tr> <td>2015</td> <td>140</td> <td>115</td> <td>67</td> </tr> <tr> <td>2016</td> <td>170</td> <td>60</td> <td>40</td> </tr> <tr> <td>2017</td> <td>133</td> <td>46</td> <td>40</td> </tr> </tbody> </table> <p><u>Route 5/5A</u></p> <ul style="list-style-type: none"> • Customers have reported concerns with frequency of sailings from Swartz Bay to various ports on the Southern Gulf Islands • Customer concerns have also referenced how inter-Southern Gulf Island travel is not convenient or adequate when planning a return voyage on same day • Customers are apparently not able to plan adequately for overloads when departing from the Southern Gulf Islands and cannot make their planned connections • Residents are unable to guarantee a spot on specific sailings • With high traffic volumes, customers are concerned with the ability to get out of their vehicles when loaded too close together • Elevator not provided onboard for access to overhead lounges • The <i>Mayne Queen</i> has fewer amenities than the <i>Bowen Queen</i> or the <i>Queen of Cumberland</i> • Cancellations are contentious and customer inquiries increase 				Route 5/5A	Route 19	Route 23	2010	141	43	34	2011	195	101	55	2012	163	89	47	2013	138	56	26	2014	151	129	43	2015	140	115	67	2016	170	60	40	2017	133	46	40
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Assessment	Question	Observations and Reported Information from BC Ferries
		<p><u>Route 19</u></p> <ul style="list-style-type: none"> • Island residents have reported concerns with overloads and find it is having a negative impact on their businesses located on Gabriola Island • Customers would like increased sailings to decrease wait times, especially in the peak season • Customers are not satisfied with the current schedule and related safety implications of having too many vehicles parked near the terminal • Island residents would like later sailings returning from Nanaimo Harbour to attend activities on Vancouver Island without having to stay overnight • Cancellations are contentious and customer inquiries increase <p><u>Route 23</u></p> <ul style="list-style-type: none"> • There are expressed concerns with sailing delays due to vessel reliability and increased loading and offloading times • Customers would like sailings returning to Quadra Island later in the evening from Campbell River without having to travel the following day • Repeated overloads have resulted in increased commute times for residents of Quadra Island • Delays on Route 23 have resulted in missed connections from Quadra Island to Cortez Island (Route 24) • Lack of connecting sailings between Routes 23 and 24 are an expressed concern • Cancellations are contentious and customer inquiries increase
Adequately Responded	Provide an estimate of the total capital costs associated with the proposed investment.	BC Ferries proposes to invest in the procurement of four new Island class vessels and one new Salish class vessel along with associated onshore upgrades.
Adequately Responded	How was the cost estimate derived? Entirely with BC Ferries' staff or was there an external review?	<p>BC Ferries staff derived the vessel construction cost estimates for the replacement vessels from the following sources:</p> <ul style="list-style-type: none"> • Salish class vessel: Non-binding commercial shipyard estimate and recent previous contract pricing for Salish class vessels

Assessment	Question	Observations and Reported Information from BC Ferries
		<ul style="list-style-type: none"> • Island class vessels: Fixed firm contract cost and identified change orders for the current Island class vessels now under construction • Shuttle class vessels: Market study cost estimate <p>Contingency was added to the cost estimates to account for uncertainty of shipyard selection, negotiations, pricing, foreign exchange risk, change orders during construction, and unidentified spares requirements.</p> <p>Other capital and operating costs related to the replacement vessels were estimated based on the projects for the last two Island class vessels currently under construction and the three Salish class vessels completed in 2017. Adjustments were made to reflect differences between the projects in areas such as the number of vessels constructed, vessel size, crew size, and propulsion system.</p>
Adequately Responded	In the case of a new vessel was the international ship broking industry contacted to determine if there are existing vessels available for purchase that may, with adaptation, be appropriate?	The assessment of the international market of used ships found that no suitable vessels are available. International ship brokers regularly advise BC Ferries of used vessels for purchase and brought forward approximately 24 used vessels for consideration. All were reviewed, but none were determined to meet the requirements for the replacements of the <i>Bowen Queen</i> , <i>Mayne Queen</i> and <i>Powell River Queen</i> due to factors such as age and capacity. Used vessels are generally an effective solution only for specific, one-off requirements.
Adequately Responded	Provide an estimate of the incremental capital costs to provide "ancillary services", including catering and retail concessions, and provide estimates of the incremental operating costs to provide the ancillary services and the incremental revenue expected to be generated from those services.	<p>Not applicable for Island class vessels.</p> <p>Deploying a Salish class vessel on Route 5 would provide for service enhancement through both increased capacity and onboard amenities. While operating on Route 5, the Salish class vessel will offer a basic plus food service as well as retail service. These services offerings would be an enhancement to those now provided on Route 5 by the <i>Queen of Cumberland</i>. No crew incremental to minimum safe manning levels would be required to support the catering and retail service offerings. The Salish class vessel increases Automobile Equivalents, or AEQ, by 26.</p>
Adequately Responded	In the case of a new vessel, demonstrate on a lifecycle cost or present value basis that the	BC Ferries did not undertake this analysis as an assessment of the international market of used ships found that no suitable vessels are available.

Assessment	Question	Observations and Reported Information from BC Ferries																																								
	decision to build a new vessel versus the cost of acquiring a second-hand vessel, if applicable, is a net benefit. Include sensitivity analysis in case of cost overruns.																																									
Adequately Responded	Does the proposal include significant features that are innovative or untried?	The application proposes vessels well within the current state of technology, with no risks associated with innovative or untried features. BC Ferries focussed on standardization and interoperability as well as environmental stewardship. The Island class vessels will be built to allow for conversion to a “zero-emission” operation.																																								
Adequately Responded	Is there an allowance in the estimate for inflation from the date of acceptance of a proposal to the completion date (escalation clause)?	An annual escalation for inflation was applied to all capital and operating costs. A discount rate was used for the NPV analysis.																																								
Adequately Responded	Are financing costs included in the cost estimate between first payment to the supplier and the in-service date?	Yes, financing costs are included in the cost estimate between first payment to the supplier and the in-service date.																																								
Adequately Responded	Compare the operating costs of the existing capital asset with those expected for the replacement, to include, in the case of vessels, fuel costs, crew costs and depreciation.	<table border="1"> <thead> <tr> <th></th> <th><i>Powell River Queen</i></th> <th><i>Bowen Queen</i></th> <th>Island Class</th> </tr> </thead> <tbody> <tr> <td>Route</td> <td>23</td> <td>Relief</td> <td>19, 23</td> </tr> <tr> <td>Crew</td> <td>8</td> <td>10</td> <td>6</td> </tr> <tr> <td>Fuel consumption</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Annual maintenance</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Annualized refit</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Annual depreciation</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th></th> <th><i>Mayne Queen</i></th> <th>Salish Class</th> </tr> </thead> <tbody> <tr> <td>Route</td> <td>5</td> <td>5A</td> </tr> <tr> <td>Crew</td> <td>8</td> <td>15</td> </tr> <tr> <td>Fuel consumption</td> <td></td> <td></td> </tr> </tbody> </table>		<i>Powell River Queen</i>	<i>Bowen Queen</i>	Island Class	Route	23	Relief	19, 23	Crew	8	10	6	Fuel consumption				Annual maintenance				Annualized refit				Annual depreciation					<i>Mayne Queen</i>	Salish Class	Route	5	5A	Crew	8	15	Fuel consumption		
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Assessment	Question	Observations and Reported Information from BC Ferries		
		Annual maintenance		
		Annualized refit		
		Annual depreciation		
Adequately Responded	Does BC Ferries intend to capitalize any of its own internal costs with respect to the capital expenditure?	Yes, in accordance with BC Ferries' financial policies and International Financial Reporting Standards.		
Adequately Responded	Identify any parts of the capital expenditure that are to be provided by BC Ferries or its subsidiaries.	Project management responsibilities will rest with BC Ferries.		
Adequately Responded	In the case of vessels, if tenders are to be sought from foreign shipbuilders, what is the applicability of custom tariffs on importation of the vessels?	Custom tariffs apply to the importation of used vessels, not newly constructed vessels.		
Adequately Responded	In the case of vessels, will BC Ferries require the contracting shipyard to bear the design and construction risk?	<p>The Salish class vessel design has been proven in-service and is considered low risk. The Island class vessel design is complete and two ships in this class are under construction.</p> <p>The design rights to both the Salish class and Island class vessels are held by BC Ferries. The designs for these vessels will be provided to the RFP short-listed shipyards and while there may be some minor design amendments required to meet the evolving regulatory requirements, these will be the responsibility of those shipyards. BC Ferries' strategy is for a design build contract. The successful shipyard(s) will be required to conduct a design check of the package(s) provided, such that design risk is contractually transferred to the shipyard. This mechanism has been used in other contracts by the Canadian government and in situations where the design is provided.</p>		

Timing and In-Service Date

Assessment	Question	Supporting facts, analysis and other information												
Adequately Responded	For new or replacement vessels what is the expected in-service or deployment date and how was it derived?	<p>The estimated timeline is conservative. BC Ferries has yet to issue or receive detailed proposals from shipyards that have been shortlisted as part of the RFPQ process. These proposals, which will be provided by proponents in response to the RFP, will outline a detailed schedule with major milestones listed for each vessel being constructed, and could differ based on each proponent’s shipbuilding strategy as well as overall approach to each vessel project.</p> <table border="1"> <thead> <tr> <th></th> <th>Delivery, Training, Integration</th> <th>In-Service</th> </tr> </thead> <tbody> <tr> <td>Island class vessels 1 and 2</td> <td>Fall 2020</td> <td>Spring 2021</td> </tr> <tr> <td>Island class vessels 3 and 4</td> <td>Summer 2021</td> <td>Winter 2021</td> </tr> <tr> <td>Salish class vessel</td> <td>Summer 2021</td> <td>Fall 2021</td> </tr> </tbody> </table>		Delivery, Training, Integration	In-Service	Island class vessels 1 and 2	Fall 2020	Spring 2021	Island class vessels 3 and 4	Summer 2021	Winter 2021	Salish class vessel	Summer 2021	Fall 2021
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Adequately Responded	Were potential builders, for example shipyards, contacted to determine if the proposed date is reasonable?	<p>A Request for Expressions of Interest was issued to leading shipyards in Canada and around the world in July of 2018. Principal among the objectives was to identify shipyard interest and available capacity to undertake the proposed Island class and Salish class vessel projects within the timeframe envisaged.</p>												
Adequately Responded	What are the consequences of a delay in the in-service or deployment date?	<p>Delays with in-service dates for the replacements of the <i>Bowen Queen</i>, <i>Mayne Queen</i>, and <i>Powell River Queen</i> significantly increase the possibility of service disruptions.</p> <ul style="list-style-type: none"> • The risk of unforeseen operational issues and serviceability can reasonably be expected to increase the longer the Bowen class vessels operate. • Critical spares availability, original equipment manufacturer knowledge and supportability for these aged vessels are already at levels that may compromise service reliability. • Long-range vessel maintenance plans have been glidesloped for the planned in-service dates of the new vessels. • Extending these in-service dates could result in reduced reliability and operational availability of the existing vessels, unless significant investment is undertaken to achieve what can be described as a very short life extension. 												

Assessment	Question	Supporting facts, analysis and other information
		Although not fully quantifiable in either financial or engineering terms, a key consideration is that there is a greater likelihood of a service disruption, and the potential consequences of any such disruption become more significant the longer the vessels remain in service.

Specific Questions

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

Assessment	Question	Observations and Reported Information from BC Ferries
Adequately Responded	Why is the proposed capital expenditure required now, and what are the consequences of any delay?	The <i>Bowen Queen</i> , <i>Mayne Queen</i> , and <i>Powell River Queen</i> were built in 1965 and at their planned retirement age will be well over 55 years old. Even with regular maintenance, refit and dry-docking, service reliability concerns are prevalent. The vessels are costly to keep in operation. The age and overall condition of the vessels are such that a life extension is not considered a prudent investment for any of the three vessels.
Adequately Responded	How has this capital expenditure project been prioritized relative to other capital expenditure projects within the long-term capital plan?	BC Ferries has given this project high priority based on the condition of the assets being replaced and the need to ensure ongoing continuity of service on Routes 5, 19 and 23. BC Ferries uses a two-step prioritization process for capital projects. First, projects are sorted by mandatory and discretionary. Discretionary projects are ranked according to strategic fit and may end up in or out of the plan depending on their ranking, while mandatory projects are given precedence in the plan. BC Ferries deemed these vessel replacements mandatory.
Adequately Responded	What sources of expertise and experience have been relied upon in deciding to proceed with this capital expenditure?	BC Ferries' internal sources of expertise and experience include: <ul style="list-style-type: none"> • An established planning, approval and reporting process • A formal project management framework, guidelines and best practices • A Board of Directors' approved annual 12-year Capital Asset Plan • Formal business cases for all capital projects BC Ferries engaged the following external experts to provide advice on the proposed project: <ul style="list-style-type: none"> • Lloyd's Register Canada (Vessel Condition Assessments) • Rennie Intelligence (Traffic Forecast Validation) • McElhanney (Traffic Simulation Modeling)

Assessment	Question	Observations and Reported Information from BC Ferries
Adequately Responded	Provide detail on completed and/or planned consultations, in particular with the provincial government or other stakeholders.	<p>BC Ferries engaged with the public about replacement vessels for several years through the Ferry Advisory Committee process. They also completed specific in-person and online engagement with Gabriola Island and Quadra Island residents. These sessions focused on asking stakeholders, including BC Ferries’ employees, on the routes affected, whether they would prefer one larger vessel that provides a similar sailing frequency as the current service of two smaller vessels that provide increased sailing frequency.</p> <p>Approximately 73 per cent of the over 1,400 consulted indicated a strong preference for two smaller ships with higher frequency sailings.</p> <p>Further engagement will focus on informing customers and community members of the vessel building process and, closer to the in-service date, gathering community input on schedule preferences.</p>
Adequately Responded	In the case of new vessels, has BC Ferries considered any alternative to building and owning the new vessels?	BC Ferries asserts there are no obvious alternatives.
Adequately Responded	Will a new or replacement vessel require any modifications to any terminals? If so, at what additional cost?	<p>Shore-side upgrades have been identified and included in the total expenditure and NPV analysis. Upfront shore-side upgrades were internally estimated based on conceptual designs. Indirect shore-side upgrades are not included in the total expenditure but are included in the NPV analysis as lifecycle costs.</p> <p>With the introduction of a Salish class vessel to serve Route 5, seabed blasting and installation of new dolphins would be required at Swartz Bay Berth 5 to address the draft of the larger ship during extreme low water conditions and increase resistance capacities of the marine structures. On Routes 19 and 23, construction of additional tie-up berths would be required to support the different hours of service with the two vessels on each route and to keep a berth open for sailings that could be required after hours (i.e. ambulance transfer). Due to heavy weather and rough sea states at Campbell River, an extension of the breakwater is also expected to be required to protect the vessel when tied up.</p>

Assessment	Question	Observations and Reported Information from BC Ferries																									
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Adequately Responded	What are the procurement cost risks and how will they be mitigated?	<p>Price escalation and currency are procurement cost risks. BC Ferries included a contingency in the budget to address unforeseen cost pressures, including shipyard prices that might exceed current estimates. This will provide a level of mitigation against potential cost escalation that may occur during the contracting process. Depending on the magnitude of the cost variance, scope changes may also need to be considered.</p> <p>The RFP process will specify that the contract is to be negotiated to a fixed firm price in Canadian dollars. BC Ferries adopted this approach for the original build programs for both these classes of vessels. Currency fluctuations between submission of this application and contract award have been accounted for by the budget contingency.</p>																									
Adequately Responded	What are the consequences of the alternatives if the application is rejected?	BC Ferries asserts that there are no obvious alternatives to the three options presented in this application. If all three options are rejected, BC Ferries may be unable to deliver the contractually-required service on Routes 5, 19 and 23.																									

Wise Use of Resources

Assessment	Question	Observations and Reported Information from BC Ferries
Adequately Responded	Can an existing vessel be reassigned instead?	BC Ferries asserts that the project already involves redeployment of current vessels and the Company does not have a spare vessel to reassign to avoid the need to replace the <i>Bowen Queen</i> , <i>Mayne Queen</i> , and <i>Powell River Queen</i> .

Assessment	Question	Observations and Reported Information from BC Ferries
Adequately Responded	For shorter routes, were non-vessel options considered, such as a fixed link?	BC Ferries asserts there are no other obvious non-vessel options. A fixed link option is considered too cost prohibitive.
Adequately Responded	Were non-vehicle vessels (e.g. passenger only ferries, barges, other) or a mix of vessel types considered?	Projected requirements indicate that roll-on/roll-off passenger ferries will be required in the foreseeable future.
Adequately Responded	Has a used vessel option been considered?	The assessment of the international market of used ships found that no suitable vessels are available. International ship brokers regularly advise BC Ferries of used vessels for purchase and brought forward approximately 24 used vessels for consideration. All were reviewed, but none were determined to meet the requirements for the replacements of the <i>Bowen Queen</i> , <i>Mayne Queen</i> and <i>Powell River Queen</i> due to factors such as age and capacity. Used vessels are generally an effective solution only for specific, one-off requirements.
Adequately Responded	How does the vessel align with the concept of standardization of the fleet?	A key objective of BC Ferries' fleet renewal program is to achieve capital and operating cost savings along with efficiencies through a strategy of vessel standardization. The acquisition of the Island class and Salish class vessels aligns with this objective.
Adequately Responded	Would investments in technology, such as an expanded reservation system, better IT systems or a yield management program allow for a smaller sized vessel?	BC Ferries' Fare Flexibility and Digital Experience Initiative includes a new demand management system which, once implemented, is expected to further improve overall AEQ capacity utilization on the routes to which it is applied. At this time, demand management is envisaged for routes currently accepting vehicle reservations, thereby excluding Routes 5, 19 and 23. Accordingly, no impact from demand management on the project is envisaged.

Showing Due Consideration for the Future

Assessment	Question	Observations and Reported Information from BC Ferries
Adequately Responded	How does the proposed new vessel contribute to overall fleet flexibility?	A key objective of BC Ferries' fleet renewal program is to achieve efficiencies through an over-arching vessel class and standardization strategy that delivers better service, provides resiliency of

Assessment	Question	Observations and Reported Information from BC Ferries
		operations, and reduces crewing, training and supply chain costs. The acquisition of the Island class and Salish class vessels aligns with this objective.
Adequately Responded	What new technologies or innovations will be incorporated, and why are they considered necessary?	The application proposes vessels well within the current state of technology, with no apparent risks associated with innovative or untried features. BC Ferries focussed on standardization and interoperability as well as environmental stewardship. <u>Salish class vessel</u> <ul style="list-style-type: none"> Dual-fuel propulsion system with capacity to run primarily on LNG or entirely on diesel
Adequately Responded	Will there be provision for a conversion to an alternative to marine diesel engines, such as LNG?	<u>Island class vessels</u> <ul style="list-style-type: none"> Diesel-electric generation using two 1500 kW generator sets, where the schedule can generally be met with one generator set providing power A redundant DC-power main electrical bus employing AC/DC conversion technology for power consumers Two 400 kW battery banks for stored energy/power feeding of the main DC-bus
Adequately Responded	Is dual-fuel capability planned and if so provide the rationale?	The Island class vessels will be built to allow for conversion to a “zero-emission” operation. BC Ferries anticipates conversion at quarter life.
Adequately Responded	Will the new or replacement vessels be appropriate if the ratio of vehicle to foot passenger traffic changes in future?	The addition of a second vessel on Routes 19 and 23 will allow for greater flexibility if the ratio of vehicle to foot passenger traffic changes in the future. While the two Island class vessels together provide similar vehicle capacity to a Shuttle class vessel, foot passenger capacity is effectively doubled and could be utilized accordingly.
Adequately Responded	Is vessel capacity sufficient to meet current and projected future demand?	BC Ferries’ traffic analysis confirmed that the Island class and Salish class vessels will be sufficient to meet the current and forecasted traffic on Routes 5, 19 and 23.
Adequately Responded	What is the estimated impact of the proposed capital expenditure on future price caps assuming no change in	BC Ferries’ performance term four price cap forecast model (PT4 model) was based on the replacement of the three Bowen class vessels with three intermediate class dual-fuel vessels. Option 3, the replacement of the three Bowen class vessels with four Island class vessels and one Salish class vessel, reflects an increase in both capital and ongoing costs. Using the project assumptions included in PT4 as a baseline and extending the analysis through to PT7, BC Ferries

Assessment	Question	Observations and Reported Information from BC Ferries
	non-passenger related revenues?	determined that Option 3 will result in a baseline increase in the price cap of approximately 0.09 per cent per annum from that forecast in PT4. As a result, Option 3 can be expected to have a slightly greater impact on price caps over the 45-year lifecycle.

Not Excessive

Assessment	Question	Observations and Reported Information from BC Ferries
Adequately Responded	What passenger amenities will be provided, and why are they considered appropriate for the intended use of this vessel?	<p>Passenger amenities align with the intended use of the vessels. They adhere to BC Ferries' interior design standard which aims to provide a reasonable level of passenger comfort to support customer satisfaction and revenue generation, while also being durable, commuter friendly, easily cleanable, and with a reported low life cycle cost.</p> <p><u>Island class vessels</u></p> <ul style="list-style-type: none"> • Passenger lounge arrangement located in an accessible manner from the main deck, arranged without the need for passenger elevators • Foot passenger access to the vessel's interior lounge configured to interface with passenger walkways on standardized berths so as to minimize the potential for pedestrian interface with moving vehicles • Basic ancillary services such as vending machines <p><u>Salish class vessels</u></p> <ul style="list-style-type: none"> • Passenger accommodation deck above main vehicle mezzanine deck accessible by four corner stairwells and two elevators on the main casing, compliant with current accessibility requirements • Foot passenger access to the lounge(s) configured to interface with passenger walkways on standardized berths so as to minimize the potential for pedestrian interface with moving vehicles • Accommodation deck consisting of a passenger lounge and cafeteria area outfitted to enable hot and cold food service • Ancillary services such as vending machines, study carrels, ATMs, wi-fi, and satellite television

Assessment	Question	Observations and Reported Information from BC Ferries
		<ul style="list-style-type: none"> Four passenger stairwells that ascend three deck levels, configured to European design standards and meeting Class and Transport Canada standards
Adequately Responded	Do any of the proposed passenger amenities require crewing levels to be higher than what is required by Transport Canada regulations?	The proposed passenger amenities do not require incremental crew.
Adequately Responded	Is the vessel the right size and how has the capacity requirement been determined?	The Island and Salish class vessels appear to be the right size for the proposed routes. The vessels support the move towards a standardized fleet.
Adequately Responded	Describe the objectives of BC Ferries' design standards for passenger accommodations for vessels of similar size and scope. Will the passenger accommodations for the replacement vessel deviate from these standards? If so, what is the rationale for the deviation and what impact, if any, will it have on the capital and operating costs of the vessel?	Passenger amenities align with the intended use of the vessels. They adhere to BC Ferries' interior design standard which aims to provide a reasonable level of passenger comfort to support customer satisfaction and revenue generation, while also being durable, commuter friendly, easily cleanable, and with a low life cycle cost.
Adequately Responded	Will the application of logos or other BC Ferries' brand images to the vessel be consistent with BC Ferries' current practice for similar vessels? If not, how will it differ and what will be the effect on capital costs?	<p>Branding will be similar to other BC Ferries' vessels. In general, BC Ferries' vessels are painted white and carry the BC Ferries logo and, in most cases, the funnel wave graphic on port and starboard sides. All vessels also carry a blue stripe in addition to the vessel name and Port of Registry.</p> <p>The sides of the Salish class vessel will be adorned with First Nations artwork reflecting the name of the vessel. This is consistent with other Salish class vessels already in the fleet.</p>

Assessment	Question	Observations and Reported Information from BC Ferries
Adequately Responded	What would have to be sacrificed to reduce total costs by 10%, and by 20%?	<p>BC Ferries asserts that the proposed capital expenditure for the four Island class and one Salish class vessels is reasonable and prudent.</p> <p>BC Ferries considered opportunities to reduce capital costs by a further 10 or 20 per cent. Substantial scope reductions are reportedly required to achieve a further 10 per cent capital cost savings for both the Island class and Salish class vessels.</p> <p>While it may be possible to achieve some upfront capital cost savings through specifying less costly shipboard equipment (i.e. main engines, thrusters, navigation equipment), BC Ferries does not consider this a prudent approach as it would negatively impact the Company's move toward fleet standardization, with a commensurate reduction in efficiencies and an increased risk regarding vessel reliability for both classes of vessels.</p> <p>Some capital costs savings could also be realized through reducing shipboard amenities (i.e. eliminating upper passenger viewing and deck area). This is seen, however, to impact the customer experience which could, in turn, affect traffic demand and revenue.</p> <p>BC Ferries asserts that capital cost savings in the order of 20 per cent are not achievable.</p>
Adequately Responded	Does vessel design or expected operating speed have any impact on labour costs?	<p><u>Island class vessels</u></p> <p>The anticipated crew size for the Island class vessels is based on BC Ferries' analysis of minimum safe manning levels. However, because the Island class vessels are not yet built, and minimum safe manning crew levels not yet determined and set by Transport Canada, there is some risk that required crew numbers will be incremental to those anticipated. This would increase costs. BC Ferries will work with Transport Canada to the extent possible to obtain early notification of the minimum safe manning levels for the vessels. However, a final decision by Transport Canada will apparently not be made until the vessels have been delivered and regulatory inspections completed.</p> <p><u>Salish class vessel</u></p> <p>Design and minimum safe manning levels are already determined for Salish class vessels.</p>

Assessment	Question	Observations and Reported Information from BC Ferries
Adequately Responded	Are engines sized for efficient operations, fuel consumption and ability to recover schedule?	<p><u>Island class vessels</u></p> <p>Salish class vessels are optimized for a service speed of 14 knots at 85 per cent machinery continuous rating. Reserve power is available for schedule recovery is required.</p> <p><u>Salish class vessel</u></p> <p>The Salish class vessel is optimized for a service speed of 15.5 knots at 85 per cent machinery continuous rating. Reserve power is available for schedule recovery is required.</p>

Demonstrating Good Value at a Fair, Moderate Price

Assessment	Question	Observations and Reported Information from BC Ferries
Adequately Responded	For new vessels what alternatives were considered? Provide the rationale (cost or otherwise) for why the alternatives were not accepted.	BC Ferries considered introducing a new vessel class, the Shuttle class, to service Routes 5, 19 and 23. These hybrid diesel-electric vessels are optimized for shuttle routes and those with minimal in-port time. The Shuttle class vessels would require shore-side infrastructure upgrades for Routes 19 and 23. BC Ferries asserts that Shuttle class vessels would not be appropriate for Route 5.
Adequately Responded	Has the business case been built on a full life cycle costing basis?	The business case was built on a full life cycle costing basis. An NPV was prepared on an estimated 45-year life of the vessels.
Adequately Responded	How fuel efficient will the new vessels(s) be?	<p>The vessels are designed to be fuel efficient and to use lower-cost alternatives to diesel fuel. The Salish class vessel will have dual-fuel LNG/diesel propulsion and the Island class vessels will have hybrid diesel-electric propulsion. BC Ferries' operational teams are reported to continuously monitor the fuel performance of its vessels to ensure they operate as efficiently as possible.</p> <p>The vessels will be built to allow for conversion to a "zero-emission" operation. BC Ferries anticipates conversion at quarter life.</p>

Assessment	Question	Observations and Reported Information from BC Ferries																																																	
Adequately Responded	Will the new or replacement vessel have any impact on efficient use of labour?	A larger total number of crew will be required for the four Island class vessels. BC Ferries is considering homeporting one of the ships for each of Routes 19 and 23 on Vancouver Island which could provide access to a larger potential pool of workers.																																																	
Adequately Responded	Are the operating costs reasonable?	BC Ferries asserts that the acquisition of the Island and Salish class vessels and terminal upgrades provides greater standardization and interoperability of the fleet and results in lower capital costs and greater operational efficiency for the ferry system overall. This appears reasonable.																																																	
Adequately Responded	How do the operating costs compare with the vessel being replaced?	<table border="1"> <thead> <tr> <th></th> <th><i>Powell River Queen</i></th> <th><i>Bowen Queen</i></th> <th>Island Class</th> </tr> </thead> <tbody> <tr> <td>Route</td> <td>23</td> <td>Relief</td> <td>19, 23</td> </tr> <tr> <td>Crew</td> <td>8</td> <td>10</td> <td>6</td> </tr> <tr> <td>Fuel consumption</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Annual maintenance</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Annualized refit</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Annual depreciation</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th></th> <th><i>Mayne Queen</i></th> <th>Salish Class</th> </tr> </thead> <tbody> <tr> <td>Route</td> <td>5</td> <td>5A</td> </tr> <tr> <td>Crew</td> <td>8</td> <td>15</td> </tr> <tr> <td>Fuel consumption</td> <td></td> <td></td> </tr> <tr> <td>Annual maintenance</td> <td></td> <td></td> </tr> <tr> <td>Annualized refit</td> <td></td> <td></td> </tr> <tr> <td>Annual depreciation</td> <td></td> <td></td> </tr> </tbody> </table>		<i>Powell River Queen</i>	<i>Bowen Queen</i>	Island Class	Route	23	Relief	19, 23	Crew	8	10	6	Fuel consumption				Annual maintenance				Annualized refit				Annual depreciation					<i>Mayne Queen</i>	Salish Class	Route	5	5A	Crew	8	15	Fuel consumption			Annual maintenance			Annualized refit			Annual depreciation		
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Adequately Responded	Is there any expected impact on revenue?	<p>Replacing the existing vessels on Routes 19 and 23 with two new Island class vessels would increase the flexibility of service delivery. Any increased frequency should positively impact revenue. Island class vessels increase AEQ by 35 and passengers by 100 per each route's round-trip cycle duration.</p> <p>Deploying a Salish class vessel on Route 5 would provide for service enhancement through both increased capacity and onboard amenities. While operating on Route 5, the Salish class vessel will offer a basic plus food service as well as retail service. These services offerings would be an enhancement to those now provided on Route 5 by the <i>Queen of Cumberland</i>. The Salish class vessel increases AEQ by 26.</p>																																																	

Assessment	Question	Observations and Reported Information from BC Ferries
Adequately Responded	Will crew training and certification activities be in excess of that required to meet regulatory requirements? If so, explain the rationale for this approach and whether it will result in incremental operating costs.	BC Ferries asserts that crew training and certifications will be sufficient to meet regulatory requirements. Operational training will also be provided to meet service reliability goals.

Coastal Ferry Services Contract

Assessment	Question	Observations and Reported Information from BC Ferries
Adequately Responded	Is the proposed capital expenditure consistent with the current Contract?	The proposed capital expenditure was included in BC Ferries' 12-year Capital Plan (Fiscal 2015 to 2026) for performance term four (2016 – 2020) and 12-year Capital Plan (Fiscal 2019-2030) submitted for performance term five (2020 – 2024). BC Ferries submits that the total expenditure, as described in the application, is reasonable, affordable, prudent and consistent with the Coastal Ferry Services Contract with the Province of BC.

Long Term Vision for Coastal Ferry Services in British Columbia

Assessment	Question	Observations and Reported Information from BC Ferries
Adequately Responded	How does the proposed expenditure support the government approved long-term vision for the future of coastal ferry services?	The Province's vision for coastal ferry services is reflected in the service levels set out in the Contract. BC Ferries' asserts that the project will ensure core service levels in the Contract continue to be met or exceeded.



Opportunity to Comment on BC Ferries' Proposed Acquisition of Five New Vessels for Minor Routes

The Office of the British Columbia Ferries Commissioner ("commissioner"), the independent regulator of BC Ferries, is seeking public comment on BC Ferries' application under Section 55 of the *Coastal Ferry Act* seeking the commissioner's approval of the major capital expenditure to acquire four Island Class vessels, one Salish Class vessel and incremental terminal improvements.

BC Ferries proposes to deploy the first two of the four Island class vessels on the route connecting Campbell River and Quadra Island ("Route 23") as a direct replacement for the Powell River Queen. The other two Island class vessels would be deployed on the route connecting Nanaimo Harbour and Gabriola Island ("Route 19") enabling the redeployment of the Quinsam to the route connecting Crofton with Vesuvius on Salt Spring Island ("Route 6"), the Quinitsa to refit relief and the retirement of the Bowen Queen.

The Salish class vessel, the fourth of this class, would replace the Mayne Queen and would be deployed, with the Queen of Cumberland, on the route connecting Swartz Bay with the Southern Gulf Islands ("Route 5/5A").

Under Section 55 of the *Coastal Ferry Act* the commissioner may approve a major capital expenditure if the proposed major capital expenditure is:

- a) reasonable,
- b) prudent, and
- c) consistent with
 - (i) the current Coastal Ferry Services Contract, and
 - (ii) any long term capital plan established by the ferry operator.

BC Ferries' application is available on the commissioner's website at www.bcferrycommission.ca. The commissioner's Section 55 Application Guidelines is also available at www.bcferrycommission.ca.

Comments or submissions can be sent by email to info@bcferrycommission.ca or by mail to:

Office of the BC Ferries Commissioner
PO Box 9279 Stn Prov Govt
Victoria, BC V8W 9J7

Deadline for public comments is November 30, 2018. Comments submitted to the commissioner may be published on its website.

Public Comments on BC Ferries' Proposed Acquisition of Five New Vessels

#	Date	Comments
1.	9-Aug-18	<p>Re: Replacement of Campbell River-Quadra Island vessel</p> <p>It is my understanding that the BC Ferries Inc. proposal to replace the Powell River Queen is now before your commission for consideration. (last sentence redacted)</p> <p>BC Ferries public announcement states that they are proposing to purchase two new vessels for the service; one of which will operate full time and a second vessel that will operate on a reduced schedule during high demand periods. They justify the proposal to employ two vessels based upon standardization of the ships and further state that more modern propulsion systems will reduce operating costs.</p> <p>The information also notes that lift capacity will be increased. I urge you to take a broad spectrum approach to your consideration of this proposal. The ferry service to Quadra has been, and will certainly continue to be, if this proposal is accepted, a heavily tax payer subsidized service. While I do not concur with the Government's commitment to subsidizing this type of service, I respect their decision to do so. Never the less the very large increase in both the capital and operating costs of the two ferry proposal put an onerous charge on the tax base. As the Quadra economy remains small and largely seasonal, this added tax burden will fall primarily upon people who do not reside on the Island.</p> <p>The BC Ferries announcement does not mention many of the costs which their proposal will incur. A substantial increase in staff, a major component of the ferry cost structure, will be necessary. Anyone familiar with the Quadra service will understand that BC Ferries struggles to staff this route today. The situation is exacerbated by the dearth of housing at reasonable cost and rental accommodation on the Island. These are impediments to full time as well as seasonal staff. Not only the number of additional staff required, but also the inefficiency of scheduling staff for two vessels will further increase costs.</p> <p>The second vessel, when not running a full schedule, needs to be berthed somewhere. There are few suitable options in the Campbell River area and those that could be developed are not in easily accessible locations and require capital to modify. If this vessel is to be berthed in the Campbell River terminal overnight, extra staffing costs will be incurred to move the vessel after the final sailing to Quadra</p>

each night. The former dock at the north end of Quathiaski Cove may be available as a standby berth but would require capital investment, may require that the pleasure boat moorage adjacent to it be moved, and would require additional crew costs related to schedule changes for vessel positioning.

Most of the time on the Quadra route the vessel is not in transit. While idle time uses less fuel than in transit consumption, it never the less consumes fuel and emits exhaust gases. Doubling the number of vessels doubles the idle fuel consumption and emissions, even though the proposed propulsion system may be more efficient. While labour and fuel constitute the bulk of the daily operating costs, there are other daily costs associated with the vessels which will double.

There is no doubt that maintaining the Powell River Queen is a significant cost. A new vessel, particularly one of a 'standard' design should have significantly lower maintenance costs. However, over the life of the vessels, maintaining two ships will be much more costly than a single vessel.

Clearly two vessels cost twice as much as one. Servicing that additional capital cost must be considered from a tax payer perspective.

I strongly urge you to challenge the BC Ferry proposal to employ two vessels. A single vessel of the type they propose will be adequate for the Quadra service for years to come. The proposed 450 passenger vessel is suitable for the passenger service. BC ferries reports roughly 3000 passengers per day in the summer period. That is slightly over 6 full trips on a service that provides more than 30 trips per day. To the end of June 2018, BC Ferries reports a vehicle count of 106, 000. Based upon the number of trips run in the first six months of the year, that is a load factor of 41% on a single 47 vehicle ferry. That figure assures that either very high fares or subsidies are necessary to support the service.

There appear to be two vehicle capacity issues. One is driven primarily by local residents who wish to travel during a limited number of times per day. The second is driven by seasonal visitors. Both of these could be addressed by fare structure, a reservation system, a website based load and wait time information system, and by the implementation of a resident priority system which would be an extension of the present priority systems in place for Cortez and Hornby islands. All of which have low implementation and

		<p>maintenance costs.</p> <p>The Powell River Queen cannot maintain schedule when operating at capacity from one terminal and with heavy loads at the other. There are several apparent reasons for this situation. However, the BC Ferries announcement refers to an open deck plan for the new vessel which they state will improve loading and unloading efficiency. It is not difficult to imagine that the new vessel could maintain a 50 minute turn- around schedule, in which case an additional sailing could be achieved roughly every five hours by shuttle operation. The Quadra Queen II demonstrated that such operation could be sustained.</p> <p>Were BC Ferries required to present to the public a full and detailed accounting of the costs of the two ferry proposal, I believe most tax payers would support a more comprehensive effort to make a one ferry system meet the needs.</p> <p>Commissioner’s response: Thank you for your letter dated August 9, 2018, regarding the replacement of the Campbell River-Quadra Island Vessel. A proposal to replace the Powell River Queen is not currently being considered as BC Ferries has not yet submitted a section 55 application as required under the <i>Coastal Ferry Act</i> for consideration by the BC Ferries Commissioner. Whenever an application is submitted notice will be given inviting public comments on the application which will be posted on the Commission’s website (www.bcferrycommission.ca).</p> <p>I would invite you to review the application and provide additional comments if you feel warranted. In the meantime we will retain your letter for consideration upon receipt of BC Ferries’ application for replacement of the Powell River Queen.</p> <p>Thank you again for your letter.</p>
2.	9-Nov-18	<p>Office of the BC Ferries Commissioner, I’d like to give my feedback regarding the purchase of a new Salish class ferry for the replacement of the Mayne Queen.</p> <p>It’s been my experience riding the Salish class vessels from Long Harbour on Salt Spring Island that the design of these ferries is not popular among the island population as I’m sure you’re well aware of. From the steep stairs leading up to the passenger areas to the automatic doors and the dreadful cafeteria. Often foot passengers cannot get on the ferry as there’s not enough seating.</p> <p>The Island class ferries fragment the foot passengers into separate</p>

		<p>lounges which deteriorates the community feel that the Mayne and Bowen and Queen of Cumberland have. Plus, the Skeena Queen's lounges are really loud and make carrying on conversations difficult.</p> <p>Please reconsider the designs of these two types of ferries.</p>
3.	11-Nov-18	<p>I believe procuring 5 new vessels for smaller routes is the first "right" step by BC Ferries!</p> <p>My wife and I live on Gabriola and over the past couple of years have seen a significant increase in full time residents, service industry staff, commercial traffic and trades from Vancouver Island and afield due to increased demand of housing and construction for both new and retrofitting of homes.</p> <p>Despite government issued reports showing no significant increase in population on the Island, there has been significant increase in ridership even on non-peak and holiday periods.</p> <p>Essentially the current ferry system cannot keep up with the present demand of ridership.</p> <p>Replacing the current ferry with a two ferry system and running more frequently is a welcome step in the right direction.</p> <p>Making sure that the updated infrastructure to support this new system at both ends will include potential easy modifications to increase ridership for future capacity, is an absolute must.</p> <p>We are of mind to pay now rather than later, seems to be the right attitude to take in order to ensure continued timely service is maintained.</p> <p>We trust BC Ferries will make the right decision to support our small community going forward and given that there is a significant effort to drive this proposed change forward, is truly welcomed by all Gabriolians.</p>
4.	11-Nov-18	<p>To whom it may concern:</p> <p>I would like to know why BC Ferries is not investigating new technologies more consistent with a greening economy, such as the electric ferries currently being used in Norway. The coastal marine highway has been neglected for far too long, but continueing to use soon-to-be outdated fossil fuel burning vessels would be only creating future liabilities.</p> <p>BC Ferries has eight routes of 30 minutes or less where an electric</p>

		<p>ferry could operate, or nine when battery technology improves to 35 minutes for the Salt Spring to Swartz Bay route. BC ferries has already installed a hybrid battery system on its newly retrofitted MV Tachek, which serves the Quadra to Cortes Island route, and many of BC Ferries' vessels use diesel-powered electric drive, maybe making it possible that some ferries could be retrofitted.</p> <p>I have included a link for your information: https://electrek.co/2018/02/03/all-electric-ferry-cuts-emission-cost/ I'm certain your staff could investigate this further before committing to an uncertain future.</p>
5.	11-Nov-18	<p>Good day,</p> <p>I am writing to indicate my support of the proposed acquisition of four island class and one Salish class vessels to replace and upgrade current vessels.</p>
6.	12-Nov-18	<p>Just a quick note to say that as a resident of Gabriola, I am very much in favour of the 2 ferry option for this island.</p> <p>It's a good, forward looking solution for this busy route.</p>
7.	12-Nov-18	<p>Please add my voice to the approval of the two ferry solution for the Gabriola-Nanaimo Harbour route. This route is in dire need of increased service level as quickly as possible.</p> <p>I am currently a full time Gabriola resident for the last 8 years and have been a property owner for 25 years.</p>
8.	18-Nov-18	<p>BC Ferries Commissioner, Dear Sir/Madam,</p> <p>In response to your invitation for comments on the above proposed purchase, I would like to make my position clear.</p> <p>I am absolutely against awarding this contract to any firm outside the country of Canada and would preferably like to see it awarded within British Columbia. I am aware that doing this may increase the cost but I am willing to see our province and country absorb this increased cost to keep the construction within Canada.</p> <p>If there are no firms capable of fulfilling this proposal then I suggest we (you) delay the awarding of such until someone is capable or available. This may mean a delay of several years but so be it.</p>

		<p>I feel it is imperative we give our citizens the opportunity to build these vessels, thrive and contribute to our economy. I am tired of hearing the litany of excuses and reasons why they can't be awarded locally. It is time we bit the proverbial bullet and started bringing good jobs back home.</p>
9.	21-Nov-18	<p>Thank you for receiving this letter.</p> <p>My reason for writing is two fold. One, regarding replacing the Quinsam with two smaller vessels on the Gabriola Island route (route 19). This is the right thing to do. I worked in the marine industry. I did one summer on the Gabriola Ferry. This is when Min of Transportation and Highways was in the Marine Industry on the BC Coast. I also put two summers in highway road crews.</p> <p>We had two vessels on the Gabriola Route, the M. V. Kaloke and the smaller Roll Brudrme in which I served. We had the right idea and it is one I support, two vessels on the Gabriola Route it worked but M.O.T.H opted for the one vessel idea. Big mistake. I tell you the two vessels idea is correct. It will keep the vessels on schedule and reduce the weight time. Carry on!</p> <p>(last paragraph redacted)</p>

10.

5-Dec-18



OFFICE OF THE CHAIR

File: 0530-01

December 5, 2018

Via email: info@bcferrycommission.ca

Office of the BC Ferries Commissioner
PO Box 9279 Stn Prov Govt
Victoria, BC V8W 9J7

Dear Commissioner Sheldon Stollen:

RE: FERRIES ACQUISITION NOTICE

This is to advise that at its meeting held on November 22, 2018 the Regional Board of the Strathcona Regional District reviewed the attached notice and passed the following resolution:

Adams/Abram: SRD 1077/18

THAT the SRD write to BC Ferries thanking them for the update and look forward to working with them prior to implementation.

The Strathcona Regional District appreciates receiving an opportunity to comment on this application as route 23 connecting Campbell River and Quadra Island is within the Strathcona Regional District boundaries and the current vessel allocated to this route is aging and struggling to keep up with capacity.

Sincerely,

A handwritten signature in black ink, appearing to read "M. Babchuk".

M. Babchuk
Chair

#301 – 990 Cedar Street, Campbell River, BC V9W 7Z8
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