



CONNECTING COASTAL COMMUNITIES

Review of Coastal Ferry Services

Blair Redlin | Special Advisor

June 30, 2018

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Honourable Claire Trevena
Minister of Transportation and Infrastructure
Parliament Buildings
Victoria BC V8W 9E2

Dear Minister Trevena:

I am pleased to present the final report of the 2018 Coastal Ferry Services Review. The report considers the matters set out in the Terms of Reference released December 15, 2017, and provides a number of recommendations.

I hope the report is of assistance as the provincial government considers the future of the vital coastal ferry system.

Sincerely,

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

Blair Redlin
Special Advisor

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EXECUTIVE SUMMARY

Reliable and safe ferry service is essential for communities up and down the B.C. coast. Every day, ferries operated both by BC Ferries and smaller local providers ply the waters of the Salish Sea, the Inside Passage, Hecate Strait and points between to link communities together and to provide the crucial marine transportation services they depend on. Whether it's for commuting, movement of freight, medical appointments, school trips or to help welcome tourists, daily life on the B.C. coast depends on a complex and intricate coastal ferry network that is too often taken for granted.

By far the majority of these sailings are operated by BC Ferries but BC Ferries is not the only provider of coastal ferry services. In addition, there are eight unregulated ferry routes whose contracted operators are funded by the provincial government to reliably serve smaller and more isolated communities, including several First Nations.

In the 15 years since passage of the Coastal Ferry Act and incorporation of BC Ferry Services Inc. as a regulated company independent of the provincial government, a series of service cuts, sky rocketing fare increases and issues like executive compensation and the manufacturing of vessels outside of Canada have been the topic of much public debate.

For several years the system suffered from declining demand but over the last three years ridership has grown and BC Ferries has generated healthy net revenues. Overloads, sailing waits and capacity constraints are now an increasing concern.

While for many, the answer to these various challenges is to operate ferries as a direct provincial government service, the current government has said it prefers to focus instead on accessibility and affordability of coastal ferry services within the current governance model. BC Budget 2018 recognized BC Ferries as part of the provincial highway system and provided funding to reduce fares on minor routes by 15 per cent, freeze fares on major routes and restore the 100 per cent discount for senior citizens from Monday to Thursday. The fare affordability initiative was cost-shared with BC Ferries.

To help it consider what more might be done in support of the public interest in an affordable and reliable ferry service, the provincial government issued Terms of Reference in December of 2017 for a comprehensive operational review of coastal ferry services. This review was mandated to examine policies, operations, finances and the regulatory framework under which the coastal ferry system operates and to submit a final report to the Minister of Transportation and Infrastructure by June 30, 2018.

Most of the report was completed before the release of the 2017-18 Annual Financial Statements for BC Ferries on June 19, 2018. As a result, the analysis in the report is based on 2016-17 data. Even so, the trends for the most recent fiscal were consistent with the experience of the last few years, which is an increase in vehicle and passenger traffic, as well as strong net earnings. The company generated consolidated net earnings of \$59.9 million in fiscal 2018 after a year of record vehicle traffic and the highest levels of passenger traffic in 20 years.

These strong results follow many years of difficulty. An examination of historic trends shows that fares, provincial government funding, and overall revenue of BC Ferries have been rising consistently since 2003. Fares increased at a much higher rate than the provincial Consumer Price Index for most of the last 15 years. Ridership was constant for much of that time, but declined noticeably during the period from 2009-2015 given a slowing economy and after a series of service cuts. Ridership began to improve in 2015 after the BC Ferries Commissioner set a four year price cap for fares of 1.9%, a level closely matching B.C. inflation. Other factors contributing to recent traffic growth include a strong provincial economy and a weaker Canadian dollar.

Annual provincial government funding for BC Ferries now exceeds \$200 million per year. These funds are provided under the terms of the Coastal Ferry Services Contract, which stipulates the particular routes and services the company must provide. Provincial funding is in the form of a service fee, as well as for specific social programs such as medical transport.

The Terms of Reference directed the review to consider the public interest in affordable coastal ferry service. Publicly funded, legislated and regulated coastal ferry service is in the public interest because it: connects and supports communities; brings families together; serves diverse passenger needs; helps build and strengthen the economy; moves goods reliably; and supports numerous economic sectors such as agriculture and tourism.

It is in the public interest for coastal ferry services to be reliable, affordable, resilient and efficient. Coastal ferry services should be planned and implemented within the context of a broader multi-modal provincial transportation network and should help meet provincial goals such as reducing greenhouse gases and building the economy.

The full review report canvasses many aspects of coastal ferry service. Some of the topics include:

ADDITIONAL OR ALTERNATIVE SERVICE PROVIDERS

The original plan for an independent BC Ferries was that it would not only provide ferry services directly but would also contract out service on particular routes and thereby act as a service integrator. Sections 38(1)(c) of the Coastal Ferry Act says this is a principle which the regulator should apply while section 69 details the process for how such contracting out should take place, but despite numerous attempts, no services have been contracted out for more than 15 years. It seems appropriate to repeal sections 38(1)(c) and 69.

COMMERCIAL APPROACH

The Coastal Ferry Act also mandates the Commissioner to encourage BC Ferries to take a “commercial approach” to delivery of ferry services. It is unclear what this principle means in the BC Ferries context. Further, the commercial approach principle has the potential to be at odds with the primary role of the regulator which is to balance the interests of ferry users, taxpayers and the financial sustainability of the ferry operator. Section 38(1)(b) should be repealed but the section encouraging innovation and cost effectiveness should be retained.

SAFETY

BC Ferries has a strong safety culture and makes safety a top priority. The company’s joint employer/employee SailSafe initiative has integrated safety into all daily operations so both passenger and employee safety indicators have been steadily improving. It is suggested that BC Ferries take further steps to ensure every employee feels secure in raising safety concerns without fear of discipline.

PUBLIC ENGAGEMENT

BC Ferries is implementing a new Stakeholder and Community Engagement Framework. The company’s engagement processes include regional Ferry Advisory Committees; however, those deal only with local ferry issues and there is no mechanism for advice about the system as a whole. The Province should consider establishing an independent coastal ferry advisory council with representation from coastal business, labour, municipalities, and First Nations.

CUSTOMER SATISFACTION AND CUSTOMER COMPLAINTS

BC Ferries is required to survey and track customer satisfaction and to regularly report on its customer complaint process. The BC Ferries Commissioner recently ordered the company to improve the representativeness of its customer satisfaction survey and to report on steps to re-tender the survey contract. Because BC Ferries is not a public body, it is not covered by the Ombudsperson Act so an independent appeal process for customer complaints is recommended, to be overseen by the Commissioner.

HUMAN RESOURCES

BC Ferries offers a range of good benefits and training opportunities for its staff, but has found it challenging to recruit new younger employees. The company would benefit from a more comprehensive employment equity strategy focused particularly on recruitment of women and indigenous people. As well, the company should enhance its engagement with front line workers regarding new vessel design and operational issues.

EXECUTIVE COMPENSATION

The review takes a close look at executive compensation, in particular the extent to which the practices of BC Ferries are still consistent with the provincial Crown Corporation Executive Compensation Policy it voluntarily agreed to comply with in 2012. The report makes a number of recommendations, including an end to the current practice of providing a special pensionable salary to the CEO after retirement.

SERVICE RELIABILITY

On-time performance by BC Ferries has consistently met targets but overloads and sailing waits are an increasing problem. BC Ferries is attempting to manage demand by introducing fare promotions on off-peak sailings and encouraging customers to book in advance with a reservation discount, but ultimately the most sustainable solution for improving service reliability will be capital investments in additional vessels. More spare vessels are required to strengthen resilience of the fleet.

SHIPBUILDING, MAINTENANCE, AND REPAIR

In the past, most new BC Ferries vessels were built in British Columbia but since it became an independent company BC Ferries has built only two out of eleven new ships in the province. The company is expected to invest \$1.2 billion in 14 new replacement vessels over the next nine years so the review assessed the potential loss to the provincial economy if all that future work is done outside of Canada. Thousands of jobs, hundreds of millions of dollars in potential tax revenue, and extensive community benefits are at stake, so the review recommends an improved shipbuilding and repair strategy to help the B.C. industry become more competitive, multiple account evaluation of capital projects by the regulator, and quantification of the economic impact each time BC Ferries chooses to build or retrofit vessels overseas.

INFORMATION TECHNOLOGY AND RESERVATION SYSTEM CHANGES

BC Ferries has been implementing big changes to its information technology (IT) and reservations systems since 2007. There have been protracted schedule delays and the company has incurred additional costs, but there is strong Board oversight of the projects. Technical problems with the partial release of the new reservation system in 2018 happened to coincide with major external incidents that contributed to a significant increase in call wait times. The strategic objective of using the new reservation system to smooth out demand by offering fare discounts on less busy sailings make sense, but there must be no “surge pricing” and the unique needs of ferry dependent communities and commuters need to be safeguarded.

INNOVATION AND BUSINESS DEVELOPMENT DIVISION

BC Ferries is in the midst of creating an Innovation and Business Development Division to pursue strategic business opportunities that grow and diversify revenues. While the Division is still relatively new, it is important to put rigorous feasibility study and business case processes in place prior to pursuing specific projects so BC Ferries is only pursuing ideas that will actually generate new revenue for the company.

CAPITAL PLANNING, EQUITY AND DEBT

BC Ferries has a strong internal capital planning process with good Executive and Board oversight. The company is prudent in repaying principal while taking on additional debt and its credit ratings are improving.

FEDERAL FUNDING

The federal government provides an annual inflation-adjusted grant for west coast ferry service of about \$30 million per year and has recently started to provide grants for capital projects. However, east coast ferry services enjoy much higher levels of funding support from the federal government, so the BC government should make enhanced ferry service funding one of its intergovernmental priorities.

RISK MANAGEMENT

BC Ferries has a reasonable and thorough risk management strategy for both finances and business operations. The many problems that followed on the Queen of Cumberland going out of service suggest the company should add 'fleet and vessel condition' to its list of business risks.

FUEL

As BC Ferries is highly dependent on fuel (its second largest cost after labour) and the price of fuel is volatile, fuel management is a priority. The company mitigates its fuel risk through a combination of fuel hedging, fuel deferral accounts, and incremental conversion from diesel to LNG. The BC Ferries Commissioner should review the fuel management strategies of BC Ferries more frequently than once every performance term.

ADMINISTRATIVE COSTS

Administrative costs at BC Ferries have been rising much higher than the provincial inflation rate over the last five years. The Commissioner should update the 2015 efficiency performance review to investigate this trend.

ANCILLARY REVENUE

Ancillary revenue generated by BC Ferries reduces pressures on fares. BC Ferries Vacations generates such revenue and is also beneficial for the tourism industry on the coast. Ancillary revenue is currently unregulated, though, so the option of regulating ancillary revenue is suggested.

The review report also considers Future Directions for the coastal ferry service including:

PROVINCIAL VISION AND POLICY FRAMEWORK FOR COASTAL TRANSPORTATION

Within the current governance model for coastal ferries, a key responsibility of the provincial government is to set public policy. The Coastal Ferry Services Contract specifies the particular ferry routes that the Province is willing to pay BC Ferries to operate, so it is up to the provincial government to determine which routes and service levels make sense within the context of its overall plan for coastal transportation.

A provincial vision and plan should be led by the Ministry of Transportation and Infrastructure. It should have a broad scope and should examine big ideas for change, such as a new terminal on Iona Island near Sea Island or passenger only service between the Sunshine Coast and downtown Vancouver. Challenging issues such as the future of the Mill Bay ferry service, the future of Horseshoe Bay terminal and improved service for the North Coast should also be considered.

Once the Province determines provincial objectives for a diversity of transportation choices, basic levels of service, fair and equitable treatment of users and the reduction of greenhouse gas emissions, it should enshrine its new vision in the Coastal Ferry Act and, to the extent possible, the Coastal Ferry Services Contract.

CLIMATE ACTION

While BC Ferries has taken a number of steps to reduce carbon emissions, including incremental conversion to LNG, implementation of a cable ferry, and hybrid electric/diesel propulsion for shuttle class vessels, more can be done given the seriousness of the climate crisis. The report urges a more aggressive approach to the electrification of the fleet and recommends that BC Ferries be a full participant in all transportation tables implementing the provincial Climate Leadership Plan.

REGULATORY FRAMEWORK

Various aspects of the regulatory framework are canvassed, including: improved public communications by the Commissioner; independent consumer advocates; revenue cap regulation; fuel deferral accounts; communities as “ferry users”; and performance reviews.

IMPROVED COOPERATION BETWEEN THE PROVINCE OF B.C. AND BC FERRIES

Given provincial contributions of over \$200 million per year, the provincial government is by far the largest customer of BC Ferries. The report recommends more formal and regular communication between the Province and the ferry operator.

BC FERRY AUTHORITY

The BC Ferry Authority is the beneficial shareholder of BC Ferries so has important responsibilities within the governance model set out in the Coastal Ferry Act. Various reforms are suggested such as increasing the number of minority Order in Council appointees, enhancing regional reporting, permitting the appointment of municipal elected officials to the Authority, and strengthening its strategic role as per previous advice from the Comptroller General.

COASTAL FERRY SERVICES CONTRACT

Depending on the eventual details of the provincial vision and policy framework for coastal transportation, additional metrics and performance requirements are proposed for the Coastal Ferry Services Contract such as greenhouse gas targets and economic objectives.

OPTIONAL LOCAL GOVERNMENT CONTRIBUTIONS

The report suggests that local governments be enabled to make optional contributions to local ferry needs on a voluntary basis.

PERFORMANCE TERM 5

The process for determining the price cap for Performance Term 5 will commence shortly. The Queen of Cumberland accident highlighted the shortage of spare vessels so resilience of the fleet will be an important consideration in the final capital plan approval process. Still, the cost of every additional vessel puts upward pressure on fares so all involved – including the provincial government – will need to carefully balance fleet resilience, growing demand, improved efficiency, and fare affordability when working on the next price cap.

1

INTRODUCTION



Reliable and safe ferry service is essential for communities up and down the B.C. coast. Each and every day of the year, ferries operated both by BC Ferries and smaller local providers ply the waters of the Salish Sea, the Inside Passage, Hecate Strait and points between to link communities together and to provide the crucial marine transportation services they depend on.

Whether it's for commuting between work and home, movement of vital commercial freight, medical appointments, school trips or to help welcome tourists to our spectacular coastal scenery, normal daily life on the B.C. coast depends on a complex and intricate coastal ferry network that is too often taken for granted.

By far the majority of these sailings are operated by BC Ferries using the 36 vessels in its fleet. Currently, BC Ferries (and one alternative service provider) use 47 terminals up and down the coast to serve 25 routes. That extensive network means BC Ferries is the world's third largest ferry system and the largest in North America.

In 2017, BC Ferries provided more than 21 million passenger trips, 8 million vehicle trips and moved more than \$8 billion worth of goods.

The company has approximately 4,500 employees and an annual payroll and benefits of more than \$370 million. It is a very significant direct employer but also through the services and goods it both provides and purchases is a major component of the overall provincial economy. The company spends more than \$200 million per year on ships, terminal and technology infrastructure as well as inputs like fuel. As the largest non-military user of ship repair services in B.C., it is also crucial for the ship repair industry, having purchased more than \$1.6 billion in ship repair services since 2003.

BC Ferries funds its services primarily through a combination of fares paid by users, an annual provincial government service fee, provincial social program payments, an annual federal government subsidy and ancillary revenue from services like parking and food.

BC Ferries is not the only provider of coastal ferry services. In addition, there are eight unregulated ferry routes whose contracted operators are funded by the provincial government to reliably serve smaller and more isolated communities, several of them First Nations.

Despite the impressive and necessary performance by BC Ferries and contracted operators in supporting tens of millions of trips per year, coastal ferry service in B.C. is not without problems. It is an essential lifeline for coastal communities so is often the topic of heated public debate and controversy.

In the 15 years since passage of the Coastal Ferry Act in 2003 and incorporation of BC Ferry Services Inc. as a regulated company independent of the provincial government, a series of service cuts, sky rocketing fare increases and debates over issues like executive compensation and the manufacturing and retrofit of vessels at shipyards outside of Canada have kept the company in the news and under discussion on the floor of the Legislative Assembly.

For several years the system suffered from declining demand but over the last two years, ridership has increased significantly and the company has earned healthy net revenues. Increasing demand, overloads, sailing waits and capacity constraints are now among the main issues of 2018.

While for many, the answer to these various challenges is to operate ferries as a direct provincial government service¹, the current government has said it prefers to focus instead on accessibility and affordability of coastal ferry services within the current governance model. B.C. Budget 2018² recognized BC Ferries as part of the provincial highway system and provided funding to reduce fares on minor routes by 15 per cent, freeze fares on major routes and restore the 100 per cent discount for senior citizens from Monday to Thursday.

To help it consider what further steps to take in support of the public interest in an affordable and reliable ferry service, the new provincial government commissioned a comprehensive operational review of coastal ferry services. This is the report of that review.

1.1| TERMS OF REFERENCE

The Terms of Reference for this review were announced on December 15, 2017³ and are as follows:

“Introduction:

A mandate letter dated July 18, 2017 addressed to the Honourable Claire Trevena, Minister of Transportation and Infrastructure, confirmed the government’s commitment to conduct a comprehensive operating review of the provision of coastal ferry services in British Columbia.

Background/Context:

Under the Coastal Ferry Act (CFA), a new model was created where BC Ferry Services Inc. is responsible for its operating policies and capital investment decisions and provides ferry services under a 60-year agreement with the Province called the Coastal Ferry Services Contract (CFSC). The CFSC sets the minimum service levels (i.e., number of round trips and length of operating day) with changes negotiated between the Province and BC Ferries. The Ferry Transportation Fees paid to BC Ferries are determined by the Province. An independent regulator, the Office of the BC Ferries Commissioner, regulates fares using price caps (i.e., caps maximum average fares) determined every four years.

Since the inception of the CFA, a number of reviews of BC Ferries have been undertaken with significant feedback provided through public consultations with stakeholders. The findings and recommendations of these reports led to changes to the Coastal Ferry Act including: Bill 20 – Miscellaneous Statutes Amendment Act (June 2010), Bill 14 - Coastal Ferry Amendment Act (June 2011), and Bill 47 - Coastal Ferry Amendment Act (May 2012).

¹ See, for example, “16,000 people sign petition urging province to bring BC Ferries under government control” by Megan Thomas, CBC News website, March 12, 2018. <http://www.cbc.ca/news/canada/british-columbia/ferries-petition-1.4573191>

² See 2018 Budget Speech: http://bcbudget.gov.bc.ca/2018/speech/2018_Budget_Speech.pdf
Funding for the fare affordability initiative was cost-shared with BC Ferries.

³ The news release announcing the review is posted here: <https://news.gov.bc.ca/releases/2017TRAN0292-002057>

Despite the changes to the CFA noted above, ferry users and coastal communities have raised significant concerns relating to the affordability of the service, BC Ferries policies, and service levels.

Objective of the Review:

To prepare and submit a report to the Minister of Transportation and Infrastructure for government's consideration that:

- Reviews the Coastal Ferry Services Contract and the provision of coastal ferry service in British Columbia to ensure that the model is operating in the public interest. The reviewer will:
 - examine BC Ferries' operations, including operating and capital expenditures, business processes, practices and policies to assess whether the services are being provided for in a manner that supports the public interest in affordable fares;
 - consider what changes to the price cap and regulatory model would ensure the ferry system is working as efficiently and effectively as possible for all British Columbians, and in particular, ferry users and communities who depend on this essential service, and,
 - identify opportunities and recommend actions to enhance ferry service delivery and/or reduce costs without impacting existing service.

In addressing these matters, the reviewer will:

- review previous relevant studies and reports;
- seek input from or interview the BC Ferries Commissioners, the BC Ferry Authority Board, the BC Ferries Board of Directors, BC Ferries' senior staff, and Ministry of Transportation and Infrastructure staff, and others as determined by the reviewer; and,
- oversee and engage with technical experts who may be required and retained by the reviewer to conduct detailed studies, research and analysis (e.g., financial review including debt management), as deemed appropriate to support the review process.

Deliverables: A final report will be submitted to the Minister of Transportation and Infrastructure no later than June 30, 2018."

1.2| APPROACH AND METHODOLOGY

Previous reviews of coastal ferry service are summarized in Appendix 9.1.

As noted in the Terms of Reference, a number of previous reviews included significant public consultation and feedback, particularly the 2012 review led by former BC Ferries Commissioner Gord Macatee. As a consequence, this 2018 review did not include a broad public consultation component.

Instead, the priority has been to: review relevant studies and reports; participate in briefings from BC Ferries managers on specific aspects of the operations, finances and business processes of BC Ferries; meet with the BC Ferries Commissioner and Deputy Commissioner; meet with the Boards of the B.C. Ferry Authority and British Columbia Ferry Services Inc.; and collaborate closely with staff of the Ministry of Transportation and Infrastructure (particularly the Transportation Policy and Programs Division and its Marine Branch).

Advice was received from the Public Sector Employers' Council Secretariat of the British Columbia Ministry of Finance, the Economic Policy and Strategic Initiatives Branch of the Ministry of Jobs, Trade, and Technology, the Legal Services Branch of the Ministry of the Attorney General, and the Ombudsperson of B.C.

Targeted meetings and phone conversations were held with a number of community stakeholders with particular interest or expertise including: the chairs of the Ferry Advisory Committees; the Union of BC Municipalities; the BC Ferry and Marine Workers' Union; the BC Trucking Association; the BC Dairy Association; the Association of British Columbia Marine Industries and some of its member companies; Tourism Victoria; Transport Canada; and the Canadian Ferry Association.

Consulting assistance was obtained from Ken Cameron Inc., Ecopath Planning, and MNP LLP. The studies prepared by these consultants are included as appendices and are also reflected within the text of this report.

BC Ferries serves a number of communities and regions throughout coastal British Columbia. The ferry routes and the communities served are shown in the figure below.

BC FERRIES ROUTE MAP



DESTINATIONS AND TERMINALS

1	Tsawwassen – Metro Vancouver (Tsawwassen) to Victoria – Vancouver Island (Swartz Bay)
2	West Vancouver – Metro Vancouver (Horseshoe Bay) to Nanaimo – Vancouver Island (Departure Bay)
3	West Vancouver – Metro Vancouver (Horseshoe Bay) to Gibsons – Sunshine Coast (Langdale)
4	Fulford Harbour – Salt Spring Island (Fulford Harbour) to Victoria – Vancouver Island (Swartz Bay)
5	Victoria – Vancouver Island (Swartz Bay) to Southern Gulf Islands
6	Crofton – Vancouver Island (Crofton) to Vesuvius – Salt Spring Island (Vesuvius)
7	Earls Cove – Sunshine Coast (Earls Cove) to Powell River – Sunshine Coast (Saltery Bay)
8	West Vancouver – Metro Vancouver (Horseshoe Bay) to Bowen Island – Metro Vancouver (Snug Cove)
9	Tsawwassen – Metro Vancouver (Tsawwassen) to Southern Gulf Islands
10	Port Hardy – Vancouver Island (Bear Cove) to Prince Rupert – North Coast (Prince Rupert) ⁴
11	Prince Rupert – North Coast (Prince Rupert) to Skidegate – Graham Island (Skidegate)
12	Brentwood Bay (Brentwood Bay) to Mill Bay – Vancouver Island (Mill Bay)
13	Gibsons – Sunshine Coast (Langdale) to New Brighton – Gambier Island (New Brighton) to Keats Landing – Keats Island West (Keats Landing)
17	Powell River – Sunshine Coast (Westview) to Comox – Vancouver Island (Little River)
18	Powell River – Sunshine Coast (Westview) to Blubber Bay – Texada Island (Blubber Bay)
19	Nanaimo – Vancouver Island (Nanaimo Harbour) to Descanso Bay – Gabriola Island (Descanso Bay)
20	Chemainus – Vancouver Island (Chemainus) to Thetis Island (Preedy Harbour) to Penelakut Island (Penelakut Island)
21	Denman Island West (Denman Island West) to Buckley Bay – Vancouver Island (Buckley Bay)
22	Denman Island East (Gravelly Bay) to Hornby Island (Shingle Spit)
23	Campbell River – Vancouver Island (Campbell River) to Quathiaski Cove – Quadra Island (Quathiaski Cove)
24	Heriot Bay – Quadra Island (Heriot Bay) to Whaletown – Cortes Island (Whaletown)
25	Port McNeill – Vancouver Island (Port McNeill) to Sointula – Malcolm Island (Sointula) to Alert Bay – Cormorant Island (Alert Bay)
26	Skidegate – Graham Island (Skidegate) to Alliford Bay – Moresby Island (Alliford Bay)
28	Port Hardy – Vancouver Island (Bear Cove) to Bella Coola – Central Coast (Bella Coola) Seasonal Direct Service
30	Tsawwassen – Metro Vancouver (Tsawwassen) to Nanaimo – Vancouver Island (Duke Point)

⁴ A new seasonal central coast service between Port Hardy and Bella Coola will commence in 2018.

2

BACKGROUND



2.1 | GOVERNANCE AND REGULATORY MODEL

The terms of reference for this review focus on the operations of coastal ferry services rather than the governance of B.C. Ferries. The Province did not mandate any wholesale examination of the current governance structure, so this review makes only a few governance related comments and recommendations which, if implemented, would reform rather than fundamentally revise the current model. Nonetheless, an understanding of the complex governance model is necessary context for an understanding of the operating system.

The governance of BC Ferries changed substantially in 2003 when it became an independent company. Prior to that, public ferries were first (from 1960 to 1977) a division of the BC Toll Highways and Bridges Authority. In 1977 BC Ferries became a Crown Corporation with passage of the British Columbia Ferry Corporation Act and the company operated as a Crown for more than 20 years. Consideration of a change to the Crown Corporation model was motivated by a 1999 report on the fast ferry project by the Auditor General of B.C. which found that BC Ferries had lost control of its capital plan.⁵ Partially in response to that conclusion (as well as a review report by Fred R. Wright, FCA⁶), the Coastal Ferry Act of 2003 (the Act) significantly changed the overall paradigm for coastal ferries

The 2003 legislation passed by the Gordon Campbell administration established a new governance model for the B.C. coastal ferry system that consists of four major components:

The B.C. Ferry Authority (beneficial shareholder); British Columbia Ferry Services Inc. (BC Ferries - the main ferry operator), the BC Ferry Commission (an independent regulator) and a Coastal Ferry Services Contract (a 60 year contract between the Government of British Columbia and British Columbia Ferry Services Inc.).

The Coastal Ferry Act has subsequently been amended twice. In 2010, the Commissioner was given an additional responsibility to consider the interests of ferry users when rendering decisions. In 2012, after a comprehensive review of the Act by then Commissioner Gord Macatee, a number of significant amendments were passed. Some of the most important changes included removal of the previous prohibition of cross-subsidization between

⁵ A Review of the Fast Ferry Project: Governance and Risk Management Office of the Auditor General of British Columbia, October 1, 1999. <http://www.bcauditor.com/pubs/1999/report5/review-fast-ferry-project-governance-and-risk-management>

⁶ Review of BC Ferry Corporation and Alternative Uses for the Fast Ferries, December 2001 https://www2.gov.bc.ca/assets/gov/driving-and-transportation/reports-and-reference/reports-and-studies/ferries-marine/review_bc_ferry_corporation_alternative_uses_fast_ferries_wright_report.pdf

route groups, introduction of performance reviews, a new power for the Commissioner to authorize fuel deferral accounts and strengthening of capital reviews under Section 55

The main components of the governance model are briefly explained below:

The B.C. Ferry Authority is the owner of BC Ferries. The Authority is a not for profit capital corporation that holds the sole voting share in the operating company British Columbia Ferry Services Inc. It appoints the Board of Directors of BC Ferries and approves compensation plans of the operating company for both the executive and Board Directors. The Authority's Board consists of nine directors: i) two appointed by the Province by Order-in-Council; ii) four nominated by coastal regional districts through "appointment areas" defined by Order-In-Council; iii) two members at-large appointed by the extant Authority Board; and iv) one representing the trade union for BC Ferries workers. Because the provincial government only appoints two of nine directors it is not in a position to direct the company and does not appoint the Chair.

British Columbia Ferry Services Inc. is an independent operating company registered under the Business Corporations Act and mandated by the Coastal Ferry Act to operate on a "commercial" basis. BC Ferries is able to access private financing and manage its own debt without approval of the government. As a corollary, BC Ferries issues its own bonds, maintains its own credit rating separate from the government's rating and is not part of the "Government Reporting Entity". BC Ferries has no publicly traded stock. The operating company is accountable to the B.C. Ferry Authority and the BC Ferries Commissioner.

The respective roles and responsibilities of the Board of the B.C. Ferry Authority and the Board of British Columbia Ferry Services Inc. are set out in a Protocol Agreement agreed to in October of 2010.

The British Columbia Ferries Commissioner is an independent regulator of coastal ferry service with a core responsibility to regulate fares. As set out in the Coastal Ferry Act the Commissioner must: balance the interests of ferry users, taxpayers and the financial sustainability of ferry operators; encourage ferry operators to adopt a commercial approach to ferry service delivery; encourage ferry operators to seek alternative providers of service through open, competitive processes; and encourage ferry operators to be innovative and to minimize expenses without adversely affecting safety of core services. Amongst other duties, the regulator monitors adherence to the Coastal Ferry Services Contract, approves capital expenses and oversees customer complaint processes of ferry operators.

Current members of the BC Ferry Authority Board of Directors:

Yuri L. Fulmer, Chair
(Community-at-Large)

Shelley L. Chrest
(Central Vancouver Island and Northern Georgia Strait appointment area)

Fiona L. Macdonald
(Community-at-Large)

Shirley J. Mathieson
(Organized Labour)

Susan G. Mehinagic
(Southern Vancouver Island appointment area)

G. Wynne Powell
(Province)

Michael W. Pucci
(Northern Coastal and North Island appointment area)

Sandra A. Stoddart-Hansen
(Southern Mainland appointment area)

Paul L. Williams
(Province)

Funding for the Commissioner is provided by ferry operators, based on a formula set out in the Act. Because BC Ferries is a natural monopoly, an independent regulator is key to protecting the public interest.

The Province of British Columbia is responsible for establishing public policy related to ferry service.

As well, the Province owns 75,477 non-voting 8% cumulative shares of BC Ferries, each with a par value of \$1,000. Section 3 of the Coastal Ferry Act stipulates that if the BC Ferry Authority ever sells its single voting share, then the government must receive repayment of its capital, the Authority is dissolved and all remaining assets of the Authority vest in the government. In effect, this means that if the BC Ferry Authority were ever to attempt to sell its single voting share, the company would revert to the Province. The government (through the BC Transportation Financing Authority) also owns the lands on which the terminals sit and leases them on a long-term basis to BC Ferries. The Province provides an annual service fee to BC Ferries through a 60-year Coastal Ferry Services Contract.

The Coastal Ferry Services Contract is a 60-year contract between the Province and BC Ferries that defines routes and service levels, as well as other details of the relationship between the main ferry operator and the provincial government. The Contract can be amended by mutual agreement of the parties and – so far – has been revised 14 times. Through the Contract the Province provides an annual service fee to BC Ferries in exchange for operation of service on the specified routes as well as specific funding for social policy initiatives such as assistance for medical travel, discounts for senior citizens, free or discounted travel for school students, travel by the disabled and travel by sports teams. Additionally, the Contract defines funding to BC Ferries for management of operating contracts on unregulated routes.

The Contract reflects the four year performance terms (PT) stipulated by the Act. In addition to discrete amendments the parties agree to from time to time, the Contract is amended for each new four year performance term following price cap reviews conducted by the Commissioner.

Current members of the BC Ferry Services Inc. Board of Directors:

Donald P. Hayes – Chair since 2009
(CEO of Vestis Fashion Group Inc.)

P. Geoffrey Plant, Q.C. - Vice Chair
(partner in the law firm Gall Legge Grant & Munroe LLP, Chancellor of Emily Carr University of Art and Design and former Attorney General of B.C.)

Bruce A. Chan
(General Partner at Teekay Offshore GP LLC and founder of Teekay Shipping)

Jan K. Grude
(past President and CEO of Pacific Blue Cross)

John A. Horning
(Executive Vice President of Interfor)

Brian G. Kenning
(Director on the Boards of MacDonald Dettwiler, West Fraser Timber and Adventus REIT)

Gordon M. Kukec
(independent consultant on the impact of emerging environmental and technology developments on business transformation)

Judith F. Sayers
(President of the Nuu-chah-nulth Tribal Council and a member of the Hupacasath First Nation. Adjunct Professor at the University of Victoria)

Sarah A. Morgan-Silvester
(past Chair of Vancouver Fraser Port Authority and Chancellor Emeritus of the University of British Columbia)

The regulatory model for BC Ferries is a “price cap” system. For each new four year performance term, the Commissioner sets a cap on the annual maximum increase in overall fares for the duration of the term. Price cap determinations are based on a review by the Commissioner of operating and capital costs required to implement the service levels specified in the Contract, a rate of return on equity sufficient to fund borrowing for capital costs, provincial service fees, and other projected revenue. The company’s compliance with the price cap decision is monitored by the Commissioner on a quarterly basis. The current performance term (PT4) began on April 1, 2016 and expires March 31, 2020. The annual price cap for the term has been 1.9 per cent which closely matches the current annual increase in provincial inflation and is a much lower price cap than in previous price terms. The price cap approach is considered to be “light” regulation compared to the more prescriptive processes used by regulators such as the British Columbia Utilities Commission. Proponents of the price cap system believe it provides flexibility to BC Ferries to lower costs within the cap which in turn incentivizes innovation and efficiency. The Commissioner generally sets “efficiency targets” as part of price decisions in order to push the company to lower its costs.

Because capital and debt decisions by the ferry operator are crucial to other price cap factors such as return on equity and ongoing costs, Section 55 of the Act stipulates that a ferry operator must not incur a major capital expenditure without first obtaining the Commissioner’s approval.

2.2 | UNREGULATED FERRY ROUTES

The Coastal Ferry Services Contract identifies eight “unregulated routes” in its Appendix 2. These routes are operated by independent ferry contractors and service small and remote communities. The contracts are funded by the provincial government but administered by BC Ferries. While these contracted routes are regulated for safety by Transport Canada they are not subject to economic regulation by the BC Ferry Commission. Historically, such routes were sub-contracted when BC Ferries was a Crown Corporation just as they are today. When BC Ferries was transformed from a Crown Corporation to an independent company in 2003, the unregulated routes were brought within the Coastal Ferry Services Contract and for continuity these routes remained unregulated as before.

BC Ferries is responsible for managing the contracts with private operators on these routes as well as for retendering and/or renegotiating the contracts six months before they expire. Under the Coastal Ferry Services Contract, the Province provides an annual service fee to BC Ferries for each of these routes for flow-through to the private operators. Within six months of the end of each performance term, the parties have the option to convert an unregulated route to a regulated BC Ferries route, however, this provision has never been used.

Three out of the eight unregulated routes (#51, #60 and Tuck Inlet) are operated by First Nations.

The table below lists all of the unregulated routes with some of the pertinent details on each of the routes. The current Coastal Ferry Services Contract provides for total funding of up to \$3.1 million per year from the B.C. government to support all the unregulated routes.

Table 1 | Unregulated Ferry Routes

Route	Distance (kms)/ crossing time	Frequency (return trips per week unless noted) / ports of call	One-way fare (before applicable taxes) (passenger only)	Service type	Contractor and vessel (* - first nations-operated)
#25u Alert Bay – Sointula – Port Mcneil	12 Crossing time: 35 mins	Minimum 1 return trip per school day from September through June Ports of Call: Malcolm Island (Sointula), Cormorant Island (Alert Bay) and Port McNeil	Students – free when travelling to/from school All other passengers – pay fares equal to travelling on BC Ferries’ Route 25 (Round trip: \$10.45)	Passenger	Western Pacific Marine Ltd Vessel: MV Spirit of Yalis Year Built: 1986
#51 Ahousaht and Hot Springs Cove to Tofino	25 Crossing time: 45 mins	Apr. – Sept. – 2 Oct. – Mar. – 1 per week Ports of Call: Ahousaht Village, Tofino and Hot Springs Cove Village	Ahousaht- Tofino/ Hot Springs Cove – Ahousaht: \$12.50 Freight: \$0.55 / kg Hot Springs Cove to Tofino \$17.50 Freight: \$0.75 / kg	Passenger & Freight	*Ahous Business Corporation Ltd Vessel: MV Ahous Kahoom (Kayla Marie) Year Built: 1989
#53 Gold River and Tahsis to Kyuquot	125 Crossing time: 9 hrs	2 Ports of Call: Gold River, Nootka Sound/Tahsis Inlet/Esperanza/ Zeballos and Kyuquot	\$72.0 Freight: \$0.105 / lb with a minimum charge of \$10.50	Passenger & Freight	Nootka Sound Service Ltd Vessel: UCHUCK III Year Built: 1942
#54 Dodge Cove to Prince Rupert	7 Crossing time: 20 mins	4 (June 7 – Sept. 10) 7 (remainder of the year) Ports of Call: Prince Rupert and Dodge Cove	\$5.00 \$3.00 (regular rider using punch cards)	Passenger	West Coast Launch Ltd Vessel: MV Northport Year Built: 1994 Vessel: Westcoast IV Year Built: 1994
#55 Lasqueti isl. to French Creek	17 Crossing time: 1 hr	Peak – 17 Off-peak – 14 Ports of Call: French Creek and False Bay	Peak - \$11.75 Off-peak - \$10.50 Freight: \$0.10 / lb (note: max. fare increases at a compounding rate of 4.15% per annum)	Passenger & Freight	Western Pacific Marine Ltd Vessel: MV Centurion VII Year Built: 1985
#59 Port Alberni to Bamfield	55 Crossing time: 4 hrs 30 mins	3 Ports of Call: Port Alberni, Kildonan/Uchucklesaht, San Mateo Bay, Trevor Channel, Tzartus Island, Bamfield and Ucluelet	\$42.00 Freight: \$0.115 / lb minimum charge of \$11.50	Passenger & Freight	Lady Rose Marine Service Ltd Vessel: MV Frances Barkley Year Built: 1958
#60 Hartley Bay to Prince Rupert	150 Crossing time: 3 hrs 30 mins.	2 Ports of Call: Prince Rupert, Metlakatla, Oona River, Kitkatla and Hartley Bay	\$60.00 Freight: \$0.25 per pound	Passenger & Freight	*North Co-Corp Ferry Service Ltd Vessel: TSIMSHIAN STORM Year Built: 2003
Tuck Inlet to Prince Rupert	18.5 Crossing time: 45 minutes	14 Ports of Call: Lax Kw’alaams Village (Tuck Inlet) and Prince Rupert	\$21 adult \$32 vehicle & driver	Car & Passenger	* Lax Kw’Alaams Band Ferry Corporation Vessel: Spirit of Lax Kw’alaams, formerly named MV Nicola Year Built: 1960

Data source: Ministry of Transportation and Infrastructure

While the Tuck Inlet service is considered an unregulated route in the Coastal Ferry Services Contract, the Ministry of Transportation and Infrastructure has a separate direct contract with the Lax Kw'alaams Band Ferry Corporation, which provides an annual operating subsidy of up to \$400,000. This agreement between the Province and the Band was initially signed on July 28, 2015 and updated on September 10, 2016. In addition to extra ferry trips to Prince Rupert, the agreement provides funding for ongoing maintenance of the docks serving the route. The Lax Kw'alaams Band Ferry Corporation also has a charter agreement in place with BC Ferries for use of a vessel (the *Spirit of Lax Kw'alaams*) which is owned by BC Ferries.

Ferry Advisory Committees for areas served by BC Ferries are created and supported by BC Ferries. There are no similar Ferry Advisory Committees for the unregulated routes. Given that the unregulated routes generally serve very small regional communities, it is probably not warranted to set up similar full advisory committees for them. That said, it would nonetheless be a good idea for the Ministry of Transportation and Infrastructure to consult with these communities more regularly to ensure any concerns about ferry service are identified and responded to.

Recommendation:

The Ministry of Transportation and Infrastructure should establish a regularized process of public engagement with ferry operators and communities served by unregulated ferries to give an opportunity for communities to raise ferry service issues and for the government to respond to them.

2.3 | ALTERNATIVE SERVICE DELIVERY

The original plan for BC Ferries as an independent company was that it would not only provide ferry services directly but would also, as appropriate, contract out service on particular routes and thereby act as a service integrator. Section 38 (1)(c) of the Coastal Ferry Act says this is a principle which the regulator must apply while Section 69 (“Additional or alternative service providers”) sets out the process for how such contracting out should take place.

The generic use of the term “ferry operator” throughout the Act also reflects the possibility of additional operators besides BC Ferries. As it has turned out, BC Ferries is the only ferry operator regulated under the Act.

Prior to 2010 amendments to the Act, ferry operators were required to put forward a plan for alternative service providers every performance term. Now, Section 69 puts the onus on the Commissioner to order ferry operators to seek additional or alternative service providers, submit plans for the Commissioner’s approval regarding the selection process for such providers, and report to the Commissioner on the results of the processes. The general objectives for these orders are to attempt to reduce costs and, with regard to competitive services, ensure ferry operators do not have an unfair competitive advantage.

In the event (and despite repeated attempts) only one route was ever contracted out – Route 13, the water taxi service connecting Langdale with Keats and Gambier Islands. Interestingly, in that case the contracting out actually took place in December of 2002, prior to passage into law of the Coastal Ferry Act.

In the period from 2003 to 2009, BC Ferries attempted several times to identify alternative providers for particular routes, but always unsuccessfully.⁷ Various Requests for Expressions of Interest and Requests for Proposals were issued and other efforts made to try and find alternative providers for:

- Route 25 (Port McNeill-Sointula-Alert Bay)
- Route 17 (Powell River-Comox)
- Route 18 (Powell River-Texada)
- Route 12 (Mill Bay-Brentwood Bay)
- Route 23 (Campbell River-Quadra)
- Route 24 (Quadra-Cortes)
- Route 10 (Port Hardy-Prince Rupert)
- Route 11 (Haida Gwaii-Prince Rupert)
- Route 26 (Skidegate-Alliford Bay)
- Former Route 40 (Port Hardy-Mid Coast)
- A proposed alternative service for Ocean Falls-Shearwater.

None of this effort resulted in the awarding of a contract to an alternative service provider. Some of the reasons may include that:

- private operators naturally want access to the same provincial government subsidy paid to BC Ferries, in which case they may not offer a real cost advantage;
- economies of scale give an advantage to a large operator like BC Ferries;
- BC Ferries is exempt from paying income tax, unlike private operators;
- private investors require longer contract terms of at least 10 years which does not fit well with the four year performance term regulatory system;
- successful bidders need to demonstrate a proven safety record and long term financial liability;
- bidders did not offer sufficient risk transfer;
- in some cases (like the proposed alternative provider for Ocean Falls-Shearwater) the provincial government did not provide necessary authorization; and,
- other than the need to comply with regulatory requirements, BC Ferries does not have an institutional incentive to choose an alternative provider.

There are likely other reasons as well, but whatever the reason, no alternative service provider was identified prior to the 2010 amendments to the Act and the Commissioner has not ordered an alternative service plan subsequent to those amendments. There has been no activity on this score since 2009.

The question this raises is whether the Act should be amended to eliminate Section 69. It might be argued that it does not hurt to continue with this section even if it is never used, but it does not seem appropriate to continue with a legislative mechanism that has never worked and which has not been used for a decade.

⁷ All these attempts are documented on the Commissioner's website in a section titled "ASP Plan Milestones" <http://www.bcferrycommission.ca/faqs/other-ferry-companies/asp-plan-milestones/>

Another more fundamental concern with eliminating Section 69 is that doing so would strengthen the natural monopoly already enjoyed by BC Ferries. Problematic service levels for routes like Route 26 (Skidegate-Alliford Bay) could potentially be mitigated with an extra water taxi or other private ferry service complementing the regular service provided by BC Ferries, but Section 69 is not necessary to accomplish this. Other options for improving service on Route 26 include additional provincial funding to restore former service levels or the provincial government directly contracting with a supplementary provider itself.

Indeed, the provincial government always has the option of directly contracting with ferry operators other than, or in addition to, BC Ferries. And, of course, BC Ferries can always voluntarily choose to contract with an alternate provider.

All things considered, it seems appropriate to eliminate Section 69.

Recommendation:

The Coastal Ferry Act should be amended by repealing Section 69, section 38 (1)(c) and any related sections regarding additional or alternative service providers.

2.4 | COMMERCIAL APPROACH

Section 38 (1)(b) of the Coastal Ferry Act states another principle of coastal ferry regulation which is that “...*ferry operators are to be encouraged to adopt a commercial approach to ferry service delivery.*”.

Although section 1 of the Act does define what a “competitive service” is, particularly in the context of drop-trailer service, there is no definition of what is meant by a “commercial approach”. This may be one reason why there is little evidence of the Commissioner overtly requiring a commercial approach, though the principle has likely informed the price cap process. Competitive services are discussed in the Orders of the Commissioner on drop-trailer service but there have been no Orders directly defining or explicitly mandating a commercial approach.

Though B.C. Ferry Services Inc. is registered under the Business Corporations Act the company is contracted to provide core ferry services to coastal communities as part of the provincial transportation system. Its non-voting shares are held by the provincial government and it is dependent on hundreds of millions of dollars per year in public subsidies. When it generates positive net earnings, those funds are not paid out as profit (except for an annual dividend of \$6 million paid to the Province). Instead they are reinvested in the debt and operations of the company, as BC Ferries has no private shareholders. In all those ways it is clearly not a typical private sector company so it is unclear what a commercial approach means in this context. Further, there is potential for a commercial approach to be at odds with the primary role of the Commissioner which is to balance the interests of ferry users, taxpayers, and the financial sustainability of the ferry operator.

Section 1 (d) of the Act sets out another principle for the regulator which is that “...*ferry operators are to be encouraged to be innovative and to minimize expenses without adversely affecting their safe compliance with core ferry services.*...” This principle is more concrete than the commercial approach principle. Innovation and cost effectiveness are good goals which are consistent with the public interest in reliable and affordable ferry services. As technology and best practices evolve, it is important that BC Ferries be encouraged to innovate in an efficient manner in order to improve service for ferry users and coastal communities.

BC Ferries should be as innovative as possible but an amorphous “commercial approach” is not a necessary prerequisite. If the commercial approach requirement were removed, BC Ferries would still have budget incentives to generate ancillary revenue, would still be motivated to innovate in order to improve service, and would still be able to borrow funds from private lenders.

Recommendation:

Section 38 (1) (b) of the Coastal Ferry Act should be repealed.

2.5 | TRENDS IN FARES, TRAFFIC, AND PROVINCIAL FUNDING

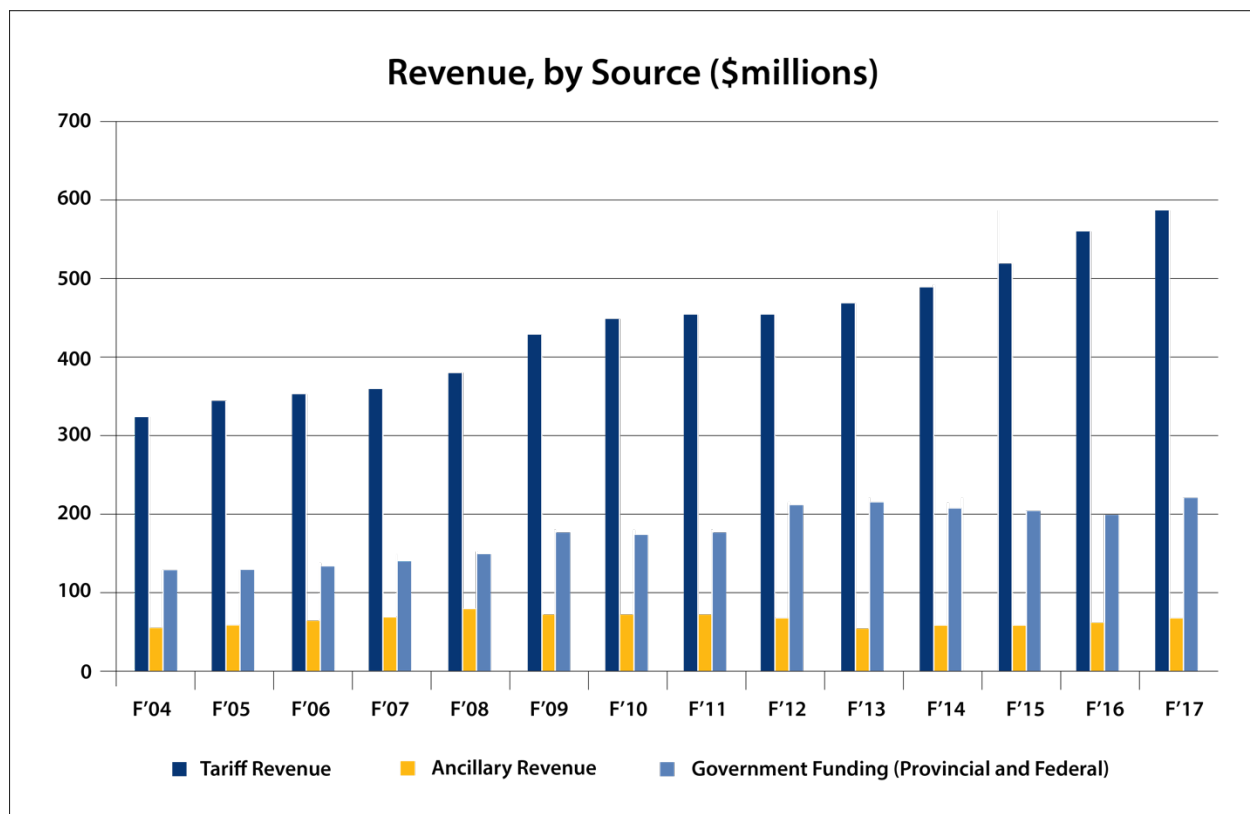
REVENUE

BC Ferries has three main sources of revenue:

- Tariffs – fares collected from vehicles and passengers.
- Ancillary revenue – collected from services on board and at terminals such as retail sales, catering and parking and reservation fees.
- Government funding – ferry transportation service fees and social program reimbursements from the provincial government and an annual inflation adjusted subsidy from the federal government. The bulk of government funding comes from the Province of British Columbia in the form of Ferry Transportation Fees set according to the Coastal Ferry Services Contract.

Since 2004 tariffs have increased sharply. Despite a slackening of demand over most of the period, tariff revenue increased more dramatically than either government funding or ancillary revenue. Total revenue increased from \$509 million in 2003-2004 to over \$880 million in 2016-2017, an increase of 73%. Tariff revenues increased from \$323 million in 2003-2004 to almost \$590 million in 2016-2017, which was an 82% increase, whereas total government funding increased from \$129 million to \$221 million during the same period, or a 71.3% increase.

Figure 1 | Revenue, by Source, by Source

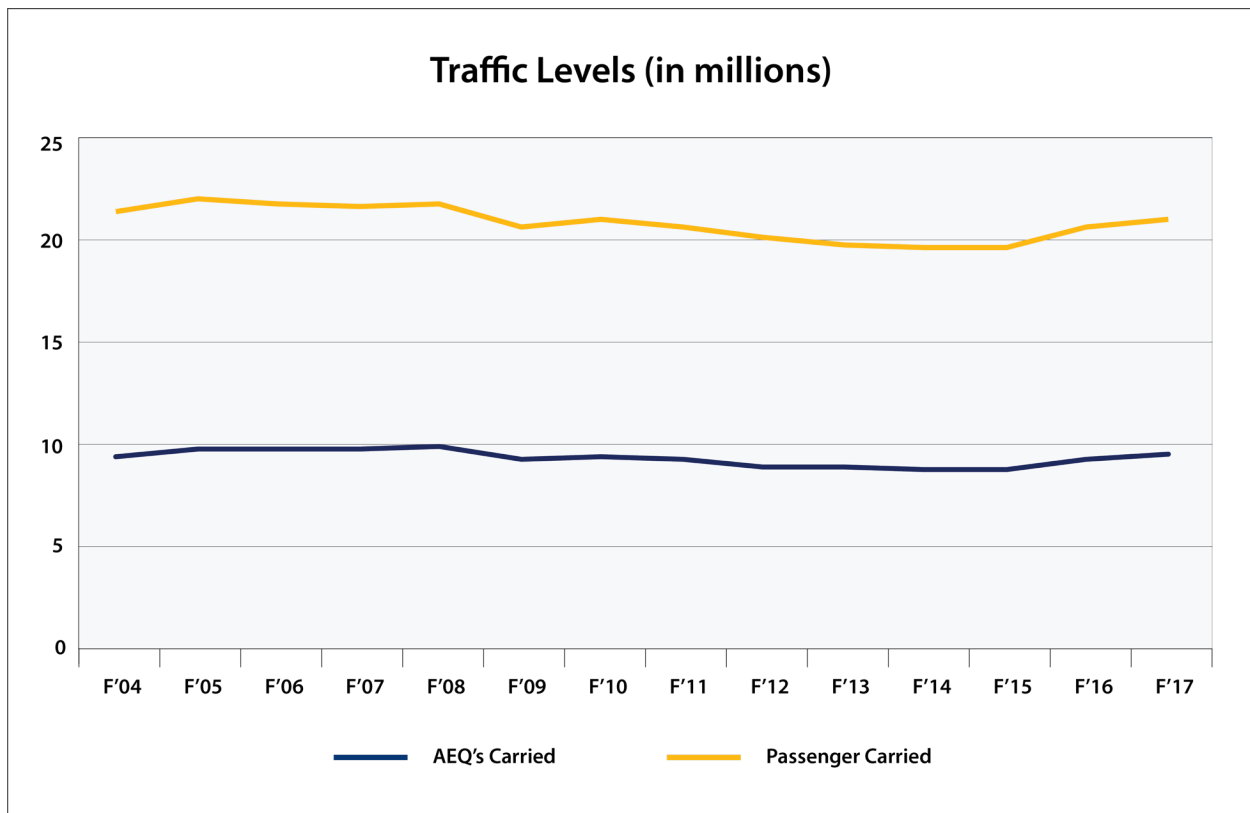


Data Source: BC Ferries Annual Reports to the BC Ferries Commissioner
http://www.bcferrys.com/about/commissioner_reports.html

TRAFFIC

Annual traffic volume has not increased significantly since 2003-2004, though the trend is upwards in the last two years. Given rising fares and the global economic downturn of 2008, the numbers of passengers and vehicles carried by BC Ferries declined for several years. The lowest point for both vehicle and passenger traffic was 2014 when annual vehicle traffic dropped to a low of 19.6 million passengers and 7.6 million vehicles. Traffic volumes started rising again in 2015, with passenger traffic increasing at a slightly higher rate than vehicle traffic. Nonetheless, traffic levels in fiscal 2017 had still not reached the peak of 2005.

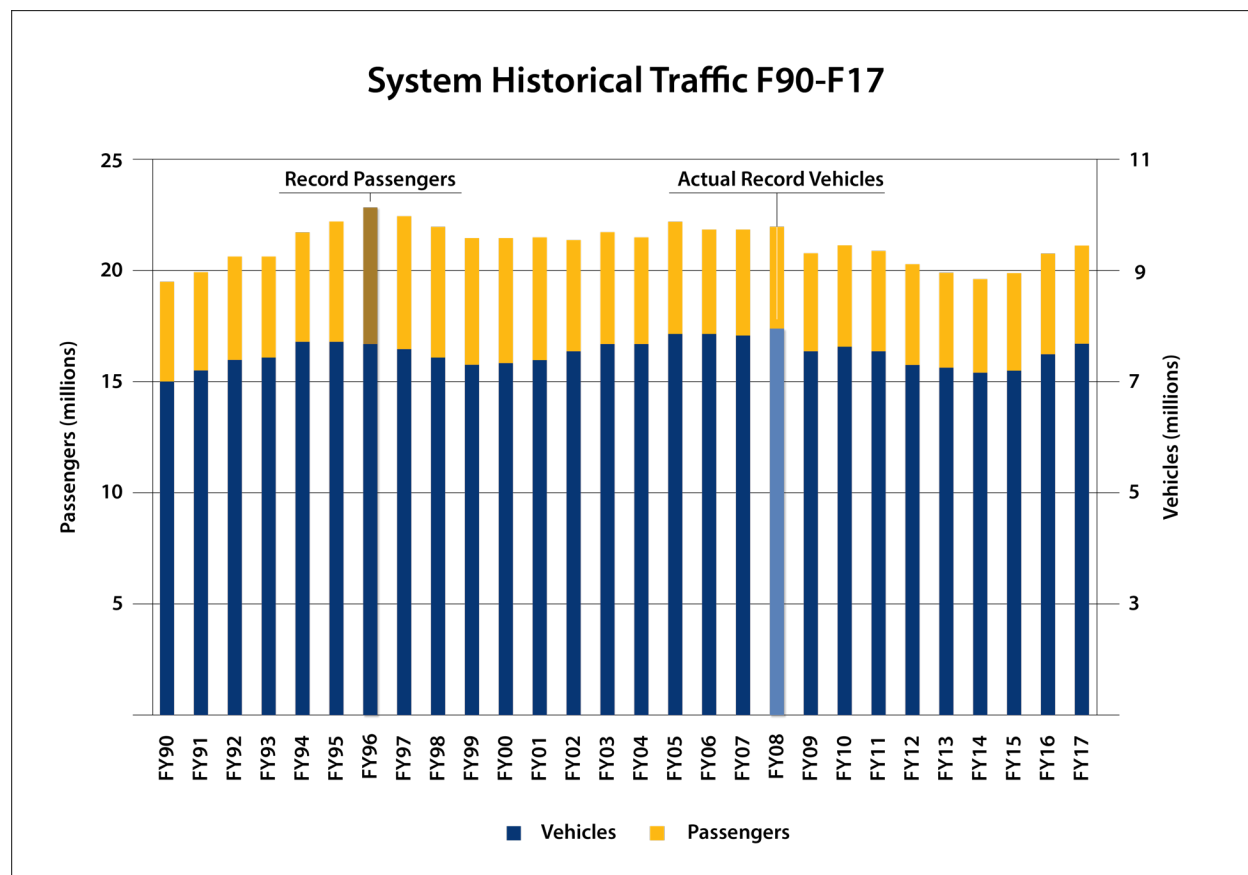
Figure 2 | Traffic Levels (in millions)



HISTORICAL COMPARISON

Overall traffic volumes were highest in the mid-1990s peaking in 1995-1996 at 22.512 million passengers and 8.2 million vehicles. When vehicles only are considered the record was in 2008. After the 2014 trough, overall traffic volumes started to increase again in 2015 and 2016 but by 2017 overall traffic (8.578 million vehicles and 21.788 million passengers) was still lower than 2008. BC Ferries is forecasting a record numbers of passengers in fiscal 2018.

Figure 3 | System Historical Traffic (F90-F17) Traffic (F90-F17)



Data Source: BC Ferries

TRAFFIC IN 2017 AND 2018

Increasing traffic levels in 2017 and 2018 are likely related to a number of structural factors such as a strong provincial economy, a strong U.S. currency compared to the Canadian dollar, regulated price cap increases of 1.9% which are close to inflation so easier for users to adjust to, and last summer's wildfires in the interior of B.C. which encouraged a significant number of travellers to vacation on the coast rather than in the interior. Whatever the reasons, seven out of 12 months in 2017-2018 had a higher than 5% increase in traffic levels month over month compared to the previous year.

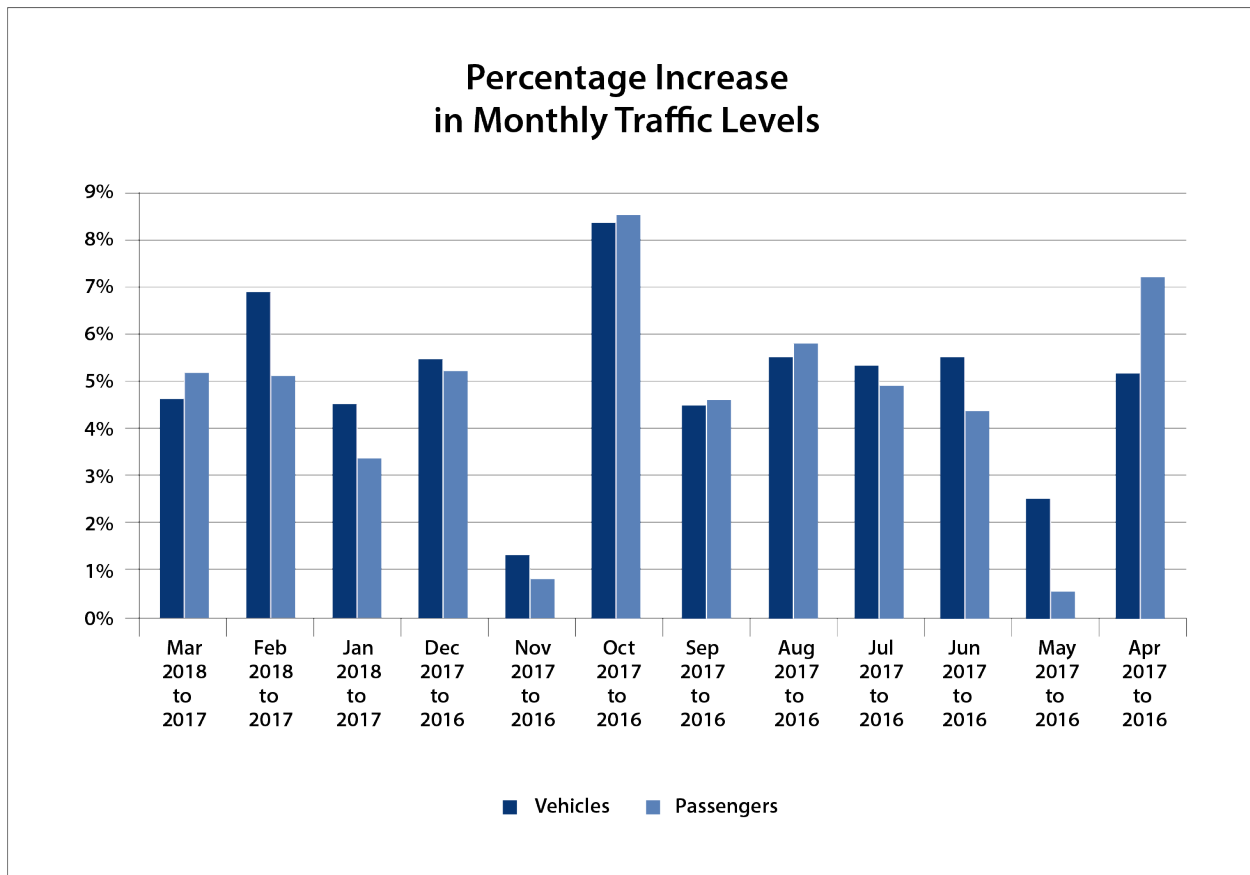
The table below compares percentage increase in monthly traffic levels between each month of 2016-2017 and 2017-2018. The data shows that even in slower months like November and January which traditionally have less traffic there was a positive trend in traffic growth over the last year.

Table 2 | Comparison of Monthly Traffic Levels between 2017 and 2018

MONTH	VEHICLES			PASSENGERS		
	Month current year	Month previous year	% to previous year	Month current year	Month previous year	% to previous year
MARCH 2018	664,772	634,846	4.71	1,605,394	1,526,069	5.2
FEBRUARY 2018	505,133	472,158	6.98	1,184,807	1,127,184	5.11
JANUARY 2018	522,078	499,422	4.54	1,194,342	1,156,070	3.31
DECEMBER 2017	630,523	597,527	5.52	1,554,547	1,477,354	5.23
NOVEMBER 2017	588,196	580,523	1.32	1,357,396	1,346,084	0.84
OCTOBER 2017	704,127	649,583	8.40	1,734,982	1,597,231	8.62
SEPTEMBER 2017	808,283	773,437	4.51	2,022,736	1,932,377	4.68
AUGUST 2017	1,056,516	999,750	5.68	2,972,514	2,807,274	5.89
JULY 2017	1,001,308	950,480	5.35	2,814,516	2,681,989	4.94
JUNE 2017	813,269	779,205	5.59	2,058,579	1,972,979	4.34
MAY 2017	757,151	738,541	2.52	1,891,329	1,881,805	0.54
APRIL 2017	672,079	639,370	5.12	1,639,086	1,529,060	7.2

Data source: BC Ferries Traffic Statistics, <http://www.bcferrries.com/about/traffic.html>

Figure 4 | Percentage Increase in Monthly Traffic Levels

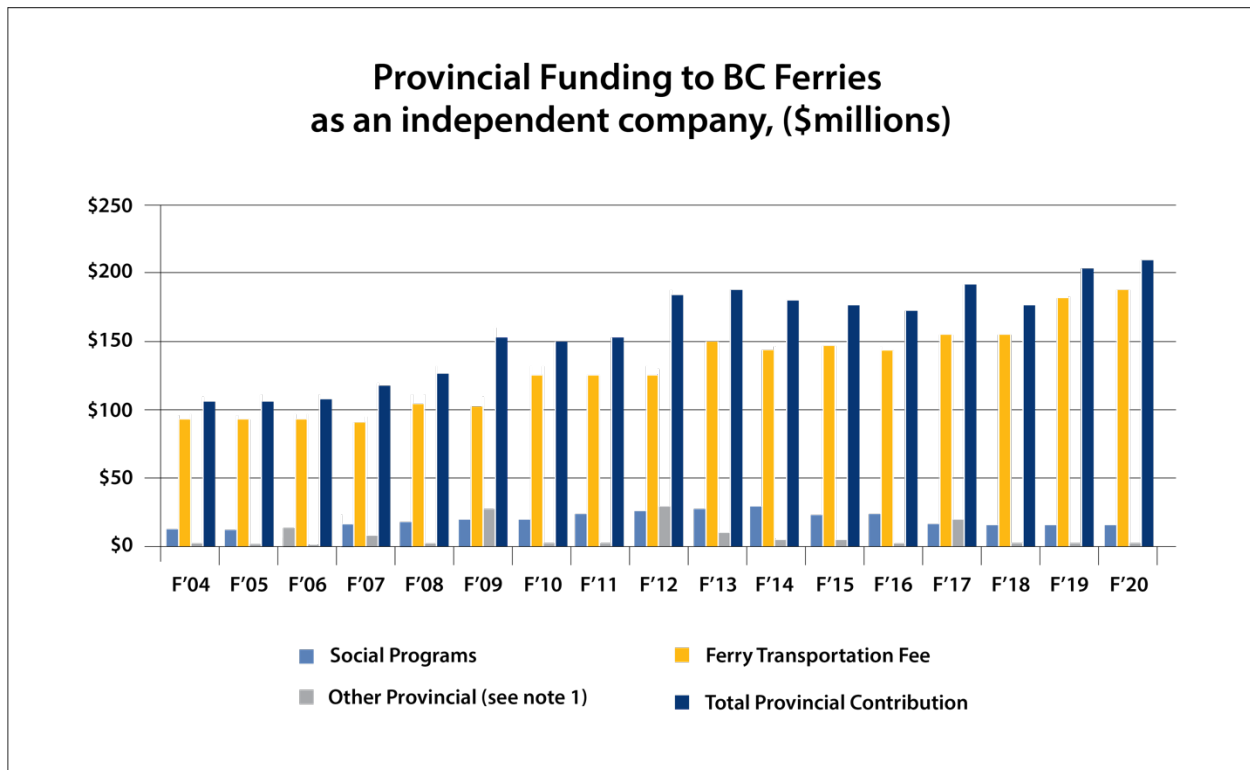


Data source: BC Ferries Traffic Statistics, <http://www.bcferries.com/about/traffic.html>

PROVINCIAL FUNDING TO BC FERRIES

Once 2019/20 budgeted amounts are expended, the B.C. government will have contributed more than \$2.7 billion to B.C. Ferries since 2003. With the extra \$59 million contributed by the Province as part of its 2018 fare affordability initiative, the B.C. government is now providing more than \$200 million per year to the company. A summary of annual provincial funding by type of payment is displayed in the chart below.

Figure 5 | Provincial Funding to BC Ferries as an Independent Company

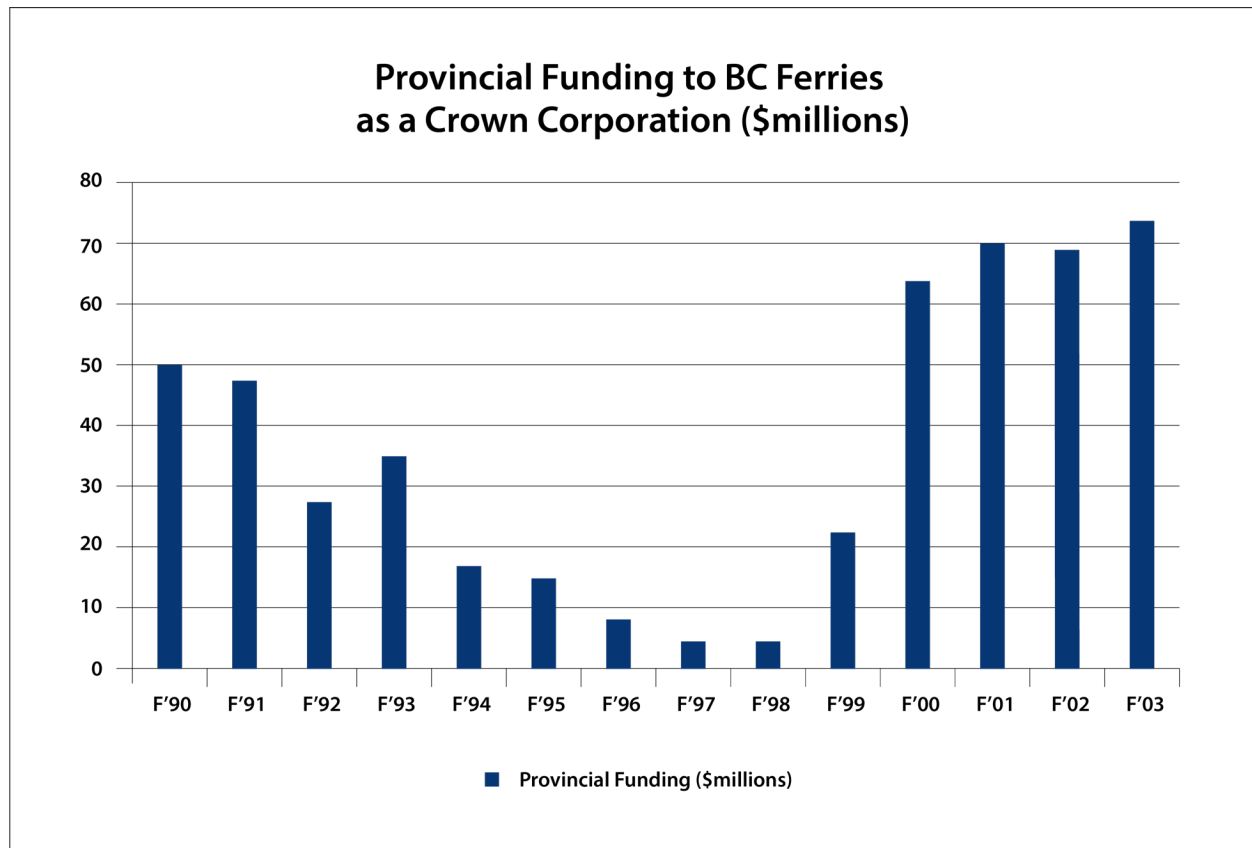


Data source: Ministry of Transportation and Infrastructure

(1) Other Provincial includes fuel payments, funding for transfer to Unregulated Routes, and one-time payments.

Provincial funding to BC Ferries rose rapidly in the early 2000s. In 1999 the BC government contributed just over \$20 million. By 2003/04 (when the new model began) the annual provincial contribution had risen to over \$100 million. This difference in provincial funding levels is especially pronounced given that during the period from 1990 to 1993 data on provincial funding rolled in the annual subsidy from the federal government.

Figure 6 | Provincial Funding to BC Ferries as a Crown Corporation

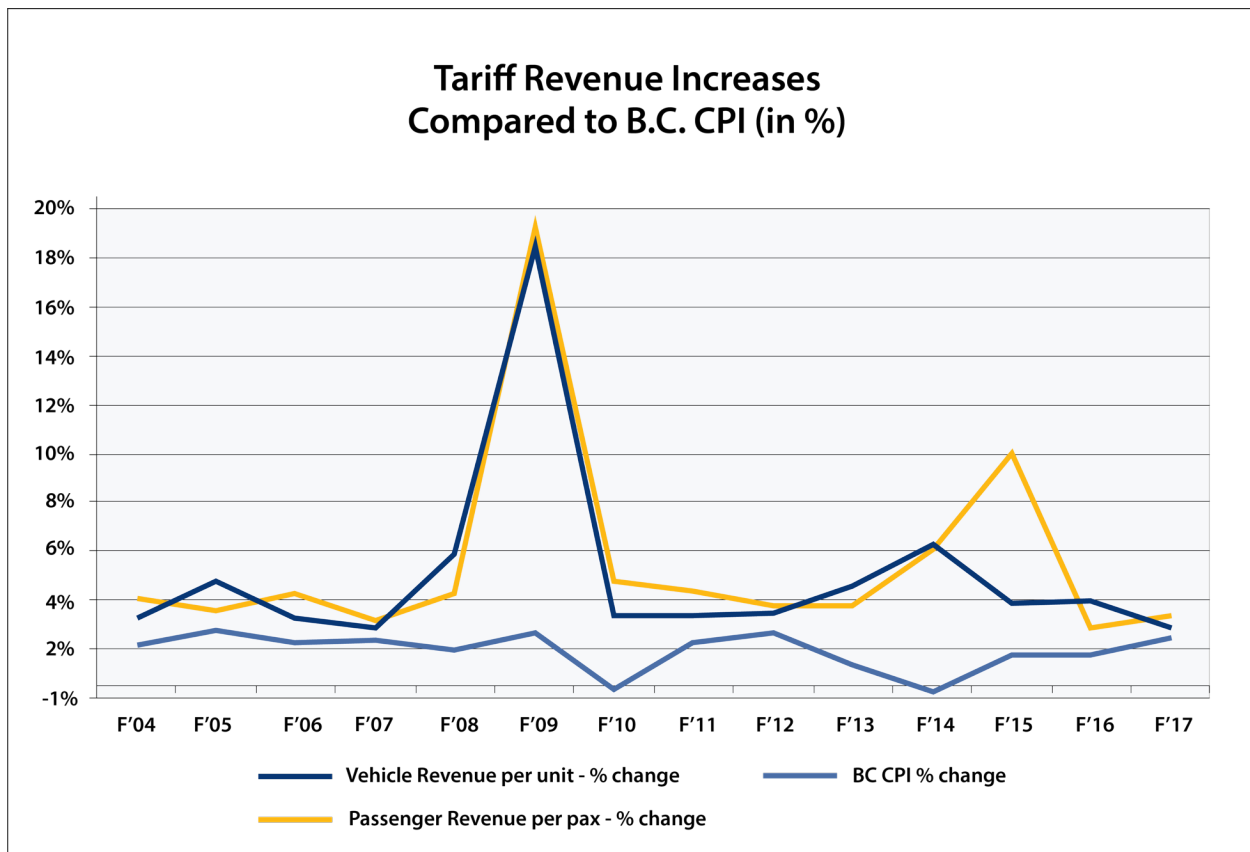


Data source: BC Ferries Annual Reports as recorded in Malcolm G. Bird. "Dire Straits Ahead. British Columbia Ferries, 1985-2014" in Bernier L. (ed.) *Public Enterprises Today: Missions, Performance and Governance: Learning From Fifteen Cases*. 2015. P.I.E. Peter Lang. Brussels.

TARIFF REVENUE INCREASES COMPARED TO INFLATION

The following chart shows tariff revenue increases for BC Ferries over the 13 years from 2004 to 2017, compared to the change in provincial inflation (ie: B.C. consumer price index - CPI). Annual tariff revenue increased significantly over this period from \$323 million in fiscal 2004 to \$589 million in fiscal 2017. Over the 13 year period tariff revenue increased by 80% for vehicles and 88% for passengers compared to only a 20% increase in B.C. inflation. There were two very sharp increases in tariff revenue in 2009 and 2015. These peaks and the general increase can be attributed mostly to rising fares as traffic stayed relatively the same during this period. After the Commissioner's decision to cap fare increases at 1.9% for each year of performance term 4, the growth in tariff revenues started to more closely match increases in CPI.

Figure 7 | Tariff Revenue Increase in Comparison to B.C. CPI



Data Source: BC Ferries Annual Reports to the BC Ferries Commissioner
http://www.bcferrries.com/about/commissioner_reports.html

FARES FOR CAR AND DRIVER

Fares are regulated through the price cap formula determined by the Commission. The following table provides a summary of various car and driver fares (including fuel adjustments) on a variety of routes for specific periods over the past fifteen years. Fares have been rising continuously, especially on the Northern routes, where they have doubled since 2003. In 2018, (as part of the fare affordability initiative) fares for all but the three major routes between the Lower Mainland and Vancouver Island were reduced by 15% and the discount for seniors was increased from 50% back to 100% on the major and minor routes. This was accompanied by a freeze on fare increases for the three major routes.

Table 3 | Sample Vehicle plus Driver Fares by Route Group: 2003 through 2018

ROUTE AND GROUP	APR 03	APR 04	APR 05	APR 06	APR 07	APR 08	APR 09	APR 10	APR 11	APR 12	APR 13	APR 14	APR 15	APR 16	APR 17	APR 18
Tsawwassen - Swartz Bay	\$44.75	\$46.00	\$48.95	\$52.25	\$53.80	\$61.40	\$58.50	\$59.50	\$61.50	\$64.10	\$66.75	\$69.50	\$72.30	\$73.65	\$74.70	\$74.70
Port Hardy / Mid Coast / Prince Rupert	\$332.00	\$344.00	\$375.25	\$424.30	\$441.30	\$475.30	\$500.00	\$560.00	\$590.00	\$614.00	\$639.25	\$649.00	\$662.25	\$675.00	\$675.00	\$573.65
Powell River - Texada	\$19.50	\$20.25	\$22.35	\$25.55	\$26.60	\$32.40	\$27.60	\$29.65	\$32.10	\$33.45	\$34.80	\$36.25	\$37.70	\$38.40	\$38.40	\$32.60

3

THE PUBLIC INTEREST



The Terms of Reference for this review ask for an examination of whether the current ferry service model “... is operating in the public interest”, whether coastal ferry service operations are being provided in a manner “...that supports the public interest in affordable fares” and whether the ferry system is working as efficiently and effectively as possible for all British Columbians and, in particular, ferry users and communities “...who depend on this essential service.”

It is worthwhile, then, to consider what constitutes the public interest in the coastal ferry system and why it is seen as essential, rather than discretionary.

The provincial government is by far the largest customer of BC Ferries, now contributing more than \$200 million annually to the revenue of the company and having provided more than \$2.7 billion since 2003 (when budgeted allocations for 2019/20 are included). The fact that the government set up the system through legislation and funds it so heavily is a strong indicator that the B.C. government believes efficient and affordable coastal ferry service is in the provincial public interest, but what other factors help to define the public interest in reliable, safe and affordable coastal ferry service? What parts of the economy and which sectors of society are particularly reliant on this service?

The Coastal Ferry Act (Section 1) defines “ferry users” as ferry passengers and their families, the communities served by coastal ferries and the businesses that rely on or utilize ferry services. The interests of those ferry users are key, but they are not the only British Columbians who benefit from the service. The entire province, and indeed the country, have a stake in the coastal ferry service.

3.1 | CONNECTING COMMUNITIES

Until recently, the stated mission of BC Ferries spoke to “...safe, reliable and efficient marine transportation services that consistently exceed the expectations of our customers, employees and communities, through the creation of enterprise value.”⁸

The Board of BC Ferries has now revised this. The company’s current mission is: “We connect communities and customers to the people and places important in their lives.” This new mission is an improvement because it speaks to a core purpose of the service which is to connect communities and customers. It is also less internally focused than the previous mission statement.

⁸ BC Ferries Business Plan for the year ending March 31, 2018 page 10

The most recent service plan of the B.C. Ministry of Transportation and Infrastructure also speaks to connections and bringing communities together, but in the context of broader government goals. For example: *“The Ministry is working toward a multi-modal interconnected transportation network that will support a clean, sustainable economy, address climate change, reduce greenhouse gas emissions and bring B.C.’s communities together through coordinated transportation services people can count on.”*⁹

No doubt it is in the public interest to have an interconnected and coordinated, multi-modal transportation network which connects communities while supporting the economy and the environment.

Other provincial governments have also attempted to define the public interest in transportation. Some examples include: i) maximizing the socioeconomic potential of remote communities; ii) safe and reliable movement of people, goods and services; iii) connecting citizens to work, recreation, services and each other; and iv) efficient, accessible transportation that supports a competitive economy and a high quality of life. The public interest in transportation includes a mix of economic, social and environmental aspects.^{10,11,12}

With regard to the public interest in ferry transportation more specifically, governments like Québec and Scotland make explicit statements about the role of ferry services within the broader transportation system.¹³ Scotland notes that ferry transportation is important not only for connecting isolated communities to the mainland but also vice versa.

⁹ BC Ministry of Transportation and Infrastructure 2018/19-2020/21 Service Plan page 10.

¹⁰ Government of Alberta Ministry of Transportation, About Us, <http://www.transportation.alberta.ca/593.htm> Accessed May 22, 2018

¹¹ Ontario Ministry of Transportation, About the Ministry, <http://www.mto.gov.on.ca/english/about/about-ministry.shtml> Accessed May 22, 2018

¹² Société des Traversiers du Québec, About STQ <https://www.traversiers.com/en/a-propos-de-la-societe/>, Accessed May 22, 2018

¹³ Transport Scotland, Scottish Ferry Services, Ferries Plan (2013-2022), Accessed from <https://www.transport.gov.scot/publication/scottish-ferry-services-ferries-plan-2013-2022/> May 20, 2018

ISSUE: North Coast Service Cuts

In 2014 the provincial government altered its contract with BC Ferries for Route 11 (Prince Rupert to Skidegate on Haida Gwaii) to reduce the number of required winter sailings from three per week to two. Service was also decreased on Routes 10 (Port Hardy to Prince Rupert) and 26 (Skidegate to Alliford Bay/Sandspit). These service cuts resulted in a 27% reduction in annual sailings between Prince Rupert and Skidegate and a 35% decrease in annual sailings between Skidegate and Sandspit. In 2017 some sailings were added back for Route 11, however local residents are still concerned that the 2014 cuts have not been made up and those dependent on ferry service still have trouble accessing needed services.

The North Coast service cuts have affected Haida Gwaii communities in numerous ways including: i) significant backlogs for truck transport; ii) trip cancellations by tourists; and iii) local residents being stranded while travelling for medical and other appointments. The social fabric of Sandspit has been hit the hardest by cancellation of the late evening sailing on Route 26. According to Greg Martin, Mayor of Queen Charlotte City, the absence of these sailings means ambulances are not able to provide late night emergency transport to the hospital in Queen Charlotte City, residents cannot use banking and government office services in Queen Charlotte City at times convenient for them and crime has become more of a problem in Sandspit as the RCMP are now on reduced hours. The main reason for elimination of the evening sailing is the decision by BC Ferries to cut the shift schedule from two 8 hour shifts to one 12-hour shift based largely on capacity utilization concerns. Stopping service at 6:00 PM effectively isolates Sandspit from needed services and social linkage. During preparation of Performance Term 5, as well as when the provincial government and BC Ferries next amend the service contract, it should be a priority to allocate funding for restoration of the previous two 8 hour shift schedule and evening service for Route 26 between Skidegate and Sandspit.

3.2 | SUPPORTING COMMUNITIES

BC Ferries serves 17 distinct community areas, 14 of which are represented by Ferry Advisory Committees (FACs). The three without FACs are: Metro Vancouver, the Capital Regional District and the Nanaimo Regional District. The 14 communities which do have FACs are:

- Northern Sunshine Coast (Powell River)
- Bowen Island
- Brentwood-Mill Bay
- Keats-Gambier Islands
- Gabriola Island
- Tri-Islands (Alert Bay, Sointula, Port McNeill)
- Denman-Hornby Islands
- Southern Gulf Islands (Galiano, Mayne, Pender, Saturna)
- North and Central Coast (Haida Gwaii-Prince Rupert-Port Hardy)
- Southern Sunshine Coast
- Thetis-Penelakut-Chemainus
- North and Central Coast
- (Bella Coola, Bella Bella, Shearwater, Ocean Falls, Port Hardy)
- Quadra-Cortes Islands
- Salt Spring Island

In addition, there are eight coastal community areas served by unregulated ferry routes:

- Alert Bay/Sointula/Port McNeil (Route 25u school ferry)
- Ahousaht/Hot Springs Cove/Tofino
- Gold River/Tahsis/Kyuquot
- Dodge Cove/Prince Rupert
- Hartley Bay/Prince Rupert
- Tuck Inlet/Prince Rupert
- Lasqueti Island/French Creek
- Port Alberni/Bamfield

ISSUE: Northern Sea Wolf

In 2016, the Province announced that direct seasonal service between Port Hardy and Bella Coola would recommence in the summer of 2018, after having been cut in 2013. In order to meet that timeline, BC Ferries decided to purchase and retrofit a used vessel from Greece. The sale of the ship was delayed by 14 weeks due to complications with the original owners. Once purchased and brought to Canada, the used vessel – now named the *Northern Sea Wolf* – had to be substantially upgraded to ensure compliance with Transport Canada regulations. The *Northern Sea Wolf* has been undergoing a major upgrade by Esquimalt Drydock Company since December 2017, but the work is taking longer than anticipated. The in-service date was originally meant to be mid-June 2018 but will be delayed by at least a month. Before the *Northern Sea Wolf* is fully ready to enter into service the *Nimkish* will service new route 28. The *Nimkish* is significantly smaller (fitting 12 vehicles and 95 passengers instead of 35 vehicles and 150 passengers) and has fewer amenities than the *Northern Sea Wolf*.

Due to the delay in bringing the *Northern Sea Wolf* into service, BC Ferries stopped taking reservations and capped the waitlist for customers sailing between June 1 and July 19, 2018. Customers booked during this period have been advised of the delay and encouraged to book at a later time. Local and regional tourism operators have been heavily promoting the route for almost a year and the delay with the new vessel has been disappointing for both industry and customers.

The project has also faced budget pressures. The original approved budget of \$55.7 million has been increased 14.9% to \$64 million.

BC Ferries is hoping to extend sailings by two weeks at the end of the 2018 season to make up for the delayed start. Bella Coola Valley Tourism would rather see an earlier start next season as it is more in line with visitor demand, however because the route relies so heavily on provincial funding, BC Ferries has indicated that the government will need to be involved in any decision about starting the season early in 2019.

Although the schedule delays have been very disappointing for Central Coast tourism operators, the new service will eventually be an exciting improvement for the Central Coast and Northern Vancouver Island, particularly since it will more directly connect travellers to Highway 20 and the Great Bear Circle Route.

Many of these communities depend on or are even built around ferry services. For many smaller communities (for example, the Central and North Coasts) reliable access to ferry service is a lifeline and non-discretionary. Others, like the Southern Sunshine Coast, have a significant percentage of residents who commute to work by ferry. As noted in the report for this review by Ken Cameron Inc., *“the reality is that many communities on the coast have been established and have grown with a dependence on access to a ferry service that should not be unreasonably altered.”*¹⁴

Unfortunately, sharply rising fares and service cuts over the last several years have severely affected the socio-economic and cultural life of many coastal communities. When former Commissioner Macatee conducted public consultations in 2012 many residents communicated profound concern about the ways in which higher fares led to a higher cost of daily living, negatively impacting tourism as well as commercial and residential investment. More recently, the FAC for the Southern Gulf Islands produced a fact sheet detailing how rising fares and service cuts have resulted in: i) job losses in island communities due to businesses reducing hours of operation or closing altogether ii) weekend and part-time residents visiting less frequently; iii) less spending by tourists; and iv) declines in local real estate markets.¹⁵

Now that traffic levels have picked up again, the concerns of ferry dependent areas are starting to centre more on how to ensure efficient and timely access to their communities. Long ferry waits and overloads can be a big problem for local economies and community life.

3.3 | SERVING DIVERSE PASSENGER NEEDS

During 2016-2017 BC Ferries transported 21 million passengers. While all of those passengers are “ferry users” according to the Act, they have very diverse purposes for seeking ferry transport. While ferry travel can be discretionary for tourists or those travelling to entertainment venues, it is essential for passengers commuting for work, for students who travel off-island to school, those travelling to medical appointments, those needing services like banking or groceries that may be unavailable in their community, and for truckers and others travelling for commercial purposes. Ferry travel can be equally as essential for those who maintain a vacation property, are part-time island residents or are travelling to visit family.

It is challenging to be more than anecdotal on this point, because neither BC Ferries nor the provincial government does systematic tracking of the purpose of ferry trips. The BC Ferries Customer Satisfaction Tracking survey showed the majority (81-88%) of passengers in 2016 used ferries for personal rather than business purposes.¹⁶ However, these categories – personal and business purposes – are too broad to be of use in determining the specific nature of passenger trips. Both BC Ferries and the provincial government would benefit from more detailed information on the purpose of trips.

Recently, the Government of Scotland conducted an assessment for each remote community to determine needs and priorities for users of their ferry service. Based on this assessment, the Scottish government adjusted specific route designs and service schedules.¹⁷ As recommended in the report by Ken Cameron Inc. (see Appendix 9.2), BC Ferries and the Ministry of Transportation and Infrastructure should work together to develop detailed origin and destination data and more detailed information about the purposes of trips by BC Ferries passengers. This kind of data is essential to coherent integrated transportation planning.

¹⁴ Future Needs and Opportunities in Coastal Transportation. Report by Ken Cameron Inc., May 2018, p. i. See Appendix (9.2)

¹⁵ Ferry Facts Fare Information Sheet Southern Gulf Islands Ferry Advisory Committee, March 2017

¹⁶ Future Needs and Opportunities in Coastal Transportation. Report by Ken Cameron Inc., May 2018, p. 15

¹⁷ Transport Scotland, Scottish Ferry Services, Ferries Plan (2013-2022), <https://www.transport.gov.scot/publication/scottish-ferry-services-ferries-plan-2013-2022/> May 20, 2018

3.4 | SUPPORTING THE ECONOMY

In the 2018 Budget Speech, Finance Minister Carole James spoke to the socio-economic importance of the coastal ferry service for British Columbia when she stated: *“BC Ferries is part of our highway system. It should work for the people who use it. Ferry costs have skyrocketed, putting Islanders at a disadvantage that is both costly and unfair. Transportation and businesses are feeling the pinch too.”*¹⁸

Many coastal community residents have long called for a detailed socio-economic study of the importance of coastal ferry services. Such a study would be important background for a new provincial vision for coastal ferry services and could be developed through collaboration between the provincial government, coastal regional districts, and coastal First Nations.¹⁹

It is projected that of the province’s nine development regions, the fastest-growing will be the two regions where BC Ferries has the most intensive operations, that is Mainland/Southwest (1.6% per year) and Vancouver Island/Coast (1.0% per year).²⁰ Ferry services are an important element in the population growth for those regions and the integration of these services into a broader sustainable multi-modal transportation network should be at the forefront of policy making.

As for the North Coast, tourism is a vital element of the economy and adequate levels of ferry service are necessary to sustain and develop local businesses. A recent report commissioned by Tourism Prince Rupert argued that BC Ferries is the critical component in creating economic development opportunities for Vancouver Island and Northern B.C. Some of the key messages in the report about Northern routes are:

- the focus on improved capacity utilization resulting in the service cuts of 2014 has damaged tourism and local businesses;
- an extended shoulder season could make the tourism sector a year-round, full-time employer; and,
- since the local population base on the North Coast is low, stimulating tourism will increase capacity utilization²¹.

¹⁸ BC Budget Speech 2018 Government of BC, page 14. http://bcbudget.gov.bc.ca/2018/speech/2018_Budget_Speech.pdf

¹⁹ In support of this review, MNP LLP was asked to provide information on the economic impact of the coastal ferry service for coastal communities and the province as a whole. They provided summary data on aspects such as tourism, real estate, goods movement, population and employment. Their report can be found at Appendix (9.4)

²⁰ Future Needs and Opportunities in Coastal Transportation. Report by Ken Cameron Inc., May 2018

²¹ Northern BC Ferry Service, Wave Point Consulting, April 23, 2018 <http://wavepoint2.wpengine.com/wp-content/uploads/2018/05/NorthCoastFerryServiceReportApril232018webcopy.pdf>

3.4.1 | MOVING GOODS

Commercial Transport

Island communities are particularly dependent on the coastal ferry service for the movement of goods. Without the ferry service, island communities would have great difficulty accessing the food, fuel, resources and consumer goods they need to survive. Island businesses also rely on the ferry service to transport their products to markets in the rest of B.C. and elsewhere.

BC Ferries transports cargo valued at approximately 7 to 8 billion dollars per year and commercial customers contributed \$89.5 million in revenue to the company in 2017. The development of the Duke Point ferry terminal in the 1990s has greatly improved access for truckers to mid-Vancouver Island from south of the Fraser while also easing demand for truck space on the Swartz Bay to Tsawwassen route.

The BC Trucking Association (BCTA) was contacted as part of this review. The BCTA reports that they are satisfied with the service provided to their members by BC Ferries and did not identify any issues or concerns.

3.4.2 | LIVESTOCK

On the other hand, those transporting livestock do have concerns with certain BC Ferries policies and the BC Dairy Association has been advocating on their behalf.

Their first concern is fares. The BC Dairy Association opposes farmers being charged commercial vehicle rates and would prefer they be charged a standard vehicle rate plus any fees for extra length. Their rationale for this relates to food security and the importance of agriculture to the general economy.

The policy of BC Ferries is to charge all longer vehicles, with the exception of recreation vehicles, a commercial vehicle rate – on a per foot basis – if they weigh over 5,500 kilograms. Vehicles under 5,500 kilograms, including those carrying livestock, are charged the standard 20 foot vehicle fare. Additional per foot fees are applied for vehicles exceeding 20 feet.

According to Dave Taylor, Chair of the BC Dairy Association this policy is applied inconsistently. Sometimes the same vehicle is charged a commercial vehicle rate and at other times a standard extra-length vehicle rate. Livestock carriers can select from either ‘commercial vehicle’ or ‘livestock vehicle’ categories when making an online reservation²². While BC Ferries offers free reservations for its customers carrying livestock, any vehicle over 5,500 kg must be reserved as a commercial vehicle. If the vehicle is less than 5,500 kilograms, it can be reserved as a livestock vehicle but in practice very few livestock vehicles are less than 5,500 kilograms. As a result, customers carrying livestock often have to reserve as commercial instead. As commercial reservations fill up quickly, especially in the summer, livestock vehicles without online reservations can face prolonged waits and travel times which can affect the welfare of the animals being transported. In cases where waiting may cause distress for animals, BC Ferries provides livestock transporters the opportunity to request priority boarding even if they do not have a reservation or have missed the reservation cut-off time, however, the BC Dairy Association feels that having to request preferential treatment on a case by case basis puts too much onus on the subjective judgement calls of ferry personnel.

In light of these concerns, BC Ferries should review their policies so as to prevent long waiting times for customers carrying livestock.

²² This is not a distinct ‘livestock fare’ but rather is an alert to BC Ferries staff that livestock will be transported which may require unique loading or unloading procedures and recognition of the free reservation.

3.4.3 | DROP-TRAILER SERVICE

In addition to on-board trucks, BC Ferries also operates a popular drop-trailer service between Metro Vancouver and Vancouver Island. This service is subject to regulation by the BC Ferries Commissioner since BC Ferries is in competition with other private companies which also provide such services. In 2017 drop-trailer service contributed \$14.1 million in revenue for BC Ferries ²³.

BC Ferries commenced its drop trailer service in 2009 with two other competitors in the market (Seaspan Coastal Intermodal Company and Van-Isle Barge Service Ltd). Passage of Bill 20 in 2010 empowered the Commissioner to assess the extent to which BC Ferries has an unfair competitive advantage in any of the services it provides, including drop-trailer service. The Commissioner is also able to specify a minimum tariff for any services deemed to have such advantages. In 2011 the Commission established a minimum tariff. In 2016, that floor price was removed as the Commissioner determined the service was priced appropriately at that time.

The table below compares the increase in commercial and drop-trailer traffic for BC Ferries over the last five years. It shows that, while drop-trailer traffic growth has slowed somewhat in recent years, it is still a very rapidly growing business segment for BC Ferries.

Table 4 | Increase in Commercial and Drop-Trailer Traffic

FISCAL YEAR	INCREASE IN COMMERCIAL TRAFFIC	INCREASE IN DROP-TRAILER TRAFFIC
2016/17	3.4%	5.6%
2015/16	2.7%	2.8%
2014/15	0.2%	10.0%
2013/14	1.7%	14.8%
2012/13	No data	34%
2011/12	No data	54%

Data source: BC Ferries Annual Reports

²³ Presentation to Nanaimo Chamber of Commerce by Mark Collins, CEO of BC Ferries. February 14, 2018

In their submission to this review BC Ferries proposed that the Coastal Ferry Act be amended to remove the ability of the BC Ferry Commission to regulate this kind of competitive service, arguing that this is a duplication of the responsibilities of the federal Competition Bureau and is inconsistent with the mandate of BC Ferries to operate in a “commercial” manner.

This proposal from BC Ferries is not recommended. The BC Ferry Commission is an economic regulator and BC Ferries enjoys many elements of a natural monopoly including significant annual funding from the provincial government for its core services. The BC Ferry Commission has regulated drop-trailer services well and flexibly, ensuring that private companies can continue to operate in this market. At the same time, drop-trailer traffic for BC Ferries is growing at a healthy pace and the company continues to generate significant revenue from drop-trailer service.

SUMMARY

Publicly funded, legislated and regulated coastal ferry service is in the public interest because it: connects and supports communities; brings families together; serves diverse passenger needs; helps build and strengthen the economy; moves goods reliably; and supports numerous economic sectors such as agriculture and tourism.

It is in the public interest for coastal ferry service to be reliable, affordable, resilient and efficient. Coastal ferry services should be planned and implemented within the context of a broader multi-modal transportation network and should help meet provincial goals such as reducing greenhouse gases and building the economy.

4

OPERATIONS



4.1 | SAFETY

BC Ferries rightly identifies safety as its top priority. In its submission to this review, the company asserts it has “...established and maintained our reputation as a safe operator with a culture that learns from previous incidents.”²⁴

After the tragic sinking of the Queen of the North in 2006, BC Ferries commissioned former Auditor General and WorkSafeBC Chair George R. Morfitt to conduct an independent comprehensive review of the company’s operational safety. The review assessed the operations of BC Ferries against safety criteria set out in Canada Shipping Act regulations and standards as well as the company’s own Safety Management System (SMS). The review concluded that, overall, BC Ferries operates a safe coastal ferry system but made 41 recommendations on how to improve safety and related administrative procedures. In particular, it was pointed out that while employees seem to be committed to operational safety, there is less commitment to the internal SMS, which creates a danger that not all safety-related issues are observed, reported and corrected in a timely manner. Upon receiving the Auditor General’s recommendations BC Ferries made a number of changes including: specifying safety of passengers and employees as a long-term strategic goal of the company and launching SailSafe - a joint initiative between BC Ferries and the BC Ferry and Marine Workers’ Union (BCFMWU).

Following the Auditor-General’s review, the 2006-2007 Annual Report of BC Ferries identified a plan to conduct a comprehensive operational safety review at least every five years. Even though significant safety improvements have been made, the intention to do a review every five years does not appear to have been followed up. Given that it is now more than a decade since the Morfitt report, it may be an appropriate time to conduct a further operational safety review.

²⁴ British Columbia Ferry Services Inc. Meeting the Interests of British Columbians and Ferry Users: Suggestions for Improving Coastal Ferry Services in British Columbia, March 21, 2018 page 12

SAILSAFE

SailSafe is an employee-focused safety initiative that aims to identify areas and methods for enhancing current safety practices.

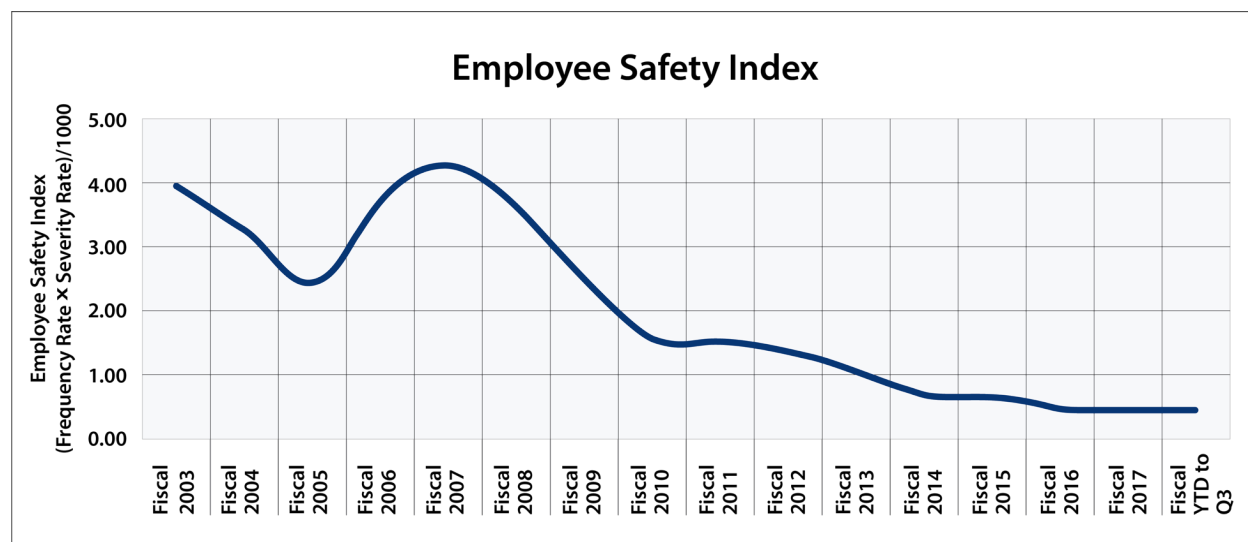
At the beginning of the initiative in 2007 the company hosted workshops with employees to hear their perspectives on procedures for ensuring safety. The initial workshops produced learning opportunities that were described under four pillars: safety of people; safety of BC Ferries' assets; safety through procedures; and safety through communication. Annual town hall meetings with employees have subsequently been held to enable them to raise any safety-related matters with management.

Safety procedure improvement is an important part of SailSafe and currently 400 employees, in addition to their normal duties, are engaged in identifying areas for improvement, developing plans and implementing new or revised safety processes²⁵. Attention to process improvement rather than simply following established safety practices plays an important part in improving the company's overall safety performance. Because it is employee focused, the initiative gradually evolved from a safety implementation program into an ongoing culture of safety integrated into all daily operations. In 2017, BC Ferries won the Global Safety Award at the DuPont Safety and Sustainability Awards in recognition of safety culture improvements brought about by the SailSafe program. By 2017, the successful safety culture change resulted in a 90% improvement in the employee safety index (compared to 2003) and an almost 60% decrease in passenger injuries.²⁶

EMPLOYEE SAFETY

The company's Employee Safety Index is shown below. The dramatic change in the index in 2006-2008 was related to the sinking of the Queen of the North. With the introduction of SailSafe in 2007 the frequency of injuries significantly dropped and continued to decrease gradually reaching a plateau in 2015.

Figure 8 | Employee Safety Index



Source: BC Ferries: BC Ferries

²⁵ BC Ferries Services Inc. Annual Report 2016-2017

²⁶ DuPont Safety and Sustainability Award 2017. Web, http://www.dupont.com/content/dam/dupont/microsites/dss/dssa/BC_FERRIES.pdf, Accessed April 25, 2018

Time loss injuries to employees decreased from 150 in fiscal 2016 to 137 in fiscal 2017. Since 2009, the number of time loss injuries experienced each year has dropped from 293 to 137 and the number of days lost due to injury has declined by almost 6,000 per year.²⁷

In 2014 BC Ferries received a Certificate of Recognition (COR) from WorkSafeBC that provides for a rebate of about \$600,000 in annual WorkSafeBC premiums for the 3 year duration of the certificate.

A COR recognizes companies that go beyond the legal requirements of the Workers Compensation Act and the Occupational Health and Safety Regulation by taking a best practices approach to health, safety and return to work programs. In 2017 BC Ferries was reassessed and the audit resulted in a 90% score in Health and Safety and 95% score in Injury Management. The company expects to see the renewal of the COR in the first quarter of fiscal 2018 and rebates from WorkSafeBC for another three years.²⁸

SAFETY AND THE UNION

SailSafe is a joint initiative of both BC Ferries and the BC Ferry and Marine Workers' Union. As such, the union has a very important say in strategic issues of operational safety. Good employer/union cooperation with regard to safety led to the creation of a combined award, dubbed the Presidents' Safety Awards, to recognize outstanding safety efforts. Since SailSafe is an employee-led initiative union representatives are very much involved with its progress but it is noteworthy that the BC Ferry and Marine Workers' Union also feels that engineers who are now exempt and therefore do not have the protection of a collective agreement sometimes feel less secure in bringing up safety issues with management than do employees protected by the union contract. Hopefully, this concern will be worked through at the SailSafe joint committee level so that additional mechanisms are put in place to make sure all employees feel secure in raising all safety related matters without fear of discipline.

²⁷ BC Ferries Annual Report 2016-2017.

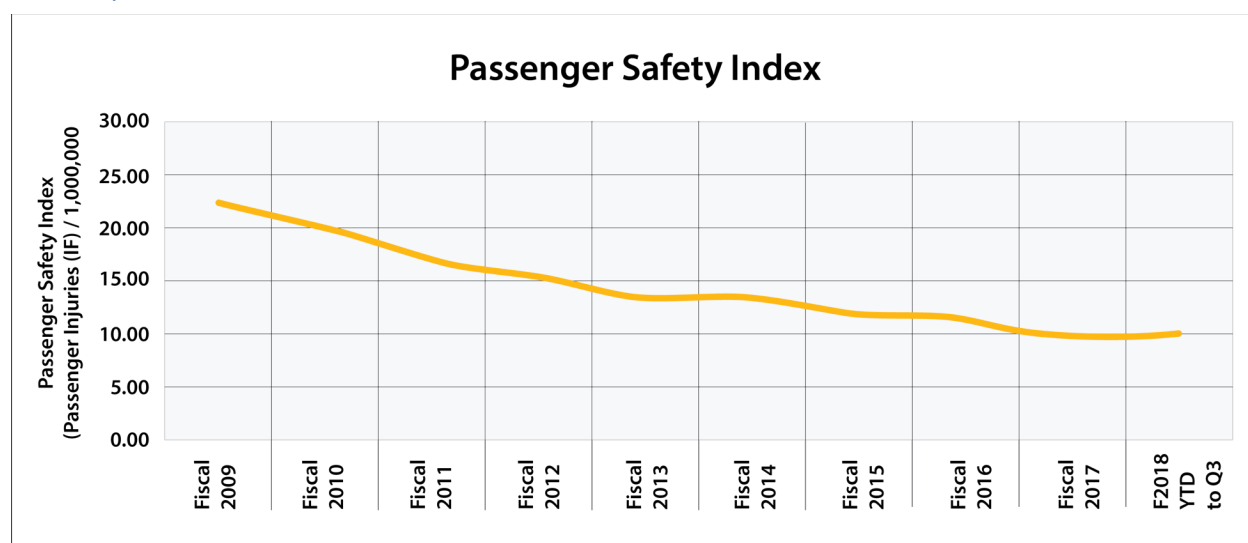
²⁸ BC Ferries Services Inc. Annual Report 2016-2017., p.30

PASSENGER SAFETY

The company's commitment to the safety of passengers includes, among other things:

1) 800 employees who, in addition to their normal duties, are trained as Occupational First Aid Attendants; 2) 34 out of 47 terminals equipped with automated external defibrillators (AEDs); 3) response to BC Ambulance Service requests. As with employee safety, the focus of on passenger safety is yielding positive results. Injuries to passengers continue to decline. In fiscal 2017, the company carried 21 million passengers and had a 12.9% decrease in passenger injuries compared to fiscal 2016. Total passenger injuries were 202, an injury rate of .00001% or 9.6 injuries per one million passengers. Since 2009, the number of injuries to passengers has been reduced by 57%.²⁹ The number of injuries per 1 million passengers for fiscal years 2009 through 2017 is shown in the graph below:

Figure 9 | Passenger Safety Index



Source: BC Ferries

While it is clear that passenger safety has improved over the last ten years (the Passenger Safety Index was created in 2009 and so the data for this indicator is only available after 2009), it would also be useful to compare this progress against outside benchmarks. Unfortunately, it is difficult to fairly compare passenger safety among various ferry operators because each company measures it differently. For example, the closest peer ferry company Washington State Ferries (WSF) measures injuries according to US national standards. For WSF an injury is when a passenger requires transportation to a medical facility whereas BC Ferries includes any injury requiring first aid in its Passenger Safety Index calculations.

MINIMUM SAFE MANNING

Administered by the Marine Personnel Division of Transport Canada, the Canada Shipping Act (2001) and its regulations determine the number of crew members that must be present on board for the duration of each BC Ferries sailing. This is referred to as "minimum safe manning." The number of crew required is based on the assumption that a vessel is full, which is not the case on many BC Ferries sailings. Because of the minimum staffing levels required by Canadian regulations, BC Ferries has higher labour costs than its closest North American counterpart – Washington State Ferries (WSF). For example, a mid-sized BC Ferries vessel requires 30

²⁹ Ibid., p. 28

crew members to operate in protected coastal waters while a Washington State ferry of the same size only needs 14 crew members to operate in similar conditions.³⁰ BC Ferries utilizes these additional trained crew members to support ancillary customer services (such as cafes and newsstands) but, in conjunction with the Canadian Ferry Association (CFA), has been urging the federal government to revise the regulations to reduce the number of staff required for each sailing.

In a discussion about this with Director-General Jane Weldon and Special Advisor Elisabeth Bertrand of Transport Canada, the federal public servants noted that a review of marine personnel regulations has been underway and that new regulations will be promulgated soon. They pointed out that Canadian regulations tend to closely track global standards set out by the International Maritime Organization whereas the U.S. tends to follow international standards less consistently. Crew levels in Canada need to be sufficient to ensure a proper response to emergencies such fire, evacuation crowd control or a person overboard and adequate hours of rest are needed on longer voyages to prevent dangerous fatigue.

For their part, BC Ferries and the CFA have been arguing for more of a “risk based” approach to staffing regulations. They assert that an important difference between Canada and the U.S. is that U.S. ferry operators have access to extensive Coast Guard resources for rescues that are less available in Canada. BC Ferries conducts many rescues at sea that would be conducted by the Coast Guard in the U.S.

While BC Ferries advocates for a reduction in staffing costs through an easing of minimum staffing regulations, Transport Canada has a crucial duty to ensure safety of everyone on marine passenger vessels. The balance which will be struck in the new regulations will need to be monitored and tested closely after implementation to make sure passenger and crew safety is not compromised.

4.2 | PUBLIC ENGAGEMENT

Because BC Ferries provides an essential transportation service, the public expects it to engage with citizens, ferry users, and communities in an authentic and systematic way. To assess the public engagement process of BC Ferries, the Stakeholder and Community Engagement Framework (Framework) recently developed by the company was examined; meetings were held with the Chairs of regional Ferry Advisory Committees and with public engagement staff at BC Ferries; and, engagement practices of other ferry operators and the broad public sector in B.C. were researched.

The BC Ferries public consultation process involves ongoing meetings with thirteen Ferry Advisory Committees, three Terminal Liaison Committees, and an Accessibility Advisory Committee; consultations with specific interests; and, project-based community engagement. Details about these committee members, meetings, and the minutes of their meetings are available on the BC Ferries website.

FERRY ADVISORY COMMITTEES

Ongoing community consultations take place through regular meetings with Ferry Advisory Committees (FACs). These committees were first established by BC Ferries in 1993 (when it was still a Crown Corporation). The FACs represent all the coastal communities served by BC Ferries except those on the major routes between Vancouver Island and the Lower Mainland. The FACs are created, funded and supported by BC Ferries and are appointed by BC Ferries in consultation with local governments, the Islands Trust and First Nations. BC Ferries’

³⁰ Malcolm G. Bird, “Dire Straits Ahead. British Columbia Ferries, 1985-2014” in Bernier L. (ed.) *Public Enterprises Today: Missions, Performance and Governance: Learning From Fifteen Cases*. 2015. P.I.E. Peter Lang. Brussels.

engagement staff say the company has never declined a community nomination to a FAC. The FACs meet twice a year to discuss operational and policy issues and planned improvements which pertain to local ferry service. Highlights of the Terms of Reference updated in 2015 include:

- FAC members should represent a variety of stakeholders and community groups (regular commuters, students, seniors, commercial users).
- FACs bring forward local community issues to BC Ferries and advise the company on long-term planning in relation to ferry services.
- FACs communicate decisions of the company to their respective communities.
- Members of the general public can present their concerns or feedback at a FAC meeting.

In addition to regular meetings, a “Significant Service Request” (SSR) mechanism has been established which enables a FAC to initiate a service request that requires a formal response from BC Ferries. SSRs are for issues such as addition or deletion of sailings, major schedule changes and requests for a permanent vessel assignment. SSR response time is typically three months and considerations for approval by BC Ferries are: cost; customer service improvement; benefits to the community; and fairness and equity for the system as a whole. It is positive that the SSR mechanism requires a formal and documented response from BC Ferries though there is no process for appeal.

Overall, FAC Chairs indicate that they have seen an improvement in the way BC Ferries conducts consultations, including project-specific engagement such as Horseshoe Bay terminal development and Southern Gulf Island schedule consultations.

Although the FACs currently appear to be working well, it is noteworthy that the 2012 Coastal Ferry Act review by the BC Ferries Commissioner recommended that:

“Ferry Advisory Committees should be appointed by the Commissioner and remain advisory. The terms of reference, structure of and appointments to the Committees should be at the discretion of the Commissioner.”³¹

This recommendation was based on the observation that advisory committees are usually appointed by or accountable to the regulator (or the government) in other jurisdictions with regulated monopoly ferry systems. As well, the work of such committees is generally governed by legislation or set out in contracts. For example, in Washington State, FACs are appointed by the county legislatures in coastal communities and their work is governed by State law.³² In Scotland, it is a condition of the contract between CalMac Ferries and Transport Scotland that a Community Board (ie. advisory council) be established.³³ In contrast, FACs in B.C. are created and appointed by BC Ferries and there is no legislation that governs their work. FACs therefore exist at the sole discretion of BC Ferries and the company itself is only partially accountable to the Commissioner for how public engagement is conducted in certain specific areas (i.e. new vessels and terminal development).

ACCESSIBILITY COMMITTEE

The BC Ferries Accessibility Committee meets twice a year to review customer feedback along with issues of vessel and terminal design. The Committee is comprised of internal BC Ferries staff as well as 10 external stakeholders representing the visually and hearing impaired, seniors, the mobility-challenged, the BC Coalition

³¹ Review of the Coastal Ferry Act, BC Ferry Commission, January 24, 2012. Recommendation 24, page 7.

³² Washington State Department of Transportation, Ferry Advisory Committees, Web, http://www.wsdot.wa.gov/ferries/CommuterUpdates/pub_meetings, Accessed April 23, 2018

³³ Scottish Government, Transport, CalMac Ferries Secures Ferry Contract, Web, <https://news.gov.scot/news/calmac-secures-ferry-contract>, Accessed April 23, 2018

of People with Disabilities, and the Inter-Municipal Advisory Committee on Disability Issues. Advice from the Committee has resulted in several infrastructure and operational improvements, including:

- Hearing induction loop technology on vessels;
- Changes to loading processes at terminals; and
- Website messaging regarding accessibility.

STAKEHOLDER AND COMMUNITY ENGAGEMENT FRAMEWORK:

BC Ferries changed its approach to public engagement following very difficult consultations with the communities of Denman and Hornby Islands in 2012-2013 about a proposed cable ferry. BC Ferries staff now acknowledge that those consultations did not constitute meaningful public engagement and contributed to an adversarial relationship with impacted communities. The company has attempted to learn from that experience. This shift is seen also in Annual Reports where the Customer Service section did not even mention public consultation prior to 2012-2013.

Subsequent to the cable ferry experience, BC Ferries hired experts in public consultation and with their help developed a new Stakeholder and Community Engagement Framework in an effort to improve, systematize and make consistent its process across all engagement projects. The document speaks of solidifying “engagement as a fundamental part of our [BCF] organizational culture” (p. 2.8).³⁴ The framework applies core values and ethics of engagement developed by the International Association for Public Participation.

According to the Framework, the company will:

- engage early and often with stakeholders where they live;
- ask stakeholders how they want to be engaged;
- provide relevant information so participation can be effective;
- work to overcome barriers to participation; and,
- commit to listen and understand.

As the company attempts to implement a cultural shift with regard to public engagement, regular workshops on engagement are now conducted for senior staff in all departments. As a result of these and other changes, BC Ferries staff believe they are seeing increasing levels of trust from coastal communities.

Even before the Framework was formally adopted in 2017, the company started to change its approach to engagement. For example, a Southern Gulf Island (SGI) Schedule Consultation was conducted in 2015-2016 to design a schedule for the new Salish class vessels. BC Ferries conducted a needs assessment, held open houses to explore schedule options, and eventually modified the schedule based on community feedback. After that, the company published public feedback, including raw data, and listed specific ways in which community feedback was incorporated into the new schedule. In contrast, reports from a consultation on the Newest Class of Vessels do not reflect the same level of detail. BC Ferries staff defend the difference by stating that the new class of vessels consultation was much more limited in scope and quite technical. Also, the SGI schedule consultation was high profile and BC Ferries involved a consulting firm to conduct consultation activities. Overall, the Framework adopted in 2017, and the company’s commitment to its principles across departments, will likely make future engagement practices more consistent across different projects.

³⁴ Stakeholder and Community Engagement Framework. BC Ferries Services Inc., 2017

In addition to its general Framework, BC Ferries is developing a new framework for engaging with First Nations, which acknowledges the unique rights and perspectives of indigenous communities. The company is attempting to learn from Metro Vancouver and other public organizations that have developed particular processes for engagement with First Nations and is planning to hire a full time engagement manager experienced in relationship building with First Nations.

BROADER ENGAGEMENT – RECALLING THE COASTAL COUNCIL

From 1998 to 2003 (in the latter years of BC Ferries as a Crown Corporation) it received advice from an independent stakeholder group called the Coastal Council. The Council was made up of fourteen representatives from: coastal chambers of commerce; coastal tourism associations; the BC Trucking Association; the Islands Trust; the BC Ferry and Marine Workers' Union; and local community committees that were predecessors of the current Ferry Advisory Committees. Provincial government representatives, the BC Ferries Board of Directors and the BC Ferries management team attended meetings but did not take part in decision processes.

Unlike the current FACs, the Coastal Council was independent of BC Ferries. It advised both the provincial government and BC Ferries on major issues pertaining to coastal ferry service and coastal transportation infrastructure. Group meetings were supported by a facilitator and strove to operate by consensus. The Coastal Council was mandated to make specific recommendations on policy matters like tariff and finance models, service levels and the appropriate level of provincial government financial support. The Council helped encourage strong communication amongst the various stakeholders of the ferry system and wrote its own original reports. Its advice did influence tariff and financial decisions of both the Province and BC Ferries.³⁵

A big difference between the Coastal Council and current FACs is that the Council was providing advice on the entire coastal ferry system whereas each regional FAC advises on local regional matters. The Chairs of all local FACs do meet together from time to time to provide system-wide advice but not in the structured and regular manner of the Coastal Council.

There may be merit in supplementing local FACs with an additional system-wide advisory group based on the Coastal Council model. It would be particularly useful to hear regular advice from economic interests such as chambers of commerce, tourism associations and the trucking industry. If such a group were to be established, it would be crucial to have good representation from coastal First Nations as well.

Recommendation:

The provincial government should establish a broadly representative independent advisory council to provide system-wide advice on coastal ferry services and related transportation planning issues. The advisory council should include representation from coastal businesses, labour, municipalities, and First Nations. The advisory council should be independent of both the provincial government and BC Ferries. It should include some representation of communities served by unregulated ferry routes as well as Ferry Advisory Committees.

³⁵ Helpful background on the Coastal Council was provided to this review by former Coastal Council Chair Steve Wohlleben. For documentation of Coastal Council work see: <http://cc.traxdev.com/index.htm>

4.3 | CUSTOMER SATISFACTION AND CUSTOMER COMPLAINTS

Tracking of customer satisfaction and a process for customer complaints are alluded to in both the Coastal Ferry Act and the Coastal Ferry Services Contract. Section 66 1 (a) (ii) of the Act requires ferry operators to provide data to the Commissioner on the results of quality surveys while Section 45 .2 requires ferry operators to administer a customer complaint process which is monitored and regulated by the Commissioner. Article 6 of the contract stipulates what customer satisfaction tracking surveys must contain and how the results must be reported.

BC Ferries has several channels for receiving customer feedback, including Ferry Advisory Committees, Terminal Liaison Committees and project-specific consultations, but the Customer Satisfaction Tracking Survey (CST) and Customer Complaint Process are the two regulated ways that BC Ferries must consider and respond to customer concerns.

CUSTOMER SATISFACTION TRACKING SURVEY

The current tracking survey methodology has not changed significantly since the tracking survey began in 2003. As well, the same contractor (Mustel Group) has been engaged to administer the survey since its inception 15 years ago.

For a defined selection of routes, the survey involves:

- **Intercepts** – An attempt is made to intercept every fifth passenger in all areas of the vessel.
- **Phases** – Interviews are conducted in person with questions that include frequency of travel, purpose of trip, and area of residence, among others, with a second phase that entails a self-administered survey questionnaire completed following the trip (either paper or online).
- **Wave Repetition** – The process is repeated over three waves throughout the year (i.e., June, August, and November).
- **Compilation and Reporting** – Data is compiled and presented in an annual report no later than three months after the fiscal year-end.

In 2017, the BC Ferries Commissioner engaged MNP to review the CST survey.³⁶ This review found that the survey was not fully representative of the population of ferry users and suggested that the survey results should be taken as only one source of customer satisfaction measurement amongst others. The Commissioner then issued Order 18-01, requiring BC Ferries to:

- Conduct CST Surveys on at least five additional routes in 2018 and any remaining routes in 2019.
- Obtain the Commissioner's approval for the intended methodology.
- Advise the Commissioner regarding re-procurement before proceeding with a 2019 survey.
- Provide evidence that commercial users are being surveyed.
- Provide the Commissioner with a plan for addressing other recommendations made by MNP by June 2019.
- Provide the Commissioner with a plan for communicating actions taken in response to the recommendations of MNP.

³⁶ http://www.bcferrycommission.ca/wp-content/uploads/2011/06/MNP_CSTProgramReviewReport2017.pdf

It is surprising that a Commissioner's formal Order was required to compel such changes. For example, it is basic good management practice to change vendors from time to time, in this case the contractor administering the survey. As well, expanding the number of routes that are surveyed will give a much better sense of actual customer satisfaction, particularly on minor and shorter routes, so this too should not have required an Order by the regulator.

Since the Order was released, BC Ferries has added five additional routes to the 2018 CST survey, has committed to publishing all CST research waves online and to engaging a third-party consultant in the fall of 2018 to examine the CST Survey methodology. Further, BC Ferries has committed to re-procure its survey contract before proceeding with the 2019 CST Survey.

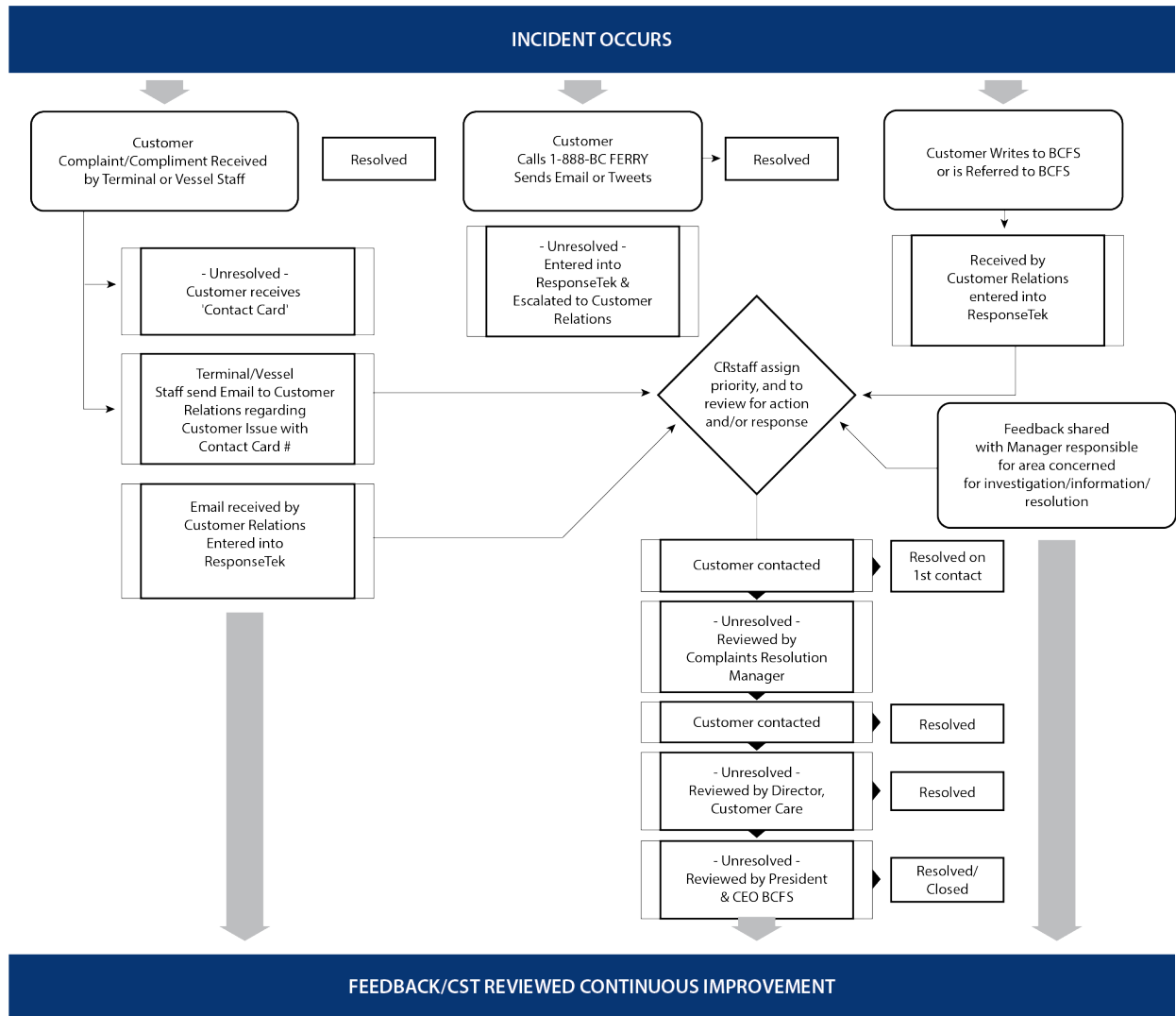
CUSTOMER COMPLAINT PROCESS

As part of this operational review, MNP LLP was asked to report on the BC Ferries customer complaint process. The MNP report is in Appendix 9.4

Unlike the satisfaction survey, customer complaints are self-initiated. They are, by definition, somewhat negative. Of course, not all feedback received is a complaint. Ferry users can provide complaints, or other feedback, on an ongoing basis through various means such as telephone, email, an online feedback form and social media. Feedback is received and responded to by Customer Service Sales Representatives (CSSRs) in the BC Ferries Customer Service Centre and tracked in a system called ResponseTek. ResponseTek is able to classify feedback as positive or negative as well as identify themes and generate various reports. BC Ferries reports that it receives approximately 500,000 phone calls and 15,000 emails annually.

ResponseTek has over 100 metrics to track customer complaints and feedback based on research into best practices. More details on the metrics and results can be found in the attached MNP report.

The graphic below was prepared by MNP LLP to summarize the complaint handling process.



Regular tracking of complaints is done through:

- weekly notifications to managers;
- weekly reviews of top customer issues by the Director of Customer Care in meetings with the Operations Team;
- quarterly and annual reports at Divisional meetings; and,
- additional consideration, by the Vice President responsible of any repetitive customer complaints.

BC Ferries provides a quarterly Feedback and Engagement Report to the Commissioner with a summary of the number of travellers and complaints received, the average time to respond and, the top five types of comments received with root causes, lessons learned and actions taken. As of the third quarter of fiscal 2018 the report breaks down customer complaint statistics by route and with a regional summary.

ACCOUNTABILITY AND OUTCOMES

The 2017 Performance Review for the BC Ferries Commissioner notes that the Coastal Ferry Services Contract does not specify any accountability measures in areas of declining performance. One of the recommendations was that the Commissioner consider how to engage BC Ferries in an outcome-based and accountability-focused customer satisfaction tracking process.

For this review, MNP analyzed how CST survey results inform decisions of the BC Ferries Executive. MNP found that while the CST survey collects a wide range of data on customer satisfaction with a particular journey, it is unclear how this feedback is analyzed and considered by the company's management when making decisions.

Prior to 2016, quarterly Feedback and Engagement Reports on customer complaints were posted on the BC Ferries website. Since 2016 these reports have only been posted on the Commissioner's website which is not as widely known as the BC Ferries site. As MNP suggests, the Feedback and Engagement Reports should once again be posted on the BC Ferries website, as well as the Commissioner's site. The Feedback and Engagement Reports should also contain year over year comparisons.

BC Ferries is accountable only to the Commissioner with regard to both customer complaints and customer satisfaction tracking. In other jurisdictions, like the UK, independent consumer advocacy groups support regulators of natural monopolies. In the UK rail sector, a body called Passenger Focus advocates for both rail and bus passengers. Passenger Focus is funded by the Department for Transport but functions independently of both the government and the regulator. One of the current objectives of Passenger Focus is to promote good practice in complaint handling. If independent consumer advocates were established to support the coastal ferry regulatory process (as recommended in section 6.3) one of their responsibilities could be to advise on complaint handling and follow-up.

It would also be helpful if the Commissioner provided some commentary or direction on the responses by BC Ferries to the contents of the Feedback and Engagement Reports.

INDEPENDENT APPEAL PROCESS

Many BC Ferries customers already direct their complaints to the Minister or Ministry of Transportation and Infrastructure while others complain to the Commissioner. For example, numerous complaints were sent to the Minister regarding the response of BC Ferries to the Queen of Cumberland being taken out of service in May 2018, including lengthy call wait times for those trying to get through to BC Ferries by phone. Usually those who approach the Commissioner or ministry with their concerns have already contacted BC Ferries and have gone through the complaint escalation process yet remain dissatisfied. However, because of the independent governance model, neither the ministry nor the Commissioner have an ability to resolve the complaints. The replies from the ministry usually acknowledge the concerns raised but point out that BC Ferries is an independent company.

On May 18 the Commissioner issued Order 18-02, directing BC Ferries to conduct a thorough investigation of the Queen of Cumberland incident and to report back by July 18. The Order includes a requirement that BC Ferries explain whether the public was adequately informed about reduced service and, if not, what new communication protocols will be put in place for similar events in future. Once the report is complete, the Commissioner will publish it and invite public comments. The Commissioner may issue additional orders once he has had an opportunity to consider the report and public comments.³⁷ This is a good example of an

³⁷ Order 18-02, In the Matter of Application to Temporarily Reduce Service on Routes 5 and 9, BC Ferry Commission, <http://www.bcferrycommission.ca/wp-content/uploads/2018/05/FC-Order-18-02.pdf>

outcome-oriented customer complaint response. In this case the Commissioner took the initiative to order BC Ferries to provide an outcome-oriented report.

British Columbians who believe they have been treated unfairly by a government agency or other public body have the option of registering a complaint with the Ombudsperson of B.C. However, because BC Ferries is an independent regulated company and not a public agency, Section 75 of the Coastal Ferry Act is explicit that the Ombudsperson Act does not apply to BC Ferries or the B.C. Ferry Authority.

Bearing in mind the independent governance model an alternative would be to amend Section 45.2 of the Coastal Ferry Act to create an independent customer complaint appeal mechanism overseen by the BC Ferries Commissioner. Some form of independent appeal process would encourage outcome-based resolution of customer complaints and thereby improve accountability of the coastal ferry system.

4.4 | HUMAN RESOURCES

One of the overall strategic goals of BC Ferries is “to foster a productive, motivated and engaged workforce”.³⁸ The company compiles all standard Human Resource (HR) metrics as part of their workforce planning and the staff of BC Ferries made these metrics available for purposes of the review. BC Ferries HR metrics were compared to the 2016 Canadian HR metrics³⁹ compiled by The Conference Board of Canada.

WORKING CONDITIONS

BC Ferries is a unionised employer. The company offers both union and non-union employees competitive wages; three weeks of paid vacation; progressive work-life options (i.e. flexible work hours, 35-hour work week, optional shortened work week, compressed work week and earned days off program); and benefits (including defined-benefit pension, 100 per cent health premium coverage family ferry pass and health and wellness initiatives). BC Ferries also offers the opportunity to transfer amongst their various locations province-wide.

TRAINING PROGRAMS

BC Ferries has a number of training programs in areas such as safety (SailSafe), environmental awareness (SeaForward), and sustainability. Its Standardized Education and Assessment (SEA) program is internationally recognized for customized training specific to every job, vessel, route and terminal. Recently, BC Ferries also invested in a SailSafe simulation lab at Camosun College to be used by skilled trades’ trainees. This lab provides the experience of navigating in a range of conditions while interacting with other vessels operated by classmates.

³⁸ BC Ferries Annual Report 2016-2017, p. 5.

³⁹ Workforce Planning Practices in Canada: Human Resources Trends and Metrics, 4th Ed. The Conference Board of Canada, 2017. Web, Access granted by request.

In 2016 the company was given Lloyd's List Safety Training award for outstanding commitment in training employees ashore and at sea. In 2017, BC Ferries provided over 24,000 personal training days, which was an increase of 19% over fiscal 2016.⁴⁰ This included operational, SEA and simulator training. BC Ferries also has a program to assist employees to plan and track career progression and succession. To support its new LNG powered vessels, the company provided 5,400 days of specific LNG training in 2017 for deck and engineering crews.

TURNOVER

BC Ferries has a low turnover rate. Turnover of regular employees is generally at or below 3%, which is lower than the average turnover rates in both public (4.8% voluntary and 2.3% involuntary) and private (8.8% voluntary and 6.8% involuntary) sectors in Canada.⁴¹

DEMOGRAPHICS

While the turnover rate is low, the retirement age and average age of workers at BC Ferries are both slightly higher in some job functions than the general pattern in Canada. For example, in 2016 the average retirement age for public sector organizations in Canada was 61 years.⁴² While this is comparable at BC Ferries for most job functions, the average retirement age for engineering staff is much higher at 66 years.

The median age of the general workforce in the 2016 sample of The Conference Board of Canada is 44 years. In comparison, the average age of BC Ferries employees (excluding seasonal workers) is 46 years. Casual BC Ferries workers tend to be much younger (average age 36) than excluded (48 years) and regular (49 years) employees. The aging of the BC Ferries workforce is not homogenous across all employee groups, however, as it is most pronounced among excluded employees (from 41.2 years in 2008 to 48 years in 2018 as an average age). In contrast, both seasonal and casual employee groups are actually getting younger: seasonal from 29.2 years in 2008 to 24.7 years in 2018; and casual from 41.4 in 2008 to 36 years in 2018.

In general, recruitment of young people into permanent positions in the marine industry has been identified as a problem not just for BC Ferries but for Canada as a whole.⁴³ Executive managers at BC Ferries are concerned about this issue and have indicated they are taking steps at job fairs and with post-secondary institutions to encourage new and younger workers to consider marine transport occupations. When developing its training and workforce development strategies, the provincial government should take note of this challenge, since marine transport work is creative and interesting and should be a career choice more young B.C. workers consider.

⁴⁰ BC Ferries Annual Report 2016-2017, p. 31.

⁴¹ Workforce Planning Practices in Canada: Human Resources Trends and Metrics, 4th Ed. The Conference Board of Canada, 2017. Web, Access granted by request, p. 49.

⁴² Ibid, p. 51.

⁴³ Marine Careers Opportunities in the Marine Transportation and Offshore Petroleum Industries in Eastern Canada, Government of Newfoundland and Labrador, p. 9.

In addition to younger workers, BC Ferries should consider increased hiring of women and indigenous people. Approximately 65% of the BC Ferries workforce is male and 35% female. This gender imbalance is concerning, but similar to gender ratios for the marine industry across Canada.⁴⁴ As for indigenous people, BC Ferries does not collect data on the number of its workers who are of indigenous descent. Especially given that BC Ferries serves many coastal communities with significant First Nations and indigenous populations, and considering that indigenous peoples are amongst the fastest growing in the province, concentrated efforts to recruit more indigenous employees would not only make the BC Ferries workforce more diverse and representative but would presumably assist with the aging workforce problem as well.

Recommendation:

It is recommended that the company develop a more robust employment equity strategy focused particularly on recruitment of women and indigenous people. As a first step, the company should track data on the number of BC Ferries workers who are of indigenous descent and should develop similar information on the numbers of women, younger workers and other underrepresented groups in its workforce.

LABOUR/MANAGEMENT RELATIONS

A significant majority of BC Ferries employees (85%) are members of the BC Ferry and Marine Workers Union (BCFMWU). The total employee headcount for F17 was 4,797 employees. Of those, the bargaining unit consisted of 2,789 regular full time employees (58%), 986 casual employees (21%), and 294 seasonal employees (6%).

While BC Ferries had a challenging and often fractious labour relations history when it was a Crown Corporation and in its first year as an independent company, there has not been a strike or lockout since 2003 (15 years). This was not achieved easily or without controversy.

A very difficult strike in 2003 was resolved after Provincial back-to-work legislation and the appointment of well-known arbitrator Vince Ready as a Special Mediator. Ready's binding but interim mediation/arbitration award in 2004 included a 7-year contract term with expiry in 2010.⁴⁵ Ready then issued a final award in 2007⁴⁶ which further extended the contract term to 2012, or nine years in total. In 2010, Ready issued a further arbitration award⁴⁷ concerning the contentious issue of exclusions from the bargaining unit. The consequence of that ruling was exclusion from the union of many engineering positions, a result which the union continues to find problematic in terms of safety, arguing that when all engineers have union protection they are more likely to feel secure in making decisions that put safety first. Of course, the employer takes a different view.

The current collective agreement was concluded voluntarily by the parties in 2015 without a work stoppage or binding arbitration. That current agreement is set to expire October 31, 2020.⁴⁸ Clear dispute resolution processes in the contract, including expedited arbitration provisions, appear to have assisted the parties to resolve disputes promptly and to thereby create a more stable workplace.

As part of this review, a meeting was held with members of the union executive. It was noteworthy that the union did not choose to discuss their wages or working conditions but rather focused on issues of safety and the need for improved consultation with front line workers regarding new vessels and other operational concerns. The union executive is concerned about safety and quality of service so it would be beneficial for the company

⁴⁴ Government of Canada invests in marine industry training for women and Indigenous communities, Web, https://www.canada.ca/en/transport-canada/news/2018/02/government_of_canadainvestsinmarinettrainingforwomeninuitandindig.html, Accessed May 2, 2018

⁴⁵ http://www.bcferrries.com/files/PDFs/Ready_Decision_Complete.pdf

⁴⁶ <http://www3.telus.net/Tsawwassen/Ready%20Award.htm>

⁴⁷ <http://www.theprovince.com/pdf/ferriesruling.pdf>

⁴⁸ http://www.bcfmwu.com/sites/default/files/bcfmwu_bcferrries_ca_nov_1_2015_to_oct_31_2020.pdf

to take additional steps to involve and consult the employees who work in the ferry system each day, as they have well informed views about design, maintenance and the operation of the system.

EMPLOYEE SATISFACTION

The company regularly measures employee satisfaction but the questions in the employee satisfaction survey tend to be quite general.

4.5 | EXECUTIVE COMPENSATION

BACKGROUND

Financial compensation for the senior executives of BC Ferries has been a hot public topic for many years. David Hahn, the first CEO of the independent company, was dubbed the “million dollar man” for a compensation package worth more than a million dollars per year including bonuses. This was widely seen to be excessive.

In response to public concerns, amendments were made to the Coastal Ferry Act in 2010 (Bill 20) that defines executive compensation requirements for BC Ferries. The Act stipulates that BC Ferries must develop an executive compensation plan methodology⁴⁹ which compares to other similar organizations in Canada and must not provide remuneration to its executives that is greater than that provided at comparable organizations in the B.C. provincial public sector. Implementation of those amendments helped to reduce executive compensation levels at BC Ferries by about 50 per cent compared to the early days of the independent company.

In 2012, the Province introduced a new Crown Corporation Executive Compensation Policy applicable to all Crown agencies subject to the Public Sector Employers Act. The policy eliminated perquisites and allowances, and replaced bonuses with salary holdbacks. In late 2013 (after representations from former Transportation and Infrastructure Minister Todd Stone and shortly before nearly \$20 million in service cuts were announced in early 2014) the Board of BC Ferries voluntarily agreed to also adopt the principles of the Crown Corporation Executive Compensation Policy (2012).

As a result of that decision, the company undertook to replace its bonus plan with a salary “hold back” incentive pay system tied to achievement of financial and business results⁵⁰, considered limiting base salary levels for future executives to generally not more than 85% of the amount paid to the CEO and undertook that expense reimbursements, allowances and perquisites would be consistent with the Crown Corporation policy. As well, once the holdback plan was complete, salaries for affected executives and managers were frozen until 2016.

The B.C. Ferry Authority approved a new Executive Compensation Plan on October 16, 2016 but it has not yet been formally approved. This is because the Minister of Finance (as holder of the Province’s preferred shares) must approve any changes to the Articles of the company. Former Minister Mike de Jong did not approve them prior to the 2017 election and current Minister Carole James has also deferred a decision pending this review.

The 2016 Executive Compensation Plan for BC Ferries is based upon benchmarking comparisons developed by human resources consulting firm Mercer Canada. For Canadian comparators, the Plan lists 221 private and public

⁴⁹ The methodology must result in remuneration for each executive of BC Ferries that is consistent with the remuneration provided: (i) “...in organizations in Canada that are of a similar size and scope to BCFS, perform similar services or hold similar positions to that executive of BCFS, and (ii) “...not greater than the remuneration that provincial public sector employers in British Columbia provide to individuals who, in those organizations, perform similar services or hold similar positions to that executive of BCFS...” Coastal Ferry Act section 21.4(2)(a)

⁵⁰ See BC Ferries news release of November 13, 2013: <https://www.bcferries.com/bcferries/faces/attachments?id=832517>

organizations across the country. Comparator organizations listed are as diverse as Bombardier, Imperial Tobacco, the CBC and the City of Calgary, but none of the Canadian comparators is a ferry company. Canadian ferry companies like the east coast's Marine Atlantic and Québec's Traversiers (STQ) are not compared to. As for the B.C. public sector, the chosen comparators are BC Hydro, ICBC, the BC Pavilion Corporation, the BC Securities Commission and the University of British Columbia. No comparison is made to Deputy Ministers⁵¹ or other senior managers in the direct B.C. Public Service.

The BC Ferries Executive Compensation Plan sets out the "upper limits" of compensation for the defined Executive Officers of the company. The plan says: "Executive Officer" means an individual who is the CEO or an Executive Vice-President of British Columbia Ferry Services..."⁵² The plan therefore does not address all Vice-Presidents, but only those deemed to be Executive Vice-Presidents.

Table 5 | Upper Limits of Remuneration – 2016 and 2011 BC Ferries Executive Compensation Plans⁵³

POSITION	YEAR		CHANGE	
	2016	2011	DOLLARS	%
CHIEF EXECUTIVE OFFICER (CEO)	\$495,000	\$563,000	\$68,000 decrease	12.07% decrease
CHIEF OPERATING OFFICER (COO)	\$489,000	\$482,000	\$7,000 increase	1.45% increase
CHIEF FINANCIAL OFFICER (CFO)	\$482,000	\$458,000	\$24,000 increase	5.24% increase

⁵¹ The most recent disclosure of compensation paid to B.C. Deputy Ministers is for 2016/2017. In that year, the highest paid Deputy Minister was the D.M. to the Premier with total compensation of \$354,749 and a salary of \$294,621.
<https://www.publicsectorcompensation.gov.bc.ca/executive-compensation-disclosures/2016-2017/90607/BC-Public-Service-Agency-ECD-2017.pdf>

⁵² Executive Compensation Plan British Columbia Ferry Services Inc. (September 2016)

⁵³ Executive Compensation Plan British Columbia Ferry Services Inc. (September 2016) and Executive Compensation Plan British Columbia Ferry Services Inc. (October 2011)

Table 6 | Annual cash compensation for the full nine positions on the Executive Committee of BC Ferries:⁵⁴

CEO (Mark Collins)	\$425,000
Executive Vice-President of Human Resources and Corporate Development (Glen Schwartz)	\$424,000*
Vice-President and Chief Operating Officer (Corinne Storey)	\$360,000
Vice-President and Chief Financial Officer (Alana Gallagher)	\$353,000
Vice-President, Strategic Planning and Community Engagement (Mark Wilson)	\$300,000
Vice-President, Business Development and Innovation (Captain Jamie Marshall)	\$300,000
Vice-President, Customer Experience (Janet Carson)	\$272,000
Vice-President and Corporate Secretary (Cynthia Lukaitis)	\$272,000
Vice-President and Chief Information Officer (Erwin Martinez)	\$272,000
Total Executive salary cost per year	\$2.98 million

*(*Mr. Schwartz was an Executive VP prior to the 2010 amendments. His higher salary levels are therefore 'grandparented')*

Total compensation for former CEO Mike Corrigan in fiscal 2017 was \$563,000 and for former Chief Financial Officer Dennis Dodo was \$438,231.⁵⁵

PENSIONABLE SALARY AFTER RETIREMENT

The CEO's contract provides for continued employment as a consultant for at least a year after retirement to provide transitional advice to the incoming CEO. In the case of recently retired CEO Michael Corrigan the term of the post-retirement arrangement is 19 months.

Information on this arrangement is not included in the regular executive compensation disclosure by BC Ferries, but can be found instead on the SEDAR web site of the Canadian Security Administrators.⁵⁶ The fiscal 2017 SEDAR filing includes information on "other compensation" for the CEO and states:

⁵⁴ Source: Letter from Donald Hayes, Chair of the Board of British Columbia Ferry Services Inc. to Honourable Claire Trevena, Minister of Transportation and Infrastructure. September 21, 2017

⁵⁵ British Columbia Ferry Services Inc. Executive Compensation Disclosure for the fiscal year ended March 31, 2017 (June 30, 2017) https://www.bcferries.com/files/AboutBCF/compensation_disclosure/Coastal_Ferry_Act_2017_Executive_Compensation_Disclosure.pdf

"Mr. Corrigan stepped down from the position of President and CEO on March 31, 2017 and continues his employment with the company as a consultant to provide advice to the new President and CEO and the Board for a term ending October 31, 2018. During this period, he will receive an annual salary of \$427,000, benefits (excluding vacations), and pension contributions.⁵⁷"

It is noteworthy that the entire post-retirement salary is pensionable.

BC Ferries was asked if there are any defined work plans or specific deliverables in the consulting contract with the past CEO. The company indicated there are not and explained:

"There is no specified scope of work for this engagement because this is not a project based consultancy agreement. It is a retainer, in effect, to ensure Mr. Corrigan's experience and knowledge are made available to BC Ferries for properly managed business continuity. Mr. Corrigan responds to issues Mr. Collins and/or other Executive members place before him and he concludes his involvements when the requesting Executive member has the information he/she requires."

BC Ferries indicates that Mr. Corrigan has been called on by executive members numerous times regarding a range of issues, has always responded when requested to do so, and has attended a number of face to face meetings.

ANALYSIS

Because the Board of BC Ferries voluntarily agreed in 2012 to adopt the principles of the provincial Crown Corporation Executive Compensation Policy, the Secretariat of the Public Sector Employer's Council (PSEC) was asked for information and advice about executive compensation at BC Ferries and how such compensation is managed in the B.C. public sector. Assistant Deputy Minister Chris Rathbone and Director of Labour Relations Lindsay Coburn were both very helpful in this regard.

Amongst other points, Mr. Rathbone and Ms. Coburn noted:

- **Compression:** BC Ferries' proposed 2016 article revision leaves very little difference in compensation between the CEO and Chief Operating Officer (i.e. the difference between the upper compensation limits for the two positions is only 1.2%). This compression would not typically be endorsed by the PSEC Secretariat. The 2012 Crown policy requires Crown agencies to maintain a 15% differential between the CEO and the next highest paid executive.⁵⁸
- **Vehicle allowance:** There are caps on vehicle allowances in the B.C. public sector (i.e. \$580 per month for vehicle allowances or a lease of up to \$625 per month)
- **Comparators:** Appropriate benchmarking for excluded and executive employees in the B.C. public sector must be based on the following primary comparators, in this order: 1) BC Public Sector

⁵⁶ The Coastal Ferry Act does not require reporting of this provision but securities rules do. Because BC Ferries borrows on private markets, more detailed disclosure of direct and indirect executive compensation is required for potential investors.

⁵⁷ British Columbia Ferry Services Inc. Statement of Executive Compensation for the fiscal year ended March 31, 2017 (Form 51-102F6V) posted June 28, 2017 <http://www.sedar.com>

⁵⁸ The BC public sector policy states: "Salary Compression - Where executives reporting to a CEO earn more than 85% of the CEO's total compensation, a plan to eliminate the compression must be developed in consultation with the PSEC Secretariat for approval by the Minister responsible for the Act. This may entail red-circling existing compensation levels and addressing the compression through attrition." Source: Guide to B.C. Public Sector Compensation and Expense Policies, March 2017, page 26. <https://www2.gov.bc.ca/assets/gov/british-columbians-our-governments/services-policies-for-government/public-sector-management/psec/public-sector-compensation-expense-policies-guidelines.pdf>

Organizations – comparable positions in the B.C. Public Service, Crown corporations, health sector, K-12 education, community social services, regional governments, municipalities and various public bodies; 2) Other provincial jurisdictions – where relevant, excluding Territories. 3) Private sector – to be used only in cases of talent in high demand with significant, demonstrable recruitment pressure from the private sector.⁵⁹ As noted earlier, BC Ferries has chosen not to use B.C. Deputy Ministers as one of its public sector comparators.

- **Post-retirement contract:** PSEC Secretariat advises that while there is no formal policy on post-retirement contracts, compensation plans in the B.C. public sector are approved for one CEO. If required for transitional purposes, a former CEO may be hired as a contractor for a limited period of time to assist with transition. While there is no maximum in policy on the length of the transition, employers will work with the PSEC Secretariat and the Ministry to report on what is reasonable. It is not the norm to keep a former CEO on contract for transition or other purposes, but it does happen periodically.
- **Disclosure:** Organizations subject to the Public Sector Employers Act (which includes Crown Corporations and universities) are statutorily required to disclose compensation of the next four highest ranking executives reporting to the CEO who have decision-making authority and who earn \$125,000 or more per year. Anything that is included in total compensation and anything that was paid to the executive must be disclosed. This includes supplementary pension benefits, vehicle allowances, employee holdbacks, vacation payouts, severance and health benefits. Organizations must provide a clear, concise and understandable description of the links between pay and performance for senior executives in key decision-making positions.

BC Ferries is a large and complex organization with important public responsibilities. It is not a Crown corporation, but fare payers and taxpayers have high expectations with regard to compensation practices of the company and expect both prudence and transparency. For its part, the Board of BC Ferries is interested in recruiting a qualified Executive of the highest caliber in order to meet performance targets in a challenging environment.

In its submission to this review, BC Ferries raised concerns about its ability to recruit executives from comparable sectors:

“There are no marine or shipping companies in the provincial public sector group. As a result, the Coastal Ferry Act makes it impossible for BC Ferries to set compensation with reference to marine and shipping companies. Marine and shipping companies are the sector from which BC Ferries needs to attract personnel and to which it loses talent... The Province should amend the Coastal Ferry Act to allow Canadian marine and shipping companies to be included with the provincial public sector employers as a single comparator group for executive compensation.”⁶⁰

⁵⁹ Ibid. pages 9-10

⁶⁰ British Columbia Ferry Services Inc. Suggestions for Improving Coastal Ferry Services in British Columbia. March 21, 2018. Page 27

The BC Ferries submission also recommends elimination of the requirement (in Section 21.4(3) of the Act) to specify remuneration levels in the Articles of the company. If this was done, the Province as preferred shareholder would still have to approve other changes to the Articles but would not have to sign off on each revision to the Executive Compensation Plan.

The special post-retirement consulting contract for the CEO is reminiscent of a severance arrangement, yet it is not severance as it is provided after the CEO retires voluntarily. It does not meet the test of prudence and transparency, especially as the salary for the post-retirement period is fully pensionable, there are no defined work plans or deliverables in the contract, and the arrangement is not reported in either the Executive Compensation Plan or the Executive Compensation Disclosure report.

Recommendations:

- 1| The Board of BC Ferries should consider steps (such as red-circling) to restore a target differential of 15% between the CEO and the next highest paid Executive Vice-President. When it next approves an Executive Compensation Plan, the B.C. Ferry Authority should ensure appropriate compression between the CEO and the Vice Presidents reporting to the CEO.
- 2| The next Executive Compensation Plan of the B.C. Ferry Authority should include information on all Vice Presidents and not only those deemed to be Executive Vice Presidents.
- 3| The next Executive Compensation Plan should include ferry companies such as Marine Atlantic and Québec Traversiers (STQ) in its list of Canadian comparators.
- 4| The next Executive Compensation Plan should include B.C. Deputy Ministers within its list of B.C. public sector comparators.
- 5| There are no marine or shipping comparators in the B.C. public sector. If the government wishes to accept the recommendation of BC Ferries regarding marine and shipping comparators, it will need to establish a separate non-public sector comparison requirement in the Act. This is not recommended. An alternative would be for the B.C. Ferry Authority to ensure marine and shipping companies are included in the list of Canadian comparators.
- 6| While it is understandable that a decision on the most recent amendments to the Articles of the company has been deferred pending this review, in future the provincial government should ensure its decisions about proposed Article amendments are made in a timely way. If there are concerns about proposed Article amendments, those should be brought to the attention of the B.C. Ferry Authority immediately. A decision on the 2016 Article amendments should be made as soon as possible after this review has been received and considered by the Government.
- 7| The current post-retirement pensionable salary arrangement for C.E.O.s should not be continued. The Board of BC Ferries should ensure any post-retirement contract with its former CEO is in the form of a more regular non-pensionable consulting contract with specific deliverables and work plans. Any such arrangement should be reported in the annual Executive Compensation Disclosure of the company.

4.6 | SERVICE RELIABILITY

BC Ferries is consistent in meeting its targets for on-time performance, with approximately 90% of sailings leaving within 10 minutes of scheduled departure times. Nonetheless, capacity challenges and increasing demand mean the service is increasingly less reliable for those who depend on it.

OVERLOADS

BC Ferries defines “overload” as a sailing for which one or more vehicles waiting to travel cannot be accommodated. Overloads for passengers relate to sailing wait times, which depend on the frequency of sailings on each route and can range from under an hour to over two hours. In recent years the BC Ferries system has seen an increase in overloads and increasing numbers of customers lining up for sailings 45 minutes to 1 hour in advance. As part of this review, Ferry Advisory Committee Chairs raised several examples of persistent overloads and sailing waits. For example, Route 19 (Nanaimo - Gabriola) experiences overloads year round (and especially during the period from April to October) due to the size of the vessel on the route. Ferry users on Route 3 (Horseshoe Bay-Langdale) have particular problems with overloads because a large number of Sunshine Coast residents commute to the Lower Mainland or live on the Coast part-time. There are concerns the new reservation system may present even bigger problems for Route 3 ferry users since daily commuters may need to reserve hundreds of trips a year to ensure they make it onto their desired sailings.

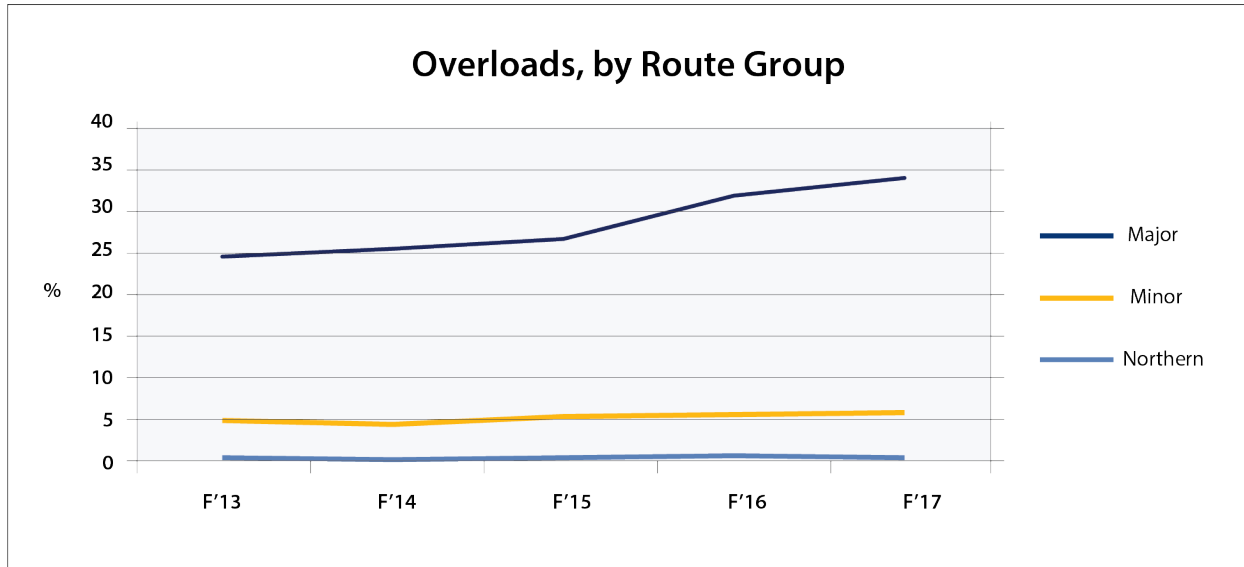
The chart below provides information on “overload sailings”, grouped by route group. The chart shows that overloads are an increasing problem for Major routes, but less of a problem for other routes. Overload increases coincide with the increased traffic levels that began in 2015.

Queen of Cumberland Accident

During a safety drill on board the Queen of Cumberland on April 18, 2018 a safety boat ‘davit’ crane broke and two crew members fell in the water. Both were rescued immediately but one of the workers was injured seriously. After the incident, the Queen of Cumberland was taken out of service. Sailings to and from the Southern Gulf Islands were significantly reduced for a full month as other vessels were redeployed. The lengthy delay was because BC Ferries had to source a new davit from Newfoundland, ship it across the country, fit the device, test it and obtain approvals from regulators before recommencing service.

The implications for Southern Gulf Island and Saltspring ferry users included: extended wait times, passengers not being informed about cancelled reservations, loss of business in Island communities, missed appointments, waits of up to an hour to reach the call centre by phone, and extra costs for alternative ferry connections. There were also many complaints about a lack of communication about schedule changes. The Commissioner is reviewing the incident but the event highlights concerns about the overall resilience of BC Ferries service. The company apparently needs more spare vessels and more spare parts. Contingency planning for such events should also be reviewed and improved.

Figure 10 | Overloads, by Route Group



There was a 10.3% increase in overloaded sailings on all designated routes in fiscal 2017, which is an increase from 9.5% in fiscal 2016. Unsurprisingly, overloads are most problematic in the peak summer season.

Tourism Victoria presented a submission to this review, in which they state that Route 1 (Swartz Bay-Tsawwassen) is usually at 100% capacity throughout the summer and raised the concern that lack of capacity in the future may restrict growth of the tourism sector in Greater Victoria. They recommend increasing the number of sailings and vessels on Route 1 to meet growing demand.

Overloads directly affect passenger satisfaction, especially on those routes with a less frequent sailing schedule. This connection becomes evident when comparing the level of satisfaction for the category “ferry sailing frequent enough” from the Customer Satisfaction Survey for Route 1 with the same indicator for Routes 2 (Horseshoe Bay-Nanaimo) and 30 (Tsawwassen-Duke Point). For instance, the satisfaction on Route 2 declined slightly from 3.42 in 2015 to 3.39 in 2016 and on Route 30 from 3.49 in 2015 to 3.40 in 2016. As noted by BC Ferries in its survey report, not only are these declines related to growing traffic and increased overloads, but also because the wait times between sailings for Route 2 and 30 are at least two hours. At the same time, the satisfaction with the frequency of sailings on Route 1, which has the highest percentage of overloads, is higher than on Routes 2 and 30. In response to this trend of declining satisfaction on some of the Major routes, BC Ferries is allocating a higher number of reservable space on Major routes 1 and 2, allowing more ferry users to confirm sailing times in advance of travel.

Even though during fiscal 2017 BC Ferries provided 1,768 round trips above the minimum required under the Coastal Ferry Services Contract in order to carry all traffic and minimize customer wait times, overloads remain a problem.

ON-TIME PERFORMANCE

On-time performance is defined by BC Ferries as the percentage of sailings departing (for Major and Minor routes) or arriving (for Northern routes) within 10 minutes of the scheduled time. For fiscal 2017, the Company's on-time performance rate system-wide was 89.5%, while its fleet reliability score was 99.69%.⁶¹ This reliability score means that only 0.3% of scheduled sailings in the fiscal year were cancelled due to mechanical issues related to vessels, terminals or crew availability. As compared to the prior fiscal year, on-time performance in fiscal 2017 decreased by 1.4%. In 2016 on-time performance was also lower than in the previous (2015) year by 0.9%. BC Ferries says that the trend to decreasing on-time performance is primarily due to higher traffic levels and weather-related delays.

BC Ferries faces particular on-time challenges on the routes using the Horseshoe Bay terminal because the configuration of the terminal limits the Company's operational flexibility during periods of high traffic. Initiatives to improve on-time performance have included adjusting and/or expanding sailing schedules, adjusting crewing schedules and refining vehicle loading processes during peak periods. These initiatives helped to improve on-time performance on the routes using Horseshoe Bay terminal in 2017; however, these improvements were offset by a decrease in on-time performance on the Duke Point to Tsawwassen route, mainly as a result of a 7.1% increase in vehicle traffic compared to the prior year.⁶²

SUMMARY

Increasing traffic over the last few years has significantly affected service quality resulting in a higher percentage of overloads and a decrease in on-time performance. During Performance Term 4, a price cap of 1.9%, which closely matches B.C. inflation levels, likely helped to incent demand, along with factors like a lower value of the Canadian dollar and strong provincial economy. Recent fare freezes on Major routes, fare reductions on Minor routes and restoration of the full senior's discount will likely further increase traffic. While on its own growing ridership is a positive trend which has been reflected in higher net revenue for the company over the last two years, it becomes a problem if it means individuals are left behind or sailings are delayed. Changes to the reservation system as a result of the Fare Flexibility and Digital Experience Initiative are intended to smooth out some of this demand by enabling customers to reserve on less busy sailings if they choose. This makes sense and will hopefully help mitigate the problem. BC Ferries has also responded by offering significant fare discounts for early morning and late evening sailings, increasing the amount of reservable spaces and putting on extra sailings but, ultimately, the most sustainable solution for improving service reliability will be capital investments in additional vessels.

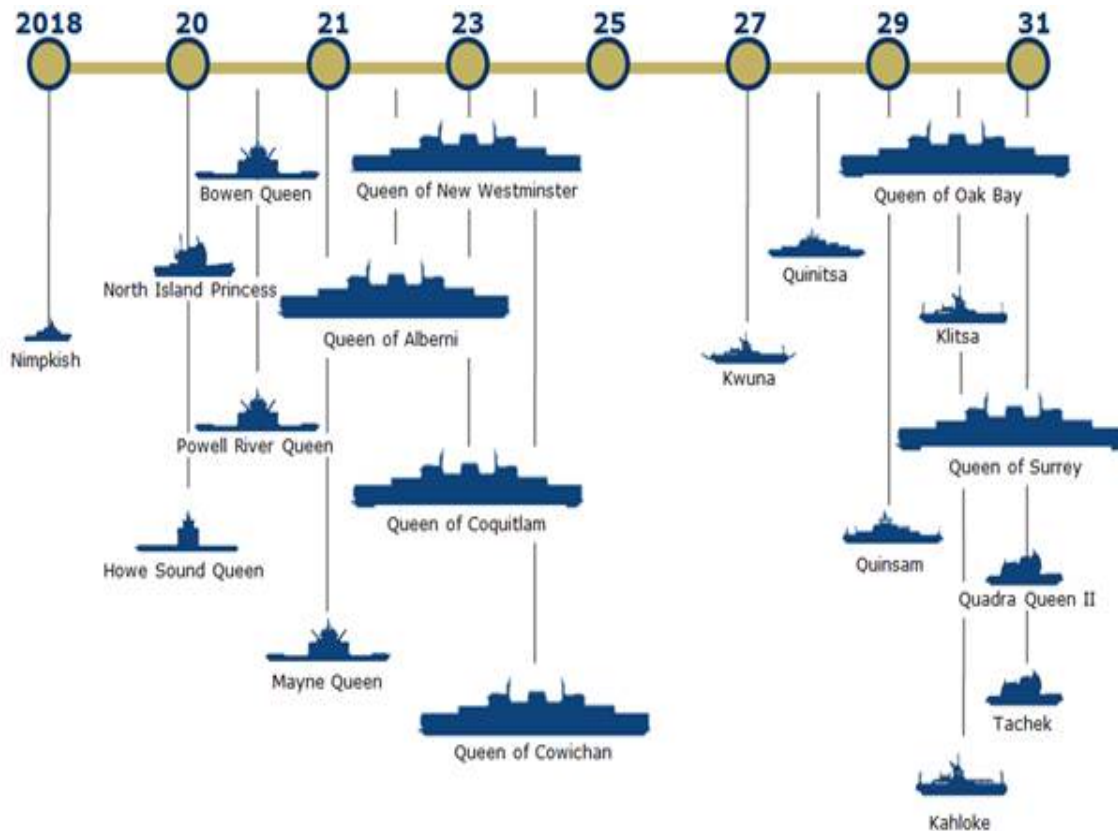
Beyond current vessel replacement plans, there appears to be a need for more spare vessels. Spare vessel capacity would aid contingency planning in those situations when a vessel goes out of service unexpectedly, as in the recent incident with the Queen of Cumberland. The loss of the Queen of Cumberland for a month highlighted fragility in the current fleet system. The BC Ferries system needs more resilience and a better ability to respond to unforeseen mechanical problems or other incidents that take vessels out of service.

⁶¹ Management's Discussion and Analysis of Financial Condition and Performance for the fiscal year ended March 2017, https://www.bcferrys.com/files/AboutBCF/investor/quarters_new/1617_Q4_MDA.pdf

⁶² BC Ferries Annual Report to the British Columbia Ferry Commissioner, http://www.bcferrys.com/about/commissioner_reports.html

The challenge, of course, is how to fund the debt for such capital. There is no magic solution. One option would be for the provincial government to provide capital grants to support such investments (which would just be another way for the Province to give the company money) but, short of that, BC Ferries will have to continue to rely on generating positive net earnings through fares and other revenue in order to build the equity to support increased borrowing.

VESSEL REPLACEMENT TIMELINE⁶³



⁶³ Vessel Replacement Program Future Fleet Outlook, BC Ferries Powerpoint presentation, by Paul Catsburg, Director, Vessel Replacement Program, ABCMI conference, May 9, 2018. These are conceptual details which are subject to change.

4.7 | SHIP BUILDING, MAINTENANCE AND REPAIR

As a coastal province, British Columbia's economy has benefitted for many decades from an active ship manufacturing, maintenance and repair sector. There are currently 17 companies in the shipbuilding and repair sector with significant shipyards and dry docks in Metro Vancouver, the capital region and north/central Vancouver Island.⁶⁴

In the past, most vessels in the BC Ferries fleet were manufactured in B.C. This changed in a big way after BC Ferries was transformed into an independent company. Of the eleven new vessels added to the fleet since 2003 only two were built in British Columbia—the Baynes Sound Connector and the M.V. Island Sky.⁶⁵ BC Ferries opted to build its major Coastal class vessels and the Northern Expedition in Germany, its Salish class vessels in Poland, and its new minor class vessels in Romania.

BC Ferries even decided to do the \$140 million mid-life retrofit and LNG fuel conversion of its major Spirit Class vessels in Poland, despite the fact those ships were originally manufactured in B.C. Interestingly, private sector Tote Maritime Alaska recently contracted with Seaspan to convert two vessels to dual fuel LNG at Victoria Shipyards which highlights that B.C. does have the ability to do LNG conversions domestically.

BC Ferries says it would prefer to build in B.C. but is applying commercial criteria to its ship procurement decisions. It is choosing overseas shipyards because those yards are winning the bids the company is putting out into the market. Factors like price and risk transfer are primary deciding factors but other criteria such as proposed design, experience and warranties are also taken into account.⁶⁶ Domestic economic or community benefits are not considered.

BC Ferries also cites shipyard capacity constraints and labour shortages given that B.C. yards, particularly Seaspan's Vancouver Shipyard, are busy building federal naval and Coast Guard vessels as

⁶⁴ The Industrial Marine sector as a whole (which includes more than shipbuilding and repair) contributed \$881 million to B.C.'s economy in 2016. See: British Columbia Industrial Marine Development Project Final Report, R.A. Malatest and Associates for the Association of British Columbia Marine Industries, September 30, 2017.

⁶⁵ The Northern Adventure and Northern Sea Wolf were previously owned vessels bought overseas and then retrofitted in B.C.

⁶⁶ "BC Ferries Awards \$165 million in Contracts for Three New Liquefied Natural Gas Fueled Intermediate Class Ferries", BC Ferries News Release, July 3, 2014. <https://www.bcferries.com/bcferries/faces/attachments?id=856428>

ISSUE: Salish Vessels

The Salish Raven, Salish Eagle and Salish Orca were introduced into the BC Ferries fleet in 2017 to serve the Southern Gulf Islands and Comox – Powell River routes. Through a design/build contract, the three vessels were built in Gdansk, Poland at Remontowa Shipyards for a total cost of \$200 million. A core group of 6 BC Ferries employees were on site during construction to provide project oversight, contract compliance and quality assurance.

Once the vessels began operating in B.C., it quickly became apparent that the kitchen heating and cooling (HVAC) systems were malfunctioning. As a result, temperatures in the galleys became extremely hot (sometimes reaching 51 degrees) thereby creating an unsafe working condition for the kitchen crew. The on board menu had to be modified to avoid food requiring deep-fryers, toasters or grills. As a result cafeteria choices, particularly for hot food, were very limited for several months.

Customers have also raised concerns about a very steep stair design which can feel unsafe and automated doors that are slow and complicated to open. There were also some early difficulties with the electric propulsion system and LNG loading which were overcome quickly.

BC Ferries has said that glitches can be expected when new vessels that are essentially prototypes are constructed and brought into service. They note that HVAC and other technical problems are repaired under terms of the 2 year warranty with Remontowa at no incremental cost for BC Ferries.

Meridian Marine Industries of Richmond, B.C. has entered into a contract with Remontowa to act as their warranty guarantee manager in Canada. Under terms of the warranty the HVAC problems have now been repaired and the galleys are fully functional again. However, there were no hot meals on the Salish vessels for several months which inconvenienced many customers and meant lost ancillary revenue for BC Ferries.

While some problems are to be expected with any new vessels, and while it's good that repairs are covered under warranty, it seems that problems with the galley HVAC, complex and slow doors, and the stairway design should have been caught in advance either in the contract review process or by the BC Ferries staff who were on site in Poland during construction.

part of the National Shipbuilding Strategy (which does include domestic economic benefits as a key criteria). Some BC shipbuilders have said it is not as simple as that. They have raised concerns about the complexity and cost of bidding on BC Ferries projects and argue the foreign competition is often unfairly subsidized. As well, there is concern that the 2016 decision by the federal government to waive the 25 percent tariff on ferries of all sizes imported after October 1, 2015⁶⁷ (and previous decisions to waive the tariff for specific BC Ferries vessels) have put Canadian shipbuilders at a further disadvantage.

As for capacity and labour constraints, local shipbuilders are confident they could ramp up and deal with capacity issues if they were successful in winning BC Ferries contracts. A consortia approach is often suggested, similar to the one put in place for construction of the Spirit of British Columbia and Spirit of Vancouver Island.

Whatever the reasons, British Columbia's economy is losing out on considerable potential value by not building ferries here at home. BC Ferries is planning to invest \$1.2 billion over the next nine years for an expected 14 new replacement vessels.⁶⁸ Consultants MNP LLP projected the following potential cumulative direct economic impacts over nine years if the 14 new ferries were built in B.C. rather than abroad.⁶⁹

Table 6 | Economic Impacts of Constructing 14 BC Ferries Vessels in British Columbia

ECONOMIC IMPACTS OF CONSTRUCTING 14 BC FERRIES VESSELS IN BRITISH COLUMBIA	
REAL GDP (CUMULATIVE)	\$1,746.92 million
FEDERAL TAX (CUMULATIVE)	\$330.94 million
PROVINCIAL TAX (CUMULATIVE)	\$180.49 million
JOB CREATION (OVER THE COURSE OF PROJECT BUILD-OUT)	4,906

The loss of 4,906 good quality manufacturing jobs and hundreds of millions in potential incremental tax revenue is significant and something the provincial government needs to take seriously.

As an independent company, BC Ferries is concerned first and foremost about its own bottom line and the interests of its passengers who pay the fares that support its capital program. The governance model does not motivate the Board of BC Ferries to consider the broader economic implications of its procurement decisions. If building new ferries in B.C. costs the company more money than building them abroad, then doing so eventually puts upward pressure on fares.

⁶⁷ Government of Canada Budget 2016 "Supporting Ferry Fleet Renewal" https://www.budget.bc.ca/2016/docs/plan/ch2-en.html#_Toc446106720

⁶⁸ British Columbia Ferry Services Inc. Business Plan for the year ending March 31, 2018. page 64.

⁶⁹ This is extrapolated by MMP from the model for three Coastal class vessels developed by Stokes Economic Consulting Inc. and the Centre for Spatial Economics for the report Made-in-BC Ferries by Blair Redlin and David Fairey, Centre for Civic Governance January 2014. <http://www.civicgovernance.ca/wordpress/wp-content/uploads/2014/01/Made-In-BC-Ferries-Final.pdf> There would also be 135 indirect and induced jobs for every 100 direct jobs created. See MMP's report in Appendix 8.2

Therefore, the challenge for the domestic shipbuilding sector is how to develop more cost competitive winning bids. For the Government of BC the challenge is how to best support and encourage a more competitive and sustainable shipbuilding industry.

SHIPBUILDING IN EUROPE

Since it is European shipyards which are winning the bids, a good place to start is by looking at the policy environment for shipbuilding in the European Union (E.U.)

As noted earlier, new minor class vessels are being built in Romania while Polish shipyards built the Salish vessels and are hosting the Spirit retrofits. Both Romania and Poland are lower wage jurisdictions. Average hourly labour costs in Romania in 2017 were only 6.3 euros which is less than a quarter of the E.U. average of 26.8 euros. In Poland, average hourly labour costs of 9.4 euros were higher than Romania but still far below the European average.⁷⁰

Labour costs are not the only factor, of course. The labour share of total production costs for ships built in the E.U. is in the range of 21 to 23%.⁷¹ Numerous other items like the price of steel, training of staff, size of the shipyard and taxes paid are all competitiveness factors as well.

The Polish government is assertive in building up the competitiveness of Polish shipyards. Since September 2016 Poland has provided their shipyards the option to pay a 1% flat tax on sales instead of generally applicable corporate or personal income tax and the European Commission has approved a variety of grants, interest rate subsidies and guarantees provided to the sector by the Polish government.⁷²

Poland is not alone in this. Jointly with industry, the European Commission has developed a comprehensive industrial strategy for the European shipbuilding sector which it calls LeaderSHIP 2020.⁷³ The strategy is built around: access to finance, particularly from the European Investment Bank; funding for research, development and innovation; improving market access; and supporting skills training and labour mobility.

When B.C. shipbuilding companies consider whether or not to bid on BC Ferries projects, they must consider that they are facing well organized competitors in Europe who benefit from a strong industrial strategy and a range of government supports.

⁷⁰ "Hourly labour costs" Eurostat, European Commission Statistics Explained. April 2018. http://ec.europa.eu/eurostat/statistics-explained/index.php/Hourly_labour_costs

⁷¹ Study on the competitiveness of the European shipbuilding industry, Ecorys Research and Consulting for the European Commission's D.G. of Enterprises and Industry, 2009. page 117

⁷² State aid: Commission approves Polish investment aid to SMEs in the shipbuilding sector; opens investigation into Polish tax incentive for shipyards European Commission Press Release, Brussels, January 15, 2018. http://europa.eu/rapid/press-release_IP-18-242_en.htm

⁷³ http://ec.europa.eu/growth/sectors/maritime/shipbuilding/ec-support_en

B.C. GOVERNMENT STRATEGY

Here at home, the B.C. government has implemented initiatives in support of the shipbuilding and repair sector which mostly focus on skills training. Skills training is seen to be particularly important given that the industrial marine sector has identified the need for an additional 16,559 workers by 2027 to meet demand and to fill vacancies caused by retirements and other attrition.⁷⁴

The Ministry of Jobs, Trade and Technology coordinates these efforts. Some B.C. government initiatives of the last few years include:

- The BC Shipbuilding and Ship Repair Industry Tax Credit Program which provides an annual maximum credit of \$5,250 per apprentice employee in the shipbuilding and repair sector. This program is currently set to expire December 31, 2019.
- Support for the Association of British Columbia Marine Industries through labour market partnerships and a \$200,000 contribution agreement.
- Funding of \$755,000 for new shipbuilding and repair training programs at BCIT and Camosun College.
- A Canada/B.C. Job Grant of \$582,000 to Seaspan Shipyards for shipbuilding skills development.

A related initiative is a \$2 million contribution by Seaspan to the University of British Columbia's Naval Architecture and Marine Engineering Program, which was made as part of the 'value proposition' for the National Shipbuilding Strategy.

While these are all worthwhile initiatives, they do not yet match the comprehensive strategies in Europe.

The B.C. industry has identified that, besides skills training, other constraints to expansion here include access to capital and production equipment, including new technology. If B.C. were to develop a more comprehensive industrial strategy for the shipbuilding and repair sector to match our competitors in Europe, additional elements could include help in accessing design resources, research and development support, financing assistance, and help accessing new markets.

ASSOCIATION OF BRITISH COLUMBIA MARINE INDUSTRIES

A first step towards a more robust industrial strategy is to meaningfully engage with companies in the sector. In that regard, B.C.'s support for the creation of the Association of British Columbia Marine Industries (ABCMI) has been very worthwhile.

In conjunction with BC Ferries, the ABCMI held a one day conference on May 9, 2018 called "Creating Conditions for Ferry Construction in B.C.". B.C. marine industry companies were well represented at the event.

In addition to information from BC Ferries on procurement processes and potential capital plans, the conference explored ideas on how B.C. companies could be more involved in ferry construction. Conference participants identified an important piece of context for their suggestions which is that, even if challenges with the BC Ferries procurement are overcome, it is still hard for B.C. companies to compete with the lower wages, production efficiencies, high volumes and public subsidies enjoyed by many large foreign shipyards.

⁷⁴ British Columbia Industrial Marine Development Project Final Report, R.A. Malatest and Associates for the Association of British Columbia Marine Industries, September 30, 2017.

One of the most fruitful areas of discussion concerned design. Because BC Ferries wants to transfer as much risk as possible, it has been using design/build contracting for new vessels. A number of B.C. companies have identified that the level of design detail that has been sought by B.C. Ferries during the procurement process has simply made it too expensive for them to submit competitive bids, especially if the companies do not have their own design capacity. However, given that BC Ferries has made standardization and interoperability of new vessels a strategic priority and since it now owns the designs for previous Salish and minor (M47) class vessels, it was suggested that BC Ferries share some of those specifications and design drawings with bidders.

BC Ferries subsequently responded positively to those suggestions. It agreed to provide bidders on future Salish vessels with 'as built' detailed engineering drawings and other drawings as well as statements of operational and technical requirements. Companies that are successful at reaching the Request for Proposal (RFP) stage will also be given access to shipyard construction drawings and specimen contracts. For new minor (M47) vessels BC Ferries has agreed to provide engineering drawings in current form and general arrangement drawings, as well as statements of operational and technical requirements and specimen contracts.⁷⁵

Other valuable conference suggestions included:

- Local companies joining the BC Ferries "makers list" so they have an opportunity to provide or install B.C. products for prime contractors. Some B.C. companies like EMCS Industries and Corvus Energy are already doing this.
- Developing B.C. consortia to work with foreign shipyards on aspects of their BC Ferries projects.
- The provincial government providing incentives or encouragement to BC Ferries to favourably weight bids which have B.C. content.
- Providing honoraria (funded by the B.C. government or BC Ferries) to assist B.C. companies to develop bid packages.
- Collaborations between B.C. shipyards, design houses, suppliers, lending institutions and the provincial government.
- B.C. shipyards forming consortia or other partnerships with foreign shipyards so (as an example) rough build of steel components and hulls is done overseas but more technical work like outfitting and system integration is done in B.C. Another variant of this would be a combination of local and offshore fabrication with superstructure modules built in B.C.
- Canadian government strategies that help fund adoption of new technologies and new automated build capabilities, cross-skilling of highly trained workers, support for Canadian supply chains and tax incentives.

Some B.C. companies have recently established service relationships with the foreign shipyards building BC Ferries vessels. Meridian Marine Industries Inc. of Richmond has contracted with Polish builder Remontowa to do warranty work on the new Salish vessels while Point Hope Maritime of Victoria has a similar warranty arrangement with Dutch builder Damen for the two Minor (M47) vessels built in Romania.

⁷⁵ A.B.C.M.I. BC Ferries Round Table Discussion – Summary https://abcmi.ca/wp-content/uploads/2018/05/ABCMI-BC-Ferries_Forum-Summary-1.pdf

SHIP REPAIR

Ship repair is a critical but under recognized component of BC Ferries' business. BC Ferries is the largest non-military consumer of ship repair services in B.C., having spent \$1.6 billion on such services since 2003. Each year, the company spends approximately \$150 million for ship repairs. In fiscal 2017, the company spent \$71.2 million on vessel upgrades and modifications of which \$33.4 million was for major overhauls and inspections of ship components.

In their submission to this review BC Ferries noted that despite repair work from BC Ferries the ship repair sector "...remains small and at risk of contraction. For example, in 2009 five small ship yards in the province closed when their owners either retired or moved to other sectors of business". Further "The ship repair sector is critical to the coastal ferry system. An inability to have ferries maintained and repaired in a timely manner could result in service interruptions to island communities."⁷⁶

Dry dock capacity is a crucial factor in this regard. The federally owned Esquimalt Graving Dock is a vital and busy facility for ship repair and refits. The federal government is investing a total of \$250 million to extensively renovate the facility. In its submission to this review, BC Ferries suggested the Esquimalt dock would benefit from a new marketing and management approach once the renovations are complete and urges the provincial government to support reinvigoration of the facility.

Point Hope Maritime, which in June of 2017 entered into a five year agreement with BC Ferries to do repair and maintenance of smaller vessels, is seeking permission of the federal government to build a new \$50 million graving dock at its Victoria facility. As well, the Port Alberni Port Authority is pursuing an initiative to develop a new floating dry dock and marine works yard in Port Alberni. The B.C. government should support both those initiatives as well as reinvigoration of the Esquimalt Graving Dock.

FLEET MAINTENANCE UNIT

Another crucial ship repair and maintenance resource is the in-house Fleet Maintenance Unit (FMU) sometimes known as "Deas Dock". This important BC Ferries resource has provided year round ship repair and maintenance for over 40 years. About 250 BC Ferries employees work at the site year round while in peak periods there are as many as 350 employees on site. The FMU does about 35% of the annual vessel repair, maintenance and refit work of the company for a cost of approximately \$30 million per year. The facility does not have a dry dock, though, which is why work requiring dry docking is done elsewhere.⁷⁷

Because it has been in operation for so many decades, the FMU has a number of buildings that are in need of renewal or replacement. Investment in the facility is contemplated in the capital plans of the company. Given the strategic importance of the FMU it would be wise to make those a priority.

⁷⁶ Meeting the Interests of British Columbians and Ferry Users: Suggestions for Improving Coastal Ferry Services in British Columbia British Columbia Ferry Services Inc., March 21, 2018. page 29.

⁷⁷ "Here's why you see BC Ferries in Richmond next to the George Massey Tunnel" by Lindsay William-Ross, Delta Optimist. February 1, 2018. <http://www.delta-optimist.com/news/here-s-why-you-see-bc-ferries-in-richmond-next-to-the-george-massey-tunnel-1.23162239>

Recommendations:

- 1| **Quantify economic impact of decisions to build overseas** – right now, there is little information available on the economic implications for British Columbia of decisions by BC Ferries to build vessels overseas. Given their respective mandates under the Coastal Ferry Act this is not something that can be required of either BC Ferries or the BC Ferries Commissioner. However, it is reasonable for the provincial government to provide such information to the public. Such information could also help inform a provincial 'vision' for coastal ferry services. It is recommended that the BC government assess the potential cost and benefit to the B.C. economy each time BC Ferries builds or retrofits a vessel overseas and that this information be made available to the general public.
- 2| **Multiple Account Evaluation (M.A.E.)** – Multiple Account Evaluation is an option evaluation technique which enables decision-makers to assess a range of considerations before making a capital investment decision. Numerical values are assigned to accounts such as 'financial', 'customer service', 'social/community', 'environmental', and 'economic development' to help assess the merit of a capital decision. It is used by a number of government agencies both here in B.C. and elsewhere⁷⁸ but is not currently used by either BC Ferries or the BC Ferries Commissioner. Without use of a tool like this, there is no assessment of the full range of economic, environmental or social implications of the capital choices made by BC Ferries. The BC Ferries Commissioner, which assesses capital through the Section 55 process, could use MAE to gain a better understanding of the economic and environmental implications of capital decisions. It is recommended that the B.C. Ferry Commissioner utilize Multiple Account Evaluation when assessing capital proposals.
- 3| **Provincial shipbuilding strategy** – It is recommended that the provincial government develop a more comprehensive strategy to support the B.C. shipbuilding sector. Such a strategy should continue the current focus on skills training but should also include elements such as financing, research and development, technological adaptation, access to new markets, bid development assistance, and new design resources for B.C. shipyards.
- 4| **Support for ship repair sector** – It is recommended that the B.C. government do a sectoral analysis of the B.C. ship repair industry and develop initiatives which support current and potential dry docks and new entrants to the business.
- 5| **Ship repair tariff** – the Canadian Ferry Association has been advocating for elimination of the current 25% import duty on ships repaired outside Canada. This would reduce costs for ferry companies that repair vessels outside of Canada but would create an additional competitive challenge for Canadian ship repair companies. The duty will gradually be eliminated under the terms of the Canada/E.U. trade agreement (CETA) in any event. It is recommended that the B.C. government decline to support the proposal to immediately eliminate the import duty on vessels repaired outside of Canada.

⁷⁸ See for example: Benefit Cost Analysis Guidebook, B.C. Ministry of Transportation and Infrastructure. Revised August 2014. Section 2, page 9 <https://www.th.gov.bc.ca/publications/planning/Guidelines/BenefitCostAnalysisGuidebook.pdf> or Multiple Account Evaluation for Alberta Transportation: A Decision Making Tool, Alberta Transportation. December 17, 2015 <https://open.alberta.ca/dataset/64d55808-21af-475d-8565-bf87297b0bf3/resource/803aaf35-d40f-4459-86c5-b377cb8ba578/download/multiple-account-evaluation-final-draft.pdf>

4.8 | INFORMATION TECHNOLOGY AND RESERVATION SYSTEM CHANGES

BC Ferries has been working on several information technology (IT) initiatives to modernize the company's core technology systems, improve capacity utilization, and enable variable pricing since 2007. These are known as the Automated Customer Experience (ACE) program and the Fare Flexibility and Digital Experience Initiative (FFDEI).

ACE is intended to update customer booking, ticketing, and check-in systems, consolidate payment processing and streamline traffic at terminals. ACE will enable BC Ferries to better manage demand through increased advance purchase incentives and price flexibility. The program began in June 2007 and was originally estimated to be complete by June of 2015. The ACE schedule has been amended several times, with a current projected completion date of June 2020.

FFDEI will replace the current BC Ferries website, upgrade the point of sale system, and provide a new e-commerce platform and reservation system. With these changes, BC Ferries aims to: manage fares at a sailing level; improve operational efficiency through better capacity management; provide greater online functionality and new booking options; and provide better access for mobile devices.

ACE and FFDEI were reviewed by the Commissioner in both 2013 and 2015 as part of the regulator's mandate to approve capital projects under Section 55 of the Coastal Ferry Act.

In support of this current review, MNP LLP was asked to analyze the progress of both new systems. MNP reports that both ACE and FFDEI have encountered internal leadership and contractor performance problems which resulted in significant scheduling delays as well as extra costs for FFDEI of \$200,000 on a total final budget of \$18.6 million. This extra cost will be covered from the project contingency budget. The ACE program has not gone over its approved budget of \$72.8 million.

The Board of BC Ferries has been monitoring the two IT initiatives closely but has to date been using the same process used for other capital projects. The Board decided at its June 2018 meeting to form a new technology committee. This committee is intended to monitor the IT initiatives more closely with the hope of keeping both projects on time and within approved budget. The success or failure of the technology changes is a significant business risk for the company so it is appropriate for the Board to provide intensive oversight.

The detailed MNP report on both the ACE and FFDEI initiatives can be found at Appendix 9.4

IMPACT ON FERRY USERS

The two aspects of the new reservation system that concern customers the most are price and ease of use. While the new technology enables variable pricing, it is the pricing itself which is of most concern to passengers. Pricing and reservation changes have been made in a sequence of steps.

On April 1, 2017 BC Ferries reduced reservation fees from \$15 to \$10 for those booking more than a week in advance, from \$18.50 to \$17 for those booking between a week and one day in advance, and from \$22 to \$21 for those booking on the same day as travel. Reservation change fees were also reduced from \$9 to \$5.⁷⁹ These steps were part of the company's strategy to manage operations and revenue more efficiently by encouraging customers to book in advance. The reservation system still leaves room for 'first come first served' customers; however, it is not clear how much space will be available for reservation on each sailing.

Online reservations are currently available only on certain BC Ferries routes (i.e. the Major routes, Tsawwassen – Southern Gulf Islands and Powell River – Comox). For all other routes, reservations can only be made by phone. Interestingly, a significant number of customers travelling on the routes with online reservations still prefer to book on the phone.

⁷⁹ BC Ferries News Release, March 16, 2017. April 1 Tariff Adjustment Announced. Reduction in reservation fees and no increase on vast majority of routes, <https://www.bcferries.com/bcferries/faces/attachments?id=1021169>

ISSUE: Reservations for Medical Travel

Residents of coastal communities travelling to medical specialist appointments via BC Ferries are eligible for free passage through the Travel Assistance Program (TAP). TAP is coordinated by the B.C. Ministry of Health and transportation carriers like BC Ferries which agree to waive or discount their regular fees. BC Ferries offers a full discount for the patient, as well as an escort (if approved in advance by a physician) and the fare for a regular sized vehicle. In fiscal 2017/18, the Ministry of Health provided \$12.5 million to BC Ferries to help pay for this.

To claim their free passage, those using TAP have to arrive at the terminal at least 1 hour before the sailing for Major and Minor routes and 24 hours in advance for Northern routes. The regular reservation fee is waived for Northern routes, though a no charge reservation is still required for those travelling from Port Hardy or McLoughlin Bay.

Increasingly, overloads and sailing waits are causing patients from ferry dependent communities to miss appointments, resulting in additional inconvenience for those already facing medical issues. Since it is not unusual for patients to wait months for specialist appointments, some have been opting to pay a reservation fee to ensure they get to their appointment. The cost of this can be prohibitive for some patients and is, at the very least, unfair.

Some coastal residents have been advocating for BC Ferries to introduce medical priority boarding or assured loading for those travelling to specialist appointments. Others have recommended that BC Ferries offer the discount based on the ExperienceCard fare rate rather than the full regular fare.

Given that reservation fees have already been waived for medical travellers on the Northern routes, and given that the cost of medical traveller fares is already subsidized by the Ministry of Health, the simplest solution to the problem would be for BC Ferries to waive reservation fees for Major and Minor routes as well.

A new e-booking system was originally scheduled to launch July 2017 but did not actually commence until March 2018 and did not “go live” for customers until May 24, 2018. The bulk of reservation system changes are internal and not apparent to customers. The only change for customers reserving by phone is that they must now enter their credit card information using the dial pad on their phone rather than providing it to a BC Ferries agent. This change is explained on the BC Ferries website and is a payment card industry standard to keep customer information secure.

CALL CENTRE WAITS

During the roll out period for the new reservation system (March – May 2018) wait times to reach the BC Ferries call centre rose dramatically with many having to wait over an hour to get through. BC Ferries attributes this to both external and internal factors.

Internally, the system-related reasons for lengthy waits were: i) the new reservation system is more detailed and requires more customer information to be entered, and ; ii) customers are now required to enter credit card information themselves as agents are no longer able to do so.

Externally, both the Queen of Cumberland being taken out of service and a prolonged closure of the Malahat highway happened to coincide with introduction of the new reservation system. Both events increased call volume significantly and put great pressure on the call centre. Unfortunately, the call centre was also understaffed right at that time because some agents were away receiving training on how to use the new reservation system.

On top of all that, a system-related technical glitch took place on May 25 and 26 which meant the new reservation system did not download information to the terminals in a timely way. According to BC Ferries staff this problem was dealt with quickly and lessons were learned for the final releases of new technology.

All these problems may have been avoidable by additional testing prior to the new reservation system going live as well as ensuring there were adequate numbers of staff on hand to deal with unanticipated problems. Hopefully BC Ferries will bring on additional call centre agents prior to implementation of the next stages of IT modernization.

IMPLICATIONS

BC Ferries believes the main benefit of the new IT systems, once they are fully implemented, will be convenience for customers. The new BC Ferries website (scheduled to be released in October 2018) is supposed to be faster, easier to use and offers more functionality.

The new website will allow BC Ferries to offer more than 1 tariff for the same sailing. BC Ferries hopes to enable future customers to pay the full applicable fare in advance, without a separate reservation fee, while also offering access to discounted fares (subject to availability). It is still unclear when these changes will be implemented.

Apart from variable pricing and reservation, the new IT system enables customers with mobile devices to access online booking, ticketing and check-in system anywhere and anytime. This change is welcomed by tourist operators who cooperate with BC Ferries Vacations⁸⁰ and is in line with the general trend towards increasing e-commerce and e-service. Regrettably, the BC Ferries modernization will not permit all aspects of transactions to

⁸⁰ Northern BC Ferry Service, Prepared by Wave Point Consulting for Tourism Prince Rupert, April 23, 2018, <http://www.bcferrycommission.ca/wp-content/uploads/2018/05/North-Coast-Ferry-Service-Report-May-2018.pdf>

be completed on mobile devices though. Ferry users who book on their phones will still be required to present a hard copy of their itinerary when they arrive because terminals do not yet have the technology to support reading of barcodes on an electronic device.

The ultimate strategic goal of the new IT systems is to smooth demand in a ferry system that is increasingly overloaded on the most popular sailings. By offering cheaper fares on sailings with less demand, it is hoped the system as a whole will experience fewer overloads and there will be improved service reliability. Smoothing out demand in this way makes strategic sense as it holds out the promise of more efficient utilization of the vessels available, however, BC Ferries and the Commissioner should ensure there is no use of “surge pricing” and that the highest current fares for car and driver do not increase as a result of the new system. The Commissioner should monitor implementation of the new system to ensure total fares charged remain within the price cap and customers are well served.

Some residents of ferry dependent communities are concerned the new reservation system will result in less ability to simply drive up to the terminal to board a desired sailing, which is the practice for many who use the ferries as a part of their daily life. These citizens are concerned by comparisons between BC Ferries reservations and the airline industry since they view the coastal ferry service as the marine component of the public highway system.⁸¹ By discounting advance reservations, BC Ferries will favour customers who can plan in advance and who are likely travelling for leisure rather than out of necessity. Also, a system based largely on reservations may disadvantage those who don’t have ready access to mobile phones or the Internet.

The Sunshine Coast Ferry Advisory Committee has pointed out that the new system presents a different challenge for Route 3, which has a large proportion of commuters. Those who travel for work between the Sunshine Coast and Lower Mainland are concerned that they will have to make over 200 reservations annually to ensure they get on desired sailings. For daily commuters, the convenience of making a reservation may actually become the opposite. BC Ferries should consult closely with the Ferry Advisory Committees for routes that have a high proportion of regular commuters to ensure the new reservation system does not actually reduce access and convenience for those users.

Some of the potential limitations of the new reservation system can be mitigated by ensuring a significant proportion of ‘first come first served’ spots are set aside on peak sailings and that the company is transparent in advance about how many drive up spots are available. BC Ferries should seek the advice of its community advisors when deciding the proportion of spots available for reservation on each sailing.

4.9 | INNOVATION AND BUSINESS DEVELOPMENT DIVISION

BC Ferries recently reorganized its Executive to accommodate a newly created Innovation and Business Development (IBD) Division. The IBD Division was established in the fall of 2017 and is headed up by Captain Jamie Marshall, former Vice President of Fleet Operations. The strategic goal for the new Division is to pursue strategic business opportunities in order to grow and diversify the revenues of the company. As an aspect of business development, the IBD Division will also focus on creating project partnerships with external partners who are not current customers.

⁸¹ Shaw, Rob. Transportation minister not keen on BC Ferries plan for airline-like reservations, Times Colonist, March 20, 2018, <http://www.prpeak.com/transportation-minister-not-keen-on-bc-ferries-plan-for-airline-like-reservations-1.23206968>

As part of this review, MNP LLP was asked to examine and report on the new function.⁸²

When asked what type of new business development or innovation they have in mind, BC Ferries cited the following examples of possible opportunities:

- A new passenger ferry service linking Royal Bay in Colwood to Esquimalt or downtown Victoria;
- Door-to-door foot passenger services in partnership with ride-share companies;
- Further pursuit of renewable energy sources; and,
- Changes in vessel design or crewing.

While there are currently no staff reporting to Captain Marshall a recruitment process is underway for a Manager of Business Development and recruitment is also planned for a Manager of Innovation in the fall of 2018. The fiscal 2018/2019 budget for the IBD Division is \$682,085.

The Oslo Manual produced by the Organisation for Economic Co-operation and Development defines the concept of innovation as:

“An innovation is the implementation of a new or significantly improved product (good or service), or process, or a new marketing method, or a new organizational method in business practices, workplace organization or external relations.”⁸³

The focus of this definition is on “implementation”, which means that innovation is not just a good idea to be pursued but a good idea that can be implemented. When the focus is on implementation, a well-defined business case development process needs to be in place before “a good idea” can actually become innovation.

BC Ferries has a robust business case process for its capital projects, particularly those reviewed by the Commissioner under Section 55 of the Coastal Ferry Act. In contrast, the structures, processes and roles for innovation business cases have not yet been established. While the Division is still relatively new, it would be prudent to put rigorous feasibility study and business case processes in place prior to pursuing specific business development ideas. In the absence of such processes, it will not be clear if BC Ferries is pursuing ideas that will actually generate new revenue for the company.

An illustration of this concerns the idea of passenger ferry service from the Western Communities. To test the extent to which there might be interest in partnering on the project BC Ferries held a meeting with private landowners, developers, municipalities, and BC Transit in January 2018. Although the Ministry of Transportation and Infrastructure had been alerted that BC Ferries was considering the idea, they were not invited to the meeting of potential partners. This was unfortunate given the ministry has a lead responsibility for multi-modal transportation planning and any such service would have implications for land use and the highway system. Whether or not the ministry indicated support for the idea, they ought to have been invited to the multi-stakeholder discussion. As well, BC Ferries began partnering discussions prior to doing any preliminary feasibility study that might eventually lead to a business case. According to media reports, the concept was still at an early stage yet had been discussed within the company for about six months⁸⁴, which would have been enough time

⁸² See appendix 8.2

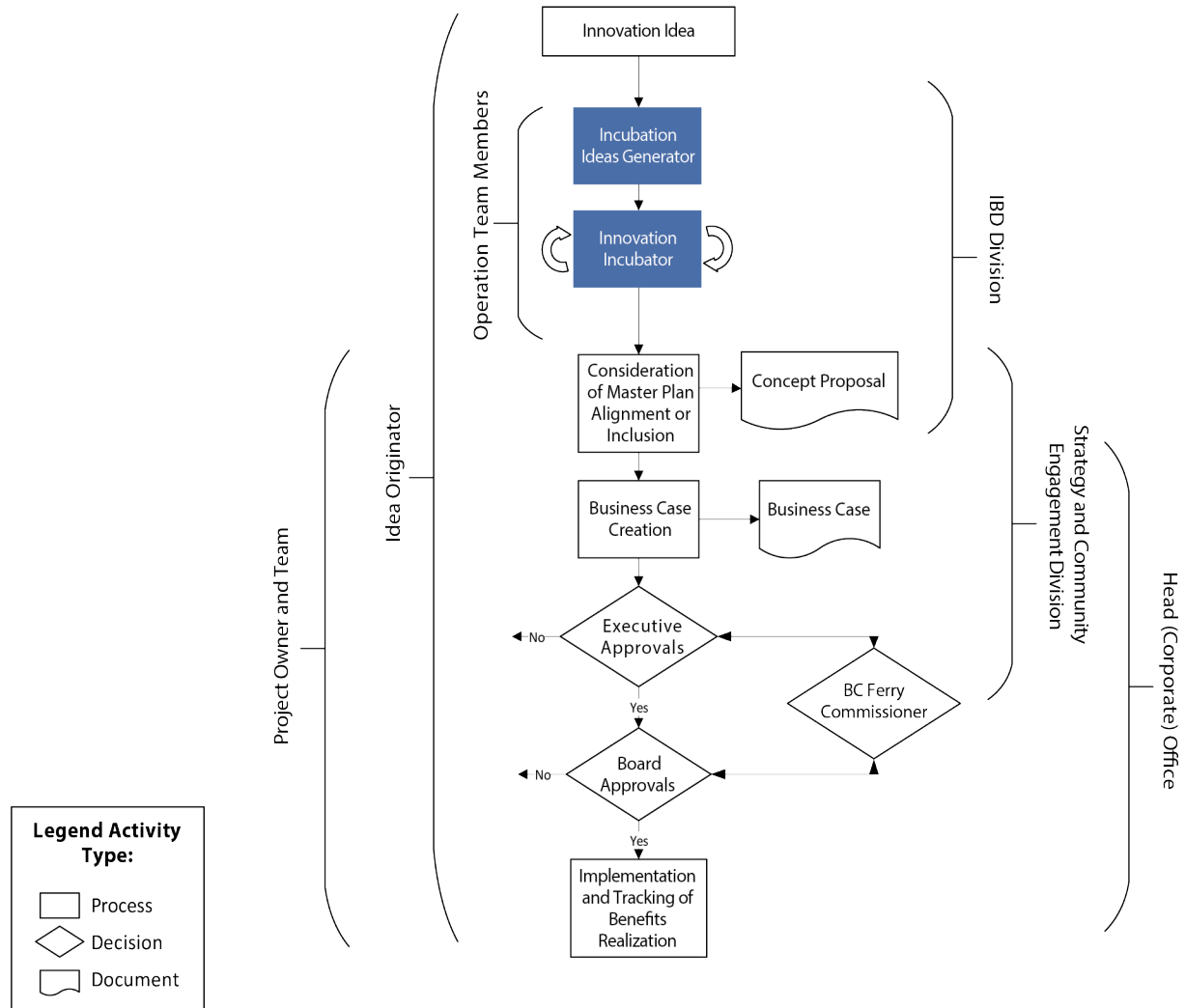
⁸³ Oslo Manual, Organization for Economic Cooperation and Development, Guidelines for Collecting and Interpreting Innovation Data, 2005, https://read.oecd-ilibrary.org/science-and-technology/oslo-manual_9789264013100-en#page1

⁸⁴ “BC Ferries mulls passenger service between Royal Bay in Colwood and Victoria,” by Carla Wilson Times Colonist, January 27, 2018. <http://www.timescolonist.com/news/local/b-c-ferries-mulls-passenger-service-between-royal-bay-in-colwood-and-victoria-1.23156722>

for preliminary testing of the extent to which such a service actually has potential to grow the revenues of BC Ferries.

MNP LLP produced the following diagram describing the BC Ferries business case development process which the new Division intends to use.

Figure 11 | Conceptual Mapping of the Innovation and Business Case Development Process



At this point, it appears the IBD Division's focus is on setting up structures (i.e. Innovation Incubator) to promote an overall culture of innovation within the company and the generation of ideas. This is the priority for now but it is to be hoped that setting up processes for business case revenue can be developed simultaneously.

There remains a lack of clarity about the source of funds for potential innovation projects and the extent to which business development initiatives will be reviewed by the Commissioner in the way that capital projects are. Because fare payers will be supporting the budget for this new function, it is important that it generates net new revenue to help support the core ferry service.

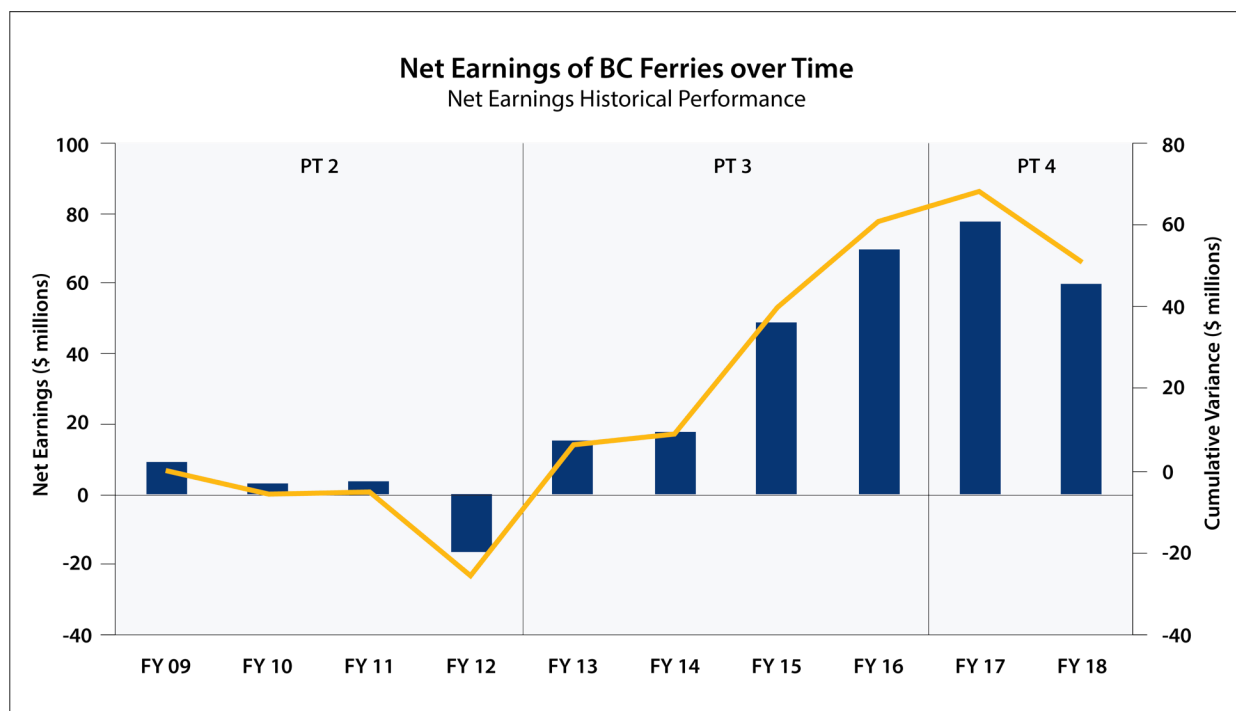
5

FINANCE



BC Ferries had flat net earnings for much of the last decade and actually lost money in fiscal 2012. It began to generate positive net earnings at the beginning of performance term 3 (in part due to service cuts, as well as changes following the Commissioner's 2012 review) and has generated very strong earnings the last three years. Net earnings were \$77.4 million in fiscal 2017 and \$59.9 million in fiscal 2018.

Figure 12 | Net Earnings of BC Ferries over Time



Source: BC Ferries Annual Financial Statements

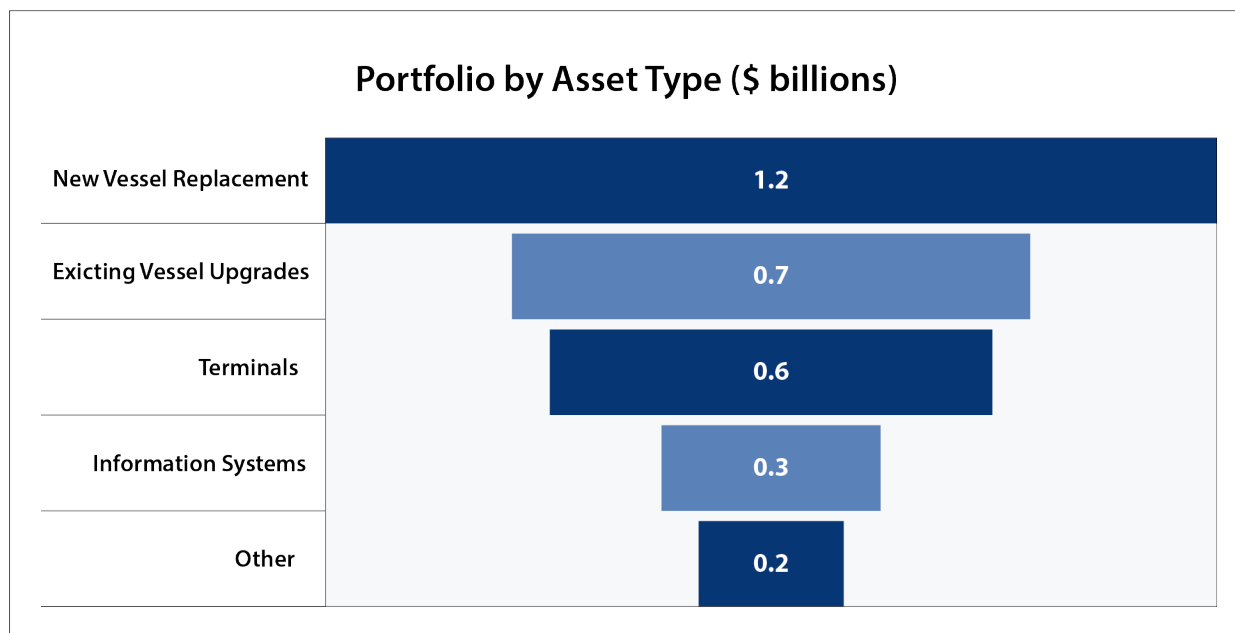
5.1 | CAPITAL PLANNING, EQUITY, AND DEBT⁸⁵

BC Ferries has significant capital requirements because many of its vessels are nearing the end of their useful life, terminals and facilities like the Fleet Maintenance Unit require refurbishment, and the company is making ongoing investments in new information technology.

A major consideration in creating the regulated independent governance structure of BC Ferries in 2003 was to transfer responsibility for coastal ferry service debt. Because BC Ferries is no longer a Crown agency and because the provincial government no longer controls it, the company is not part of the provincial government's "reporting entity". This means the debt of BC Ferries is not provincial debt. BC Ferries issues and pays back its own bonds and is responsible for its own credit rating.

The company is currently managing debt of \$1.3 billion. The current Capital Plan for the period from 2014-2026 projects capital spending of \$3 billion for that period.

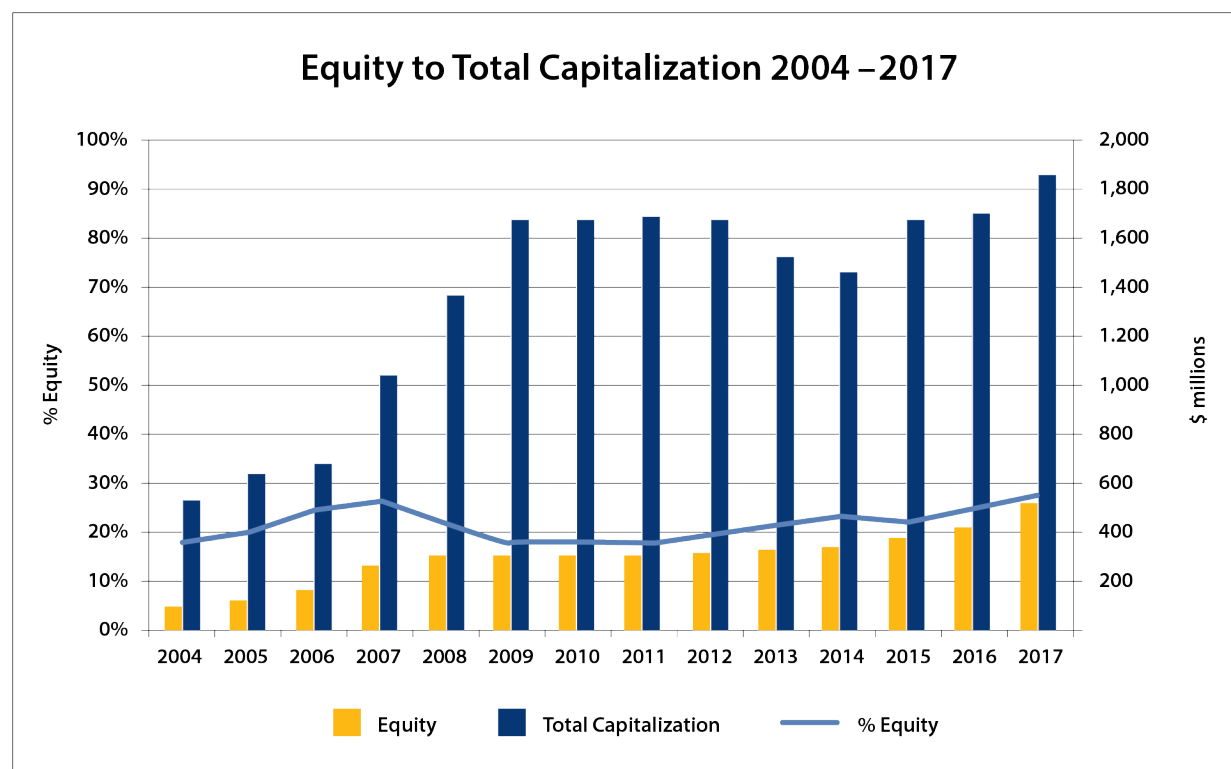
Figure 13 | Distribution of Capital Across Major Programs



⁸⁵ MNP LLP was asked to provide background and advice for this review on capital planning, equity and debt. Charts in this section are taken from the MNP report which can be found at Appendix 9.4

BC Ferries needs to generate sufficient equity to support the debt it takes on for its capital plan.

Figure 14 | Equity to Total Capitalization 2004–2017

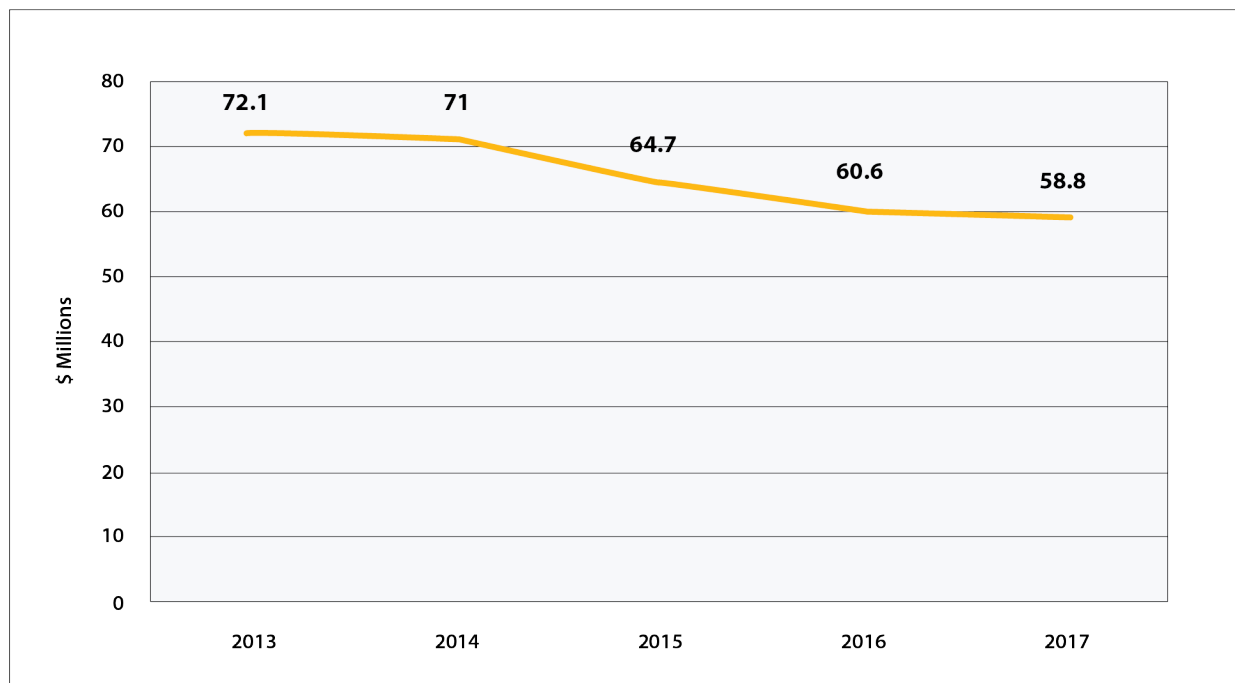


In 2017, the equity to capitalization ratio for BC Ferries was 29.4%. MNP LLP observes that this level of equity is lower than a number of comparable private sector ferry companies but BC Ferries is a natural monopoly. There is negligible risk that the company will default on its debt, which is why the company’s borrowing agreement supports that level of equity. As well, since BC Ferries has no private shareholders, it does not need to pay dividends (other than the \$6 million paid to the provincial government each year for its preferred non-voting shares). When the company generates positive net earnings, it is in a stronger position to support the additional debt its Capital Plan requires.

Although its credit rating is not as good as the AAA rating enjoyed by the provincial government, BC Ferries has a good and improving credit rating. Its most recent rating from Standard and Poor’s was AA- while its most recent rating from DBRS was A (high). To maintain its strong DBRS rating, BC Ferries must maintain a Debt Service Coverage Ratio of at least 2.5x. In the last two fiscals, the company’s Debt Service Coverage ratio was 3.1x and 3.2x so it is doing well at protecting and enhancing its credit rating.

One reason is that the company is regularly repaying principal on its existing debt at the same time as it takes on additional debt. It is also benefitting from low interest rates and capitalization of interest as it invests in new assets. In fiscal 2017, the annual expense for financing its debt was \$58.8 million.

Figure 15 | BC Ferries' Finance Expense (2013-2017)



BC Ferries has a strong internal capital planning process with good Executive and Board oversight. This was confirmed by MNP with their finding that:

"Generally, MNP observed that BC Ferries follows an adequately robust capital planning process with a strong governance model and clear delineation of roles and responsibilities, along with a consistent tracking of project progress."

As part of the price cap process, the Commissioner establishes equity levels for BC Ferries. MNP's report suggests that BC Ferries and the Commissioner go further by moving to a deemed capital structure in order to increase the equity to capitalization ratio to thereby gain better terms for future financing. The company and the regulator may wish to consider this for Performance Term 5 but should do so cautiously in order to avoid increasing pressure on fares. Given that BC Ferries is currently generating healthy net revenues, is steadily reducing its finance expense and enjoys good credit ratings it needs to keep focused on investing in new capital without inordinately burdening fare payers.

The company should also continue to pursue its current prudent approach to debt management and strive to seek additional internal efficiencies.

5.2 | FEDERAL FUNDING

ANNUAL GRANT

The Government of Canada provides an annual inflation adjusted grant to help support B.C. ferry services. More recently, the federal government has also begun to provide certain project specific capital funding.

The annual grant commenced in 1977 through an agreement between the Governments of Canada and British Columbia in which B.C. agreed to assume sole responsibility for ferry and coastal services in return for the ongoing indexed grant.⁸⁶ The grant is indexed annually to the Consumer Price Index for Vancouver. The amount of the annual grant for 2017/18 will be \$29.782 million.

Transport Canada says the purpose of the grant is “...to provide transportation links to the national transportation system from various regions and isolated areas of British Columbia”.⁸⁷

The mechanism for dispensing the federal grant is referenced in the Coastal Ferry Services Contract. The federal government pays the provincial government on a quarterly basis, and the Province in turn remits the same amount to BC Ferries every quarter. Since 2003, B.C. has transferred \$374.5 million in federal grant funding to BC Ferries.

CAPITAL

In addition to the ongoing operating grant, BC Ferries has recently been able to access some significant federal funding for capital. This follows several years of advocacy by the provincial government and coastal communities and is an encouraging change in federal policy.

In March of 2017 a federal contribution of \$60.47 million from the New Building Canada Fund was announced in support of three BC Ferries projects. The three projects are: (i) two new Salish class vessels to serve the Powell River – Texada Island and Port McNeill – Alert Bay – Sointula routes; (ii) the new *Northern Sea Wolf* which will replace the 44 year old MV Nimpkish on the restored seasonal route between Port Hardy and Bella Coola; and, (iii) a major upgrade to the Langdale Terminal, constructed in the 1950s.⁸⁸ The federal funding will account for roughly one third of the overall capital costs of the three projects.

The federal government also provided capital funding of \$10 million towards the \$20 million cost of a new terminal in Klemtu on the central coast.⁸⁹ The terminal construction project was managed by the Ministry of Transportation and Infrastructure and opened in August of 2011. The federal capital contribution came from the Infrastructure Stimulus Fund.

⁸⁶ Transport Canada, Government Expenditures and Revenues from Transportation, <https://www.tc.gc.ca/eng/policy/anre-menu-3017.htm>

⁸⁷ Transport Canada, Grant to the Province of British Columbia in respect of the provision of ferry and coastal freight and passenger services, <https://www.tc.gc.ca/eng/corporate-services/planning-1348.html>

⁸⁸ “The Government of Canada and BC Ferries invest to upgrade and expand ferry services” Infrastructure Canada news release, March 31, 2017 https://www.canada.ca/en/office-infrastructure/news/2017/03/the_government_ofcanadaandbcferriesinvesttoupgradeandexpandferry.html

⁸⁹ “Klemtu now on tourism, economic map thanks to ferry terminal”, Government of BC news release, August 13, 2011. <https://news.gov.bc.ca/stories/klemtu-now-on-tourism-economic-map-thanks-to-ferry-terminal>

EAST COAST FERRIES

Advocates for more affordable west coast ferry service have often pointed out that British Columbia receives only a fraction of the federal funding provided to ferry services on the east coast. For example, Marine Atlantic Inc., the federal Crown Corporation which operates ferry service between Nova Scotia and Newfoundland received \$98.96 million in both operating and capital funding from the Government of Canada in 2016/17 million and \$350.9 million in 2015-2016.⁹⁰

The 2018 budget of the company projects federal funding of \$213.4 million for 2017/18. This is all obviously much more than either the \$29.782 million annual grant or the \$60.47 million in one-time capital funding received by British Columbia. The difference is all the more notable given that Marine Atlantic transported only 326,796 passengers and 214,773 vehicles in 2016/17 as opposed to the 21 million passengers and 8 million vehicles moved by BC Ferries.

One reason for the difference is Section 91 of the Constitution Act of 1867 which assigns jurisdiction over international and inter-provincial shipping lines to the federal government, but leaves intra-provincial lines to the provinces. As well, when Newfoundland and Labrador joined Canada in 1949, the ferry service between Newfoundland and the mainland was accorded special status under the Terms of Union. The Newfoundland Act of 1949 guarantees that Canada will

*“..maintain in accordance with the traffic offering a freight and passenger steamship service between North Sydney and Port aux Basques, which, on completion of a motor highway between Corner Brook and Port aux Basques, will include suitable provision for the carriage of motor vehicles”.*⁹¹ Marine Atlantic fulfills that constitutional mandate.

Another comparison is the federal funding provided to the private operators for three inter-provincial ferry services on the east coast: (i) Saint John, New Brunswick -Digby, Nova Scotia; ii) Wood Islands, Prince Edward Island - Caribou Nova Scotia; iii) and Îles-de-la-Madeleine, Québec-Souris, Prince Edward Island. These services are collectively referred to as the Eastern Canada Ferry Services. Transport Canada is responsible for capital investments in these services as it is the owner of their terminal and vessels.⁹²

As well, through the *Ferry Services Contribution Program*, funding is provided to the private operators to cover operating deficits and to maintain the four vessels and six terminals used to run the services. Federal budget 2017 allocates \$278.3 million, over five years, for the continued operation of these three ferry services.⁹³ When divided, this works out to just over \$18.5 million per year for each of the three ferry services. This amount is roughly comparable to the annual grant provided for BC Ferries services even though BC Ferries is obviously much larger and more complex than any one of the Eastern Canada Ferries.

Comparative population size is another way to look at the funding inequity between east and west coast ferries. According to Census 2016, B.C.'s population is twice the size of the entire population of Atlantic Canada (4.6 and 2.3 million respectively).⁹⁴

It is also important to note that significant tax revenues are returned to the federal government as a consequence of the economic activity the west coast ferry services supports.

⁹⁰ Marine Atlantic Inc. annual and financial reports, <https://www.marineatlantic.ca/en/about-us/corporate-information/Reports/>,

⁹¹ Newfoundland Act 1949. Section 32.1 http://www.exec.gov.nl.ca/royalcomm/resources/nf_act.htm

⁹² Government of Canada, A Long-Term and Reliable Approach for the Eastern Canada Ferry Services, https://www.canada.ca/en/transport-canada/news/2017/05/a_long-term_and_reliableapproachfortheeasterncanadaferryservices.html,

⁹³ Ibid.

⁹⁴ CBC, Census 2016: Canada's population surpasses 35 million, <http://www.cbc.ca/news/politics/grenier-2016-census-population-1.3970314>,

SUMMARY

The terms of the 1977 agreement between B.C. and Canada can only be altered with mutual consent of both parties and the federal government has sometimes sent signals that it is reticent to do so. In 2005, a Transport Canada evaluation argued that the grant is “somewhat” inconsistent with its National Marine Policy and should be replaced with targeted funding to meet the transportation needs of specific remote communities in B.C.⁹⁵ Such a change would be a big problem for BC Ferries and the opposite of what west coast communities have been asking for.

It may well be possible at some point to enhance the annual grant through mutual agreement. Until an opening for that develops, though, it appears the most likely way to access a fairer proportion of federal funding for west coast ferry services is to make the case for additional federal infrastructure funding. In its submission to this review, the Union of British Columbia Municipalities suggested that recognition of the coastal ferry service as part of the highway system might assist in that regard.⁹⁶ If so, it should be drawn to the attention of federal officials that this was acknowledged in B.C.’s Budget 2018. As well, an option BC Ferries may wish to consider is to formally allocate its federal funding support to the major routes which support the Trans-Canada Highway.

Recommendation

The B.C. government should continue to make enhancement of the annual federal grant and new federal capital funding for ferries high on its list of intergovernmental priorities. BC Ferries should continue to seek new federal capital funding and the Province should actively support those efforts.

5.3 | RISK MANAGEMENT

BC Ferries faces a number of potential financial and business risks for which the company has developed corresponding risk mitigation strategies. BC Ferries discusses its approach to risk in the *Management’s Discussion and Analysis* portion of its Annual Report.⁹⁷ The overall approach to managing risk by BC Ferries was compared against best practices set out by the Canadian Standards Association as well as the federal Finance Ministry’s risk management guidelines for Crown Corporations.⁹⁸ Although BC Ferries is no longer a Crown Corporation, the federal guidelines are informed by leading practices of similar private sector entities, so are a reasonable standard to compare against.

⁹⁵ Transport Canada, Departmental Evaluation Services, Evaluation of Transport Canada’s Grant to the Province of British Columbia for the Provision of Ferry Services, Ottawa. June 2005

⁹⁶ Submission to Coastal Ferry Services Review Union of BC Municipalities. April 4, 2018. <http://www.ubcm.ca/EN/meta/news/news-archive/2018-archive/ubcm-submission-to-ferries-review.html>

⁹⁷ 2016-2017 Annual Report, British Columbia Ferry Services Inc. and BC Ferry Authority, pages 67-76. https://www.bcferries.com/files/AboutBCF/AR/BCFS_AnnualReport_2016-2017.pdf

⁹⁸ Risk Management – Principles and Guidelines, Canadian Standards Association. 2015 and Financial Risk Management Guidelines for Crown Corporations, Ministry of Finance, Government of Canada. 2009 <https://www.fin.gc.ca/activty/pubs/frmcc-grfse-eng.asp>

FINANCIAL RISK MANAGEMENT

The BC Ferries Board includes a number of Directors with previous Board experience who are qualified to oversee the company's risk management procedures. BC Ferries defines the following financial risks:

- credit,
- vendor,
- liquidity,
- interest rate,
- foreign currency, and,
- fuel prices

These areas of risk are consistent with the ones detailed in the federal Crown guidelines. This indicates the company is taking a prudent approach to risk management. BC Ferries defines each financial risk and provides a reasonable conservative risk mitigation strategy for each, for example, its strategies for estimating liquidity risks, using multiple credit institutions, and a robust fuel hedging program (discussed in greater detail in section 5.4).

The company is transparent in how it determines fair value estimates and the financial instruments it uses.

BC Ferries also follows a number of the main guiding principles and values recommended in the federal and Canadian Standards Association (CSA) documents namely: not being involved in speculative financial activities; not taking unreasonable risks; Board involvement in the oversight, evaluation, and periodic review of risk procedures; and, Management reporting regularly and publically on risk mitigation activities in a clear and comprehensive manner.

BUSINESS RISK MANAGEMENT

The company defines their principal business risks in the following areas:

- vessel repair facilities,
- major capital projects,
- security,
- safety,
- customer demand,
- human resources,
- security of information,
- economic regulatory environment,
- environmental regulations,
- other regulations,
- access to capital markets,
- performance risk,
- taxes, and,
- First Nations issues.

The business risks identified demonstrate a good understanding of the external and internal context of the organization. However, as was shown when the Queen of Cumberland was out of service for a month, BC Ferries

does not have adequate spare vessel capacity. This suggests that 'vessel or fleet condition' is an additional business risk that could reasonably be added in the future.

BC Ferries has a clear, integrated process of evaluating and managing business risks which involves the Board, management and employees. Risk management principles are incorporated in the planning and reporting work of the company, are reviewed periodically, and are in accordance with accepted risk management methodologies. The company also reported on the risk indicators they use and those are in accordance with the CSA risk management guidelines.

BC Ferries states that it manages risks in an economic regulatory environment by maintaining positive relationships with the Province, the Commissioner, and Ferry Advisory Committees representing local communities. To the extent this is actually achieved, it is consistent with the recommendation of the CSA to involve stakeholders in risk management.

5.4 | FUEL

Fuel is the second highest cost for BC Ferries after labour, amounting to \$118 million in fiscal 2017. In fiscal 2018, fuel is forecast to cost the company \$108 million. BC Ferries calculates that a 10 cent per litre increase in the price of fuel can affect net earnings by about \$11 million. In Performance Term 4, the price of fuel fluctuated 19 cents per litre, which would have affected the company's bottom line more significantly in the absence of a fuel management strategy.

The Commissioner's formula for determining price caps includes certain assumptions about the price of fuel, so fuel price volatility is a significant source of risk for the company. Higher than predicted fuel prices, or sharp spikes in the price of fuel, could lead to high fuel surcharges and a consequent increase in total tariff levels, which in turn can negatively affect traffic volumes. As part of an effort to mitigate this fuel risk, BC Ferries has a group of staff who monitor international and local fuel prices daily, weekly, and monthly and who provide quarterly reports to the Financial Risk Management Committee.

FUEL RISK MITIGATION STRATEGIES

Fuel deferral accounts are the primary means by which BC Ferries smooths out fuel volatility and mitigates fuel risk. Section 41.1 of the Coastal Ferry Act enables a regulator approved fuel deferral account mechanism whereby BC Ferries may recover or return fuel costs that are higher or lower than the price set by the Commissioner for the performance term. Currently, there is one fuel deferral account for northern routes and another for the non-northern routes. BC Ferries pays the difference from the set price to the relevant fuel deferral account. The account for the non-northern routes needs to be paid down at least once every performance term, which BC Ferries did on March 31, 2018 for a value of \$15.7 million.

Fuel surcharges and rebates are assigned to the price of a ticket as needed to manage the fuel deferral account balance. Surcharges increase the cost of ferry travel for users while rebates decrease the total price paid.

Due to recent fuel price increases, BC Ferries removed its previous fuel rebates as of June 27, 2018. This resulted in tariff increases of 50 cents for an adult passenger and \$1.70 for a vehicle on the Metro Vancouver – Vancouver Island routes and by 30 cents for an adult passenger and 70 cents for a vehicle on a variety of minor routes. The table below presents the history of rebates and surcharges since 2015.

Table 7 | Table: Fuel surcharges and rebates in effect since fiscal 2015

DATE RANGE	% SURCHARGE OR (REBATE)	APPLICABLE ROUTES
JANUARY 17, 2014 – DECEMBER 16, 2014	3.5%	Major and minor routes
DECEMBER 17, 2014 – MARCH 31, 2015	0.0%	All regulated routes
APRIL 1, 2015 – MARCH 31, 2016	(1.0%)	Major and minor routes
APRIL 1, 2016 – JUNE 26, 2018	(2.9%)	Major and minor routes
APRIL 1, 2016 – JUNE 26, 2018	(1.9%)	Northern Routes
JUNE 27, 2018	(0.0%)	All regulated routes

Source: Management's Discussion and Analysis of Financial Statements and Financial Performance for the fiscal year 2017, BC Ferries⁹⁹

Although fuel surcharges or the removal of fuel rebates increase prices for ferry users, it is an unfortunate reality that BC Ferries is currently very dependent on diesel and fuel prices have been on the rise of late, particularly in B.C.

Fuel deferral accounts help to manage the volatility of international fuel prices; however, the BC Ferries Commissioner should review fuel management strategies more frequently than once every performance term.

Fuel hedging is a tool by which fuel dependent companies (like BC Ferries) enter into advance fuel purchase contracts with a fixed fuel price. These contracts lock in fuel prices for a defined period of time. If the market price of fuel declines, then the fuel-consuming company will effectively pay an above-market price. If the market fuel price increases, then the company pays below that market price because of the locked in contract. BC Ferries does not use fuel hedging for speculative gain but only as a risk mitigation strategy. Fuel hedging minimizes surcharge changes and provides greater fare certainty.

⁹⁹ This table was modified from the original to reflect the decision by BC Ferries to remove fuel rebate starting on June 27, 2018.

In 2015 the Commissioner conducted a performance review of the fuel management strategy of BC Ferries which found:

- BC Ferries' activities to manage and minimize consumption of fuel are effective;
- BC Ferries has defined procedures in place to manage costs and the company is compliant with these procedures; and,
- The current deferral account is an effective strategy against fuel price volatility.

FUEL ALTERNATIVES

In addition to fuel risk management strategies BC Ferries is also attempting to reduce its reliance on expensive marine diesel. The two main alternatives now in operation are a cable ferry and dual-fuel vessels that run on both diesel and liquefied natural gas (LNG).

The *Baynes Sound Connector* cable ferry was introduced in 2015 on the Denman – Vancouver Island route in 2015. The cable ferry consumes approximately 50% less fuel than the diesel vessel previously serving that route. In fiscal 2017 this reduced fuel consumption resulted in savings of approximately \$200,000 compared to fiscal 2016.¹⁰⁰

The three Salish class vessels that entered the fleet in 2017 are dual-fuel vessels and are intended to operate primarily on LNG. The three vessels together consumed 2.0 million diesel litre equivalents of LNG and 3.0 million litres of ultra-low sulfur diesel (ULSD) in 2017/18. As 2017/18 was a transition period for these vessels, roughly 40% of fuel used was LNG, which resulted in savings of about \$915,000. LNG use was lower than originally anticipated because of issues with bunkering of LNG tanks on each of the ships. Those issues have now been resolved and the Salish vessels are fueled primarily by LNG. For fiscal 2018/19, it is anticipated that the Salish vessels will use LNG 90% of the time for projected savings of \$3.4 million. Given recent increases in diesel prices, LNG savings are projected to be higher than originally forecast.

Electric ferries offer the potential for additional fuel savings in the future (see separate issue call-out on "Electrification of Ferry Vessels" on page 98)

¹⁰⁰ BC Ferries Annual Report to BC Ferries Commissioner (2016-2017)

5.5 | ADMINISTRATIVE COSTS

BC Ferries defines administrative costs as:

“the cost of salaries, benefits, and other expenses incurred in connection with the general administration of the company and which are not directly incurred for a specific ‘operations’ or ‘maintenance’ function. They include support services such as accounts payable, payroll, accounting, internal audit, treasury, and corporate human resources and as well as costs for general technology services and application management, telecommunications, BC Ferries Commission fees, audit and legal fees, marketing, and public relations”.

Administration costs at BC Ferries have increased 21.5% over the last five years, growing from \$31.6 million in 2013-14 to \$38.4 million in 2017-18. The provincial Consumer Price Index grew by only 6.2% over the same period, so administration costs at BC Ferries have increased much more than inflation.

The main reasons cited for these year over year increases are increases in software licencing costs and wages and benefits for additional positions. A detailed description of annual administrative cost increases is presented in the table below (prepared by MNP LLP). Although they are only one factor, administration costs can have an effect on the company’s bottom line. For example, despite traffic increasing in 2017-2018, net earnings were down compared to the previous year, in part due to increased administrative costs.

With significant IT system changes it is likely that costs for software and IT consulting services will continue to increase. Wages and benefits costs in the “administration” category have been fluctuating year over year, but mostly increasing. BC Ferries could enhance transparency by providing more detail about the reasons for increasing administration costs in the Management’s Discussion and Analysis section of its quarterly and annual financial statements.

In 2015 the Commissioner conducted a performance review on the efficiency of BC Ferries, including administration costs. The review did not identify any significant concerns about administration costs; however, during the period just prior to the review the company had cut 77 positions so administration costs were down as a result of that.

It is recommended the BC Ferries Commissioner update the 2015 efficiency performance review given the trend of steadily increasing administration costs at BC Ferries.

Table 8 | Annual Analysis of Administrative Costs at BC Ferries

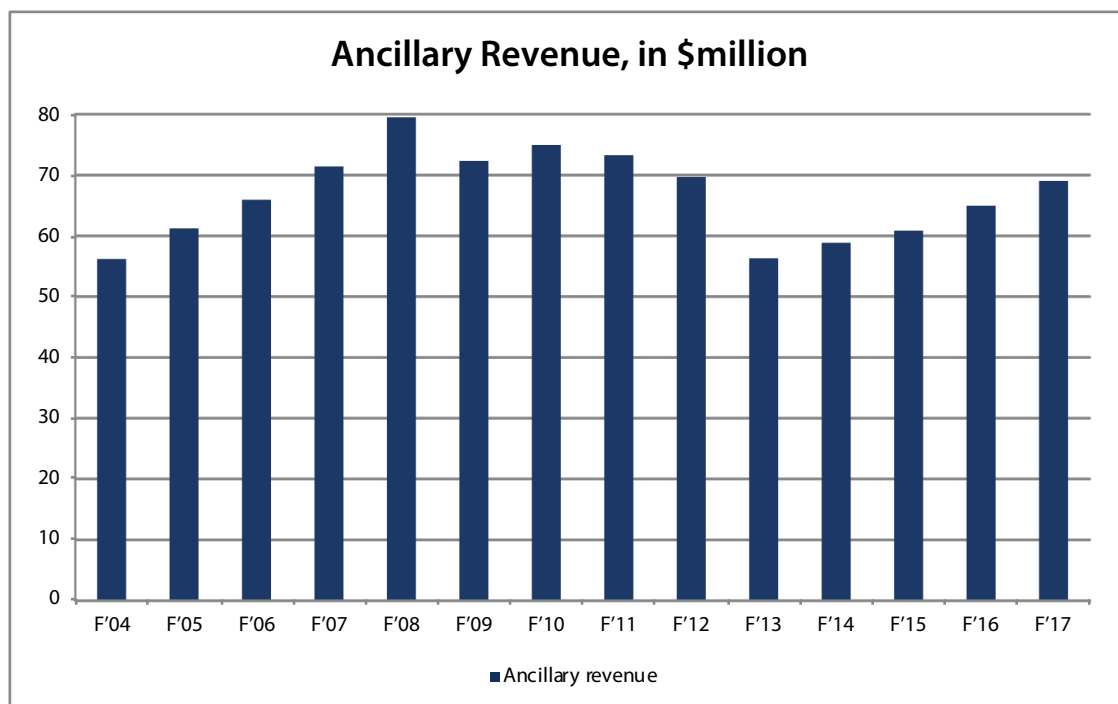
TIME PERIOD	ADMINISTRATIVE COSTS	OBSERVATIONS
ANNUAL STATEMENT 2017-2018	\$38.4 million (year of year increase of 7.26%)	Total administrative costs in fiscal 2018 were \$38.4 million, compared to \$35.8 million in the prior year. The \$2.6 million increase is mainly due to higher wages and benefits partially resulting from filling positions that were vacant in previous years.
ANNUAL STATEMENT 2016-2017	\$35.8 million (year over year increase of 3.74%)	Total administrative costs in fiscal 2017 were \$35.8 million, compared to \$34.5 million in the prior year. The \$1.3 million increase was mostly due to higher computer software licencing costs, training supplies and advertising costs.
ANNUAL STATEMENT 2015-2016	\$34.5 million (year over year increase of 7.78%)	Total administrative costs in fiscal 2016 were \$34.5 million, compared to \$32.0 million in the prior year. The \$2.5 million increase in administration costs was due to higher wages and benefits with the filling of positions vacant in the prior year, computer software licencing costs, contracted services, and \$0.6 million of Input Tax Credits, or ITCs, recoverable for the period of April 2003 through to October 2014 (i.e., reflecting the October 2014 Tax Court of Canada judgement recorded in fiscal 2015).
ANNUAL STATEMENT 2014-2015	\$32.0 million (year over year increase of 1.2%)	Total administrative costs in fiscal 2015 were \$32.0 million, compared to \$31.6 million in the prior year. The \$0.4 million increase was mainly due to a \$1.4 million increase in computer software fees, licenses, training supplies and contracted services. This was offset by a \$0.4 million decrease in wages and benefits and \$0.6 million worth of Input Tax Credits, or ITCs, recoverable for the period of April 2003 through to October 2014 (i.e., reflecting the October 2014 Tax Court of Canada judgement).
ANNUAL STATEMENT 2013-2014	\$31.6 million (year over year increase of 6.7%)	Total administrative costs in fiscal 2014 were \$31.6 million, compared to \$29.6 million in the prior year. The \$2.0 million increase in administration costs was due to a \$1.3 million increase in computer software fees, licenses and leases coupled with a \$0.6 million increase in wages and benefits.

5.6 | ANCILLARY REVENUE

BC Ferries generates ancillary revenue from services like food, gift shops, Seawest Lounges, parking and BC Ferries Vacations. Ancillary services are not regulated by the Commissioner but Section 46.1 of the Coastal Ferry Act enables the Commissioner to conduct performance reviews of ancillary services.

The following chart indicates that the total annual ancillary revenue amounts tend to follow the growth and decline of ridership. Ancillary revenue was close to \$80 million in 2008 when traffic levels were high and declined to \$55 million in 2013 when ridership decreased significantly. Besides ridership, ancillary revenue is also affected by price, customer preference and product selection.

Figure 16 | Ancillary Revenue, in \$millions



Data source: BC Ferries Annual Reports to the BC Ferry Commissioner

CATERING AND RETAIL OPERATIONS

BC Ferries provides food and retail services in 36 outlets on 22 ships and terminals. BC Ferries explains that besides providing services that passengers want, the staffing of food and retail outlets is a good way to utilize all the fully trained crew members that are required by Transport Canada's Minimum Safe Manning regulations. In 2017, revenues generated through net retail were close to \$55 million which was more than 9% of the total revenue generated through vehicle and passenger fares.

It is sometimes argued that these services are a frill or unnecessary but catering and retail services serve the interests of all ferry users, including those who do not wish to purchase food or other services themselves, because ancillary service revenue helps reduce upward pressure on fares.

BC FERRIES VACATIONS

BC Ferries Vacations sells bundled vacation packages of ferry, hotel, and tourism activities. Currently, the company offers customers a choice of over 180 ferry packages for 50 B.C. destinations.

BC Ferries Vacations generates incremental tariff and ancillary revenue by leveraging the existing passenger base and growing new business. BC Ferries Vacations supports B.C. communities and hotel partners by promoting local tourism year-round. In fiscal 2017 package sales worth \$6.2 million generated additional revenue which helped reduce pressure on fares. Vacation packages are the fastest growing segment of the company's market with an annual growth of 8.8% in fiscal 2017.

BC Ferries Vacations has often been criticized for utilizing an expensive storefront location near the cruise ship terminal and convention centre in downtown Vancouver¹⁰¹. In 2015 the Commissioner ordered a performance review of BC Ferries Vacations which was conducted by Pricewaterhouse Coopers. The review determined that BC Ferries Vacations meets its intended goals of leveraging the existing customer base to generate additional revenue and new business. The storefront location in downtown Vancouver was deemed to be appropriate based on an analysis of costs and the revenue the storefront generates.

The Commissioner's performance review also concluded that widespread, incremental economic benefits had been generated in coastal communities as a result of the services provided by BC Ferries Vacations. This conclusion was based on an examination of the list of local hotel and tour partners developed by BC Ferries Vacations. Specifically, the investment in tourism marketing programs by BC Ferries Vacations was found to be helpful with respect to building demand in smaller communities that have limited marketing resources themselves. Local communities and tourism organizations such as Tourism Prince Rupert¹⁰² and the Port Alberni Port Authority¹⁰³ have voiced support for BC Ferries Vacations as well.

¹⁰¹ For example: "Tired of skyrocketing ferry costs, BC Ferry users grow envious of 'no frills' service provided by US neighbours", by Tristan Hopper National Post, October 10, 2014.

¹⁰² Northern BC Ferry Service, Wave Point Consulting for Tourism Prince Rupert, April 23, 2018 <http://www.wavepointconsulting.ca/north-coast-ferry-service/>

¹⁰³ China Creek Campground Partners with BC Ferries Vacations, News release, April 17, 2018, <https://www.portalberniportauthority.ca/sites/default/files/uploads/18-04-17-CCCM-BCFV-Partnership.pdf>

6

FUTURE DIRECTIONS



The Terms of Reference released December 15, 2017 asked for a comprehensive operational review which is why the report considers operational and financial aspects of the service in some detail. This concluding section considers broader future directions for coastal ferry services and then makes recommendations in response to the questions set out in the Terms of Reference.

6.1 | PROVINCIAL VISION AND POLICY FRAMEWORK FOR COASTAL TRANSPORTATION

Within the current governance model for coastal ferries, a key responsibility of the provincial government is to define and articulate public policy. The Coastal Ferry Services Contract specifies the particular ferry routes that the Province is willing to pay BC Ferries to operate, so it is up to the provincial government to determine which routes and service levels make sense within the context of its overall plan for coastal transportation.

Previous reviews have consistently identified a gap in this regard and have repeatedly recommended a provincial government vision for ferry services.¹⁰⁴ This has never been done.

In 2013, the previous B.C. government said that its vision was “...affordable, efficient, and sustainable...” coastal ferry services. While those are all important attributes of a good service, those few words are basically a slogan and fall far short of the comprehensive plan and vision that coastal ferry services need.

In the absence of a provincial vision and plan, BC Ferries continues (as it has for many years) to make capital replacement decisions based on the routes that are in the contract now, as well as the terminals which support them. Cuts in service during periods of poor net revenue (like those of 2014) were largely driven by revenue factors rather than the needs of communities or the larger highway and transportation network.

This “like for like” approach to routes and vessel replacement is insufficient. Instead, a detailed provincial plan for the coastal transportation network should provide a framework for such decisions.

¹⁰⁴ For example, the Fred Wright report of 2001 said it was “imperative” that an Integrated Marine Transportation Plan be developed and the 2012 review by the BC Ferries Commissioners recommended: “The Province should work collaboratively with BC Ferries to develop a long-term vision of coastal ferry services in BC. A draft discussion paper should go out for public consultation. The resulting vision should be formally adopted by the Province and provide the basis for the long-term capital plan of the ferry operator. Ideally the vision would be in place before major capital decisions are made regarding PT4.”

A provincial vision and plan should be led by the Ministry of Transportation and Infrastructure. It should have a broad scope and should examine big ideas for change, such as the suggestion of a new terminal on Iona Island near Sea Island, which has the potential to significantly reduce crossing times to Vancouver Island while offering better integration with YVR and the Canada Line. As well, challenging issues like the future of the Mill Bay ferry service, the future of Horseshoe Bay terminal, possible passenger only service from the Sunshine Coast to Burrard Inlet, and improved service for the North Coast should all be considered openly.

In the absence of provincial guidance, BC Ferries is likely to take initiatives on its own (particularly with the creation of a new Innovation and Business Development Division) but it would be far preferable if BC Ferries had a provincial vision and plan as guidance.

Such a marine transportation plan should be informed by elements such as:

- a detailed socio-economic analysis of the impact of current ferry services for communities and the province;
- origin and destination studies;
- medium and long-term forecasts of ferry demand, especially in light of the recent freezing and reduction of fares;
- regional and provincial land use plans;
- integrated multi-modal transportation plans which project future highway needs and take into account the transit plans of BC Transit, TransLink and municipalities;
- the provincial Climate Leadership Plan;
- private sector investment forecasts; and
- public consultations on a draft discussion paper

To help spur and set the context for such planning, this review commissioned a report from Ken Cameron Inc. on future needs and opportunities in coastal transportation. The report can be found at Appendix 9.2

The Ken Cameron Inc. report examines a number of considerations for the future of coastal ferry services including autonomous vehicles, climate change impacts, increasing foot passenger traffic and more. It then offers three elements of a provisional policy framework and three suggested directions as follows:

Elements of a provisional policy framework:

- 1| *The Province sees coastal transportation services as part of its core responsibility to facilitate the movement of people, goods and services within British Columbia;*
- 2| *The services provided by BC Ferries are a central part of the Province's responsibility and should be delivered as efficiently and effectively as possible within a framework provided by the Province. Such a framework should include provincial objectives for a diversity of transportation choices, basic levels of service, fair and equitable treatment of users and the reduction of greenhouse gas emissions; and*
- 3| *The Province is responsible for coordinating the planning and delivery of transportation services within the Mainland Southwest and Vancouver Island development regions, including the collection of data and the forecasting of travel trends and demands.*

These elements of a policy framework are essential to address the gap created by the establishment of BC Ferries as a commercial entity and the growth and complexity of the transportation needs of the metropolitan regions on the Salish Sea.

Suggested direction:

- 1|** *That BC Ferries give consideration in planning and delivering its services to the trends identified in this report, including:*
- 2|** *The continued aging and diversification of the population;*
- 3|** *Climate change, including an increase in severe weather events and sea level rise;*
- 4|** *The development and deployment of autonomous vehicle technology, faster digital communications and the electrification of vehicles; and*
- 5|** *The shifting of attitudes regarding transportation from the ownership and use of a vehicle to mobility as a service.*
- 6|** *That the provincial government initiate and support an ongoing process of “joined-up planning” for transportation in the Mainland Southwest and Vancouver Island development regions that gives emphasis to the facilitation of alternatives to the private automobile, including opportunities for “whole trip” planning for passengers, the use of alternative vehicle formats such as “robotaxis” and opportunities for the development of ferry and road infrastructure that can offer better passenger connections to other modes within the urban regions. Examples of what could be examined include new or relocated ferry terminals, reconfigurations of service to respond to the growth of population south of the Fraser River and consequent amendments to the routes and service provisions of the contract between BC Ferries and the Province.*
- 7|** *That, as a first step, the provincial government initiate a program of data collection on passenger travel between the Mainland Southwest and Vancouver Island development regions to assist in providing a more seamless service for all transportation system users.¹⁰⁵*

These are useful elements and suggestions which will hopefully help inform a new provincial policy framework and future directions for coastal transportation, particularly the more metropolitan regions of the coast and the Salish Sea area.

The North Coast and more rural regions are addressed in other parts of the consultant’s report. The Province clearly has an equal responsibility for transportation planning in the north as in the south, but issues like land use and the distances travelled by ferry users are different in each area and need to be approached differently when a provincial vision is developed.

Once the Province determines provincial objectives for a diversity of transportation choices, basic levels of service, fair and equitable treatment of users and the reduction of greenhouse gas emissions, it should enshrine its new vision in the Coastal Ferry Act. As appropriate, it should endeavor to incorporate the new objectives within the contract as well.

¹⁰⁵ Future Needs and Opportunities in Coastal Transportation, Ken Cameron Inc. May, 2018. pages 31 and 32

6.2 | CLIMATE ACTION

The primary Greenhouse Gas (GHG) reduction strategy of BC Ferries is to steadily replace diesel fuel with liquefied natural gas (LNG). The company entered into a 10-year LNG supply agreement with Fortis BC¹⁰⁶ in 2015 and has consequently built or converted vessels to enable dual use of LNG and diesel. This is reducing carbon emissions by 10 to 15% on the vessels that are able to use LNG. However, natural gas is obviously still a fossil fuel so carbon is emitted when it is burned. The other incentive for increased use of LNG is that it lowers fuel costs for the company compared to the use of diesel. An additional effort to reduce GHG emissions was the introduction of the *Baynes Sound Connector* cable ferry service to Denman Island. The company also intends to make greater use of electric propulsion and enhanced battery storage for new shuttle class vessels (i.e. the replacement for vessels like the *Bowen Queen*) but has not yet launched a major feasibility study of the possibilities of fully electric vessels.

All the steps that have been taken are positive and are making a difference but are not yet aggressive enough given the seriousness of the climate change crisis and the targets in the provincial Climate Leadership Plan.

As part of this review, Ecopath Planning was commissioned to prepare a climate action analysis of the coastal ferry service. That report is attached as Appendix 9.3.

That report makes a number of specific recommendations within the context of a climate coordination report jointly prepared by most of the Auditors General of Canada.¹⁰⁷

¹⁰⁶ "Fortis BC finalizes LNG supply agreement with BC Ferries to fuel new vessels", Fortis BC news release. February 2, 2015 <https://www.fortisbc.com/MediaCentre/NewsReleases/2015/Pages/FortisBC-finalizes-LNG-supply-agreement-with-BC-Ferries-to-fuel-new-vessels.aspx>

¹⁰⁷ Perspectives on Climate Change in Canada: A Collaborative Report from Auditors General, March 2018. http://www.oag-bvg.gc.ca/internet/English/parl_otp_201803_e_42883.html

ISSUE:

Electrification of Ferry Vessels

Given the urgent need to reduce carbon emissions, there is increasing interest in electrification of ferries.

In 2014 Sweden was the first country to operate an electric passenger-only ferry, followed in 2015 by Norway with the first electric vehicle ferry. Results for the Norwegian electric ferry have been impressive with a 95% reduction in CO₂ emissions and an 80% reduction in costs. The battery system on the Norwegian ferry is provided by Corvus Energy of British Columbia. Based on its initial success, the Norwegian Parliament recently directed that by 2026 all ferries operating in its fjords must be electric.

Recently, the Washington Department of Transportation announced that it has begun to study the feasibility of converting three of its largest vessels to battery power within the next two years, pending government funding.

BC Ferries has begun the process of electrification but is proceeding cautiously, in part because it is heavily invested in conversion to LNG. Dual fuel vessels using both LNG and diesel will save BC Ferries money compared to diesel only, but there is debate about the extent to which LNG meaningfully reduces carbon especially when methane from natural gas production is taken into account.

At least 8 BC Ferries routes are under 30 minutes in duration so are good candidates for electric ferries. In 2012 the company installed a hybrid battery system on its newly retrofitted *MV Tacheq*, which serves the Quadra to Cortes Island route, and several of its vessels use diesel-powered electric drive. The next two "Island" class minor vessels now under construction in Romania will be hybrid diesel-electric and will use Corvus battery systems. They will be designed for expansion to fully electric battery banks when shore power and technology permits. The cable ferry to Denman Island is three times more fuel efficient than a conventional diesel ferry and the new major vessels coming to the fleet by 2020 will be hybrid diesel-electric.

BC Ferries notes that European leaders in electric ferries enjoy substantial financial support from their governments for electrification and argues it is taking a risk managed approach to clean technology. The B.C. government may wish to consider financial incentives as well but, in the meantime, BC Ferries should undertake a comprehensive feasibility study on additional options for electrification of its fleet, including larger vessels. As well, the provincial government should ask BC Hydro to prioritize transmission of sufficient firm power to ferry terminals to support future electrification of the fleet.

The more detailed recommendations from Ecopath Planning are summarized under the following broad categories:

“Taking the Auditors General’s findings into account, BC Ferries seems to need three things to act effectively in the public interest with regard to GHG emissions:

- 1| *A clear mandate from Government. For example the Coastal Ferry Act could be amended to allow the Commissioner to consider the public benefit in reducing GHG emissions, and/or the Coastal Ferry Services Contract could be similarly amended.*
- 2| *A way to fund GHG reduction initiatives and actions. For example, incentives provided by Government (through a Coastal Ferry Services Contract amendment or separately) and/or revisions to the Coastal Ferry Act to provide authority to take actions beyond what would be a normal commercial approach.*
- 3| *A coordinating agency with the authority needed to get multiple provincial ministries and agencies working in concert, as well as having the resources to provide funding for significant initiatives and incentives.”*

The detailed recommendations from Ecopath Planning are worthy of consideration and will hopefully assist both BC Ferries and the provincial government to make it a higher priority to reduce carbon emissions from the coastal ferry system.

6.3 | REGULATORY FRAMEWORK

The Terms of Reference ask for examination of the price cap and regulatory model.

The BC Ferries Commissioner did a particularly good job of price regulation in Performance Term 4, bringing price cap levels to 1.9 per cent, which closely matches B.C. inflation. That said, it is worth considering whether the “light” approach to regulation taken by the Commissioner is sufficient, what alternatives there may be to price cap regulation, and whether there should be more formalized consumer involvement in the process.

While the price cap methodology worked well in the most recent performance term, it was arguably less successful in the first three performance terms, which saw skyrocketing fare increases that far exceeded inflation as well as sharp declines in ridership. The legislative changes following the 2012 review were helpful as were the challenging efficiency targets set by the Commissioner in the last performance term.

It does not seem warranted to either ask the BC Utilities Commission (BCUC) to take over economic regulation of ferry service nor to move to a BCUC style of hearings and testimony, as that form of regulation can be litigious and expensive. Rather, it is recommended that the current regulatory approach be a bit less “light” when it comes to communications, consumer advocacy, and the interests of communities.

COMMUNICATIONS

When it comes to public communications, the Commission currently relies almost exclusively on postings to its website as well as periodic notices to an e-mail list of citizens with an interest in the work of the Commission. This approach requires that people with an interest in ferry issues monitor the website closely to find out what's new. The BC Ferries Commissioner currently receives administrative support from the Ministry of the Attorney General. The Commissioner should work with that Ministry to develop a more robust communications plan that gives a lot more profile to the work of the Commission. At a minimum, news releases should be issued every time the Commission issues an order, renders a decision or releases a performance review. The Commissioner should also consider hiring dedicated communications support to better inform and involve the public in the work of the Commission.

Another helpful practice would be for the Commissioner to always write a comment or analysis regarding performance reviews done by consulting firms on the Commissioner's behalf. If the Commissioner simply posts a report by a consulting firm without comment, it may not be clear to the public that the consulting report is the final result of the review.

INDEPENDENT CONSUMER ADVOCATES

MNP LLP was asked to put forward options to strengthen the current regulatory system. Their regulatory review is included within the MNP report at Appendix 9.4.

The MNP report points out that it is common for utility regulation to be supported by independent consumer advocates that enable the interests of users to be formally represented in regulatory processes. New Jersey and Alberta are cited as examples of two jurisdictions which support such advocates.

MNP makes the following observation:

"The current regulatory process, in the absence of a public intervention and hearing process, has kept a light regulatory burden on both the Commissioner and BC Ferries, which is cost effective and efficient. There may be an option though, of introducing consumer advocacy groups and gradual public intervention to introduce a higher level of representation and transparency in the rate setting process. Further, while feedback from surveys and advisory committees is mandated by the regulator, the introduction of advocacy groups from different regions, industries or other segments would enable ongoing alignment of BC Ferries' services with the evolving needs of customers."

and then suggests:

"There is an opportunity to explore the introduction of a public hearing and intervention process to provide more transparency to the rate setting process while minimizing cost to the rate payers. As a first step, the government may consider the inclusion of consumer advocacy groups with provisions for representation from different constituent interests. Once consumer advocacy groups are established, the Province may then investigate the introduction of public intervention. This will, however, require a detailed study to better understand the costs and benefits of expanding a formal role for these stakeholders."

In the earlier discussion of Public Engagement at Section 4.2 of this report, it is suggested that the government consider re-establishing a Coastal Council to advise the Province in its public policy role and to supplement the local Ferry Advisory Committees established by BC Ferries. The intention of that suggestion is to create a public advisory council representing various interests with a stake in the entire coastal ferry system. The concept of independent consumer advocates for the regulatory process is different than either the Coastal Council or Ferry Advisory Committees, but it will be important to avoid overlap and duplication. There is merit in having both independent consumer advocates as part of the ferry regulation process as well as a Coastal Council but there should be further study of potential costs and benefits of each to avoid duplication.

REVENUE CAP REGULATION

The MNP report looks at cost of service regulation and performance based regulation before offering the option of revenue cap regulation as a potential alternative to the price cap system currently required by the Coastal Ferry Act. Revenue cap regulation limits the total revenue earned by monopoly firms in industries with limited competition.

MNP makes the following observation:

“Revenue caps are commonly used for regulated entities where costs tend to be relatively insensitive to year-over-year changes in throughput. However, separate adjustments are typically allowed for the occasional major capital investments that are required to maintain facilities and increase capacity.”

They cite examples of revenue cap regulation from Australia, Norway and Alberta and then suggest further study of the option of revenue cap regulation of the coastal ferry service:

“While there may not be a need at this time to revise the regulatory model, as BC Ferries expands its capital plan to replace an ageing vessel population, a revenue cap model can offer incremental benefits to the current price cap approach. We advise that an independent study by the province to explore this opportunity may be prudent.”

Price cap regulation worked well in Performance Term 4 but BC Ferries is a natural monopoly facing significant capital investment requirements over the next ten to twenty years. The B.C. government should do a more detailed study of the option of revenue cap regulation to see whether it may be a good alternative for the capital constrained coastal ferry service.

FUEL DEFERRAL ACCOUNT

As discussed in more length in section 4.9, BC Ferries administers a robust fuel hedging strategy to try to keep its fuel costs down in a volatile international market context. The company is also incrementally replacing diesel with cheaper liquefied natural gas and beginning to explore electrification options. All those strategies are implemented within the context of the fuel deferral account mechanism established under Section 41.1 of the Act. The fuel deferral account enables fuel surcharges and fuel rebates on terms established and overseen by the Commissioner. The Commissioner requires that the fuel deferral account be paid down at least once every performance term and this was done on March 31, 2018.

MNP examines fuel management in its report and finds the fuel deferral account to be a useful mechanism for a fuel dependent entity like BC Ferries. MNP says:

"Deferral accounts represent assets constituted by the deferring of costs incurred, which will be recognized in charges during subsequent fiscal years. Fuel deferral accounts are a common mechanism used by regulators to insulate against volatile commodity prices."

MNP examines the current fuel deferral mechanism and provides some international petroleum price projections which predict stable and possibly even declining international prices into 2019. MNP notes that the current fuel deferral approach is only revised every performance term and suggests:

"There are limited options that the Province can consider as it relates to BC Ferries fuel management as well as the recent development around fuel rebates. To provide greater insight to the Commissioner though, BC Ferries may be asked to submit a fuel management strategy on a more frequent basis than the current mandate of one submission at the onset of each performance term. This would allow the Commissioner to understand any changes in the strategy, based on rolling forecasts, that could impact BC Ferries costs and customer pricing. An annual or biennial approach would provide greater transparency and insight to both the Commissioner and BC Ferries."

The current review once per performance term is based on a Commissioner's order and is not a requirement of the Act, so moving to more frequent reviews of fuel management strategies would not require an amendment to the statute.

It is also worth noting that the current provisions of the Act empower the Commissioner to not only allow temporary fuel surcharges but also to require temporary discounts to reflect fluctuations in the fuel deferral account. If the provincial government believes from time to time that a temporary discount is warranted, it should consider making a submission to the Commissioner recommending this.

COST ALLOCATION

MNP also suggests revision of the current internal cost allocation methodology to take account of unregulated ancillary revenues:

- *"Currently, BC Ferries allocates both revenues and expenses across different routes and not across their regulated and unregulated business. Revenues generated through net retail (i.e., representing 90% of the non-regulated business) stood at close to \$55 million which is more than 9% of the total revenue generated through vehicle and passenger fares in fiscal 2017.*
- *While the revenue generated through the non-regulated business is a smaller portion of costs, there may be an opportunity to allocate shared services costs (e.g. Human Resources, Finance and other shared service functions) across the organization to more accurately reflect the financial performance of BC Ferries' core regulated operations and its unregulated operations. This would support growth or cost optimization initiatives with enhanced transparency of the related costs for assessments of return.*
- *As BC Ferries explores more non-regulated business opportunities, there is a need to have a robust shared services cost allocation model to ensure that an appropriate amount of cost is borne by the businesses that benefit from and drive the expenditures. This would allow for greater transparency of financial performance along with opportunities to assess resource optimization or business growth strategies. The current allocation approach across routes may not yield the detailed information needed to assign costs across different lines of business and services."*

Implementing this suggestion may not require an amendment to the Act, even though section 38 (3) currently states that: *“The Commissioner must not regulate ferry operators in relation to ancillary services.”*¹⁰⁸ The Commissioner does have the ability under section 46.1 to conduct performance reviews of ancillary services.

BC Ferries should consider revising its internal cost allocation methodology for shared service costs to take account of unregulated ancillary revenues.

COMMUNITIES AS FERRY USERS

The Coastal Ferry Act mandates the Commissioner to actively consider the interests of ferry dependent communities. The Act says the regulator is to balance the interests of ferry users, taxpayers and the financial sustainability of ferry operators. It defines “ferry users” as “... (a) ferry users and their families, (b) communities serviced by ferries, and (c) businesses that rely on or utilize ferry services...”¹⁰⁹ Given the crucial importance of BC Ferries and other ferry services to coastal communities, the Commissioner should place greater emphasis on the interests of ferry dependent communities. That means greater consideration of the economic and social implications of ferry decisions and the importance of the ferry service in connecting coastal communities. Examples of such a focus might include a review of the problems with North Coast service, in particular the cuts impacting Sandspit, or the range of delay and overload problems currently faced by the Southern Gulf Islands and Sunshine Coast.

PERFORMANCE REVIEWS

Performance reviews by the Commissioner are important and help identify or clarify issues of concern. The results of performance reviews done in a preceding performance term should be considered during each new performance term process. This may require an amendment to section 40 of the Act, which sets out the information the Commissioner is to consider during the price cap process. The Commissioner should actively seek public input on all performance reviews.

6.4 | IMPROVED COOPERATION BETWEEN THE PROVINCE AND BC FERRIES

The working relationship between BC Ferries and the provincial government needs to be improved.

The provincial government is by far the largest customer of BC Ferries and should be treated as such by the ferry operator. The Province now contributes more than \$200 million per year in service fees and other funding under the terms of the Coastal Ferry Services Contract (and \$2.7 billion in total by 2019/20), yet BC Ferries too often deals with the provincial government in a perfunctory or ad-hoc way.

As a consequence, various tensions between the Province and BC Ferries were evident during the course of the review.

There seem to be two main root causes for this. The first is the culture of the independent company, which resists influence by the government. The other is the fact that most British Columbians don't understand the complex governance model and naturally hold the elected government accountable for decisions that are actually made by BC Ferries.

¹⁰⁸ Coastal Ferry Act, section 38(3)

¹⁰⁹ Ibid, Definitions 1. Page 5.

Both parties need to reconcile themselves to those realities. So long as the regulated independence governance model is in place, BC Ferries will tend to try and protect that independence. Meanwhile, the government will be held accountable by ferry users and the general public for decisions of the company.

BC Ferries should be more cognizant of the fact that it is dependent on taxpayer funding for a very significant portion of its annual budget. It should take steps to adjust its Board and Executive culture to recognize that the taxpaying public rightly holds the government accountable for the funds expended for ferry services.

Unless the provincial government wishes to introduce legislation to reverse the model, both BC Ferries and the government need to do better to try to make it work.

More regular and formal communications would assist.

- The Minister should meet quarterly with the Chair of the Board of BC Ferries, as well as regularly with the provincial appointees to the BC Ferry Authority.
- The C.E.O. of BC Ferries and the Deputy Minister of Transportation and Infrastructure should meet at least monthly.
- Staff level meetings between the parties should have written agendas agreed in advance and - especially if decisions are made, or decisions are pending which impact the parties - formal records of decision should be shared confirming points of both agreement and disagreement.

Finally, since the Ministry of Transportation and Infrastructure has a leadership role in multi-modal transportation planning BC Ferries should ensure the Ministry is invited to participate in all BC Ferries processes or meetings which have the potential to impact the rest of the highway and transportation system.

6.5 | BC FERRY AUTHORITY

The BC Ferry Authority is the beneficial shareholder of BC Ferries. Currently, its only responsibilities are to fill vacancies on the Board of BC Ferries, and to approve the Executive Compensation Plan of BC Ferries.

Under the terms of the Act, its regulations, and the 2010 Protocol Agreement between the BC Ferry Authority and BC Ferries, there is a complex self-appointment process for filling vacancies on the Boards of both BC Ferries and the BC Ferry Authority.

The majority of the nine positions on the Ferry Authority Board (i.e. 4 of 9) are nominated from regional “appointment areas.” Two qualified candidates are nominated by the Authority from the “community at large.” One position is from the BC Ferry and Marine Workers’ Union leaving only two to be appointed by the Province through Order in Council. None of the members of the Board may hold elected public office of any type, including those from regional appointment areas. For those from regional appointment areas and the community at large, nominations are sought through advertising, engagement with regional districts, and targeted recruitment. One or more of the regional districts within an appointment area must support the nomination of a person from that appointment area. Appointments of new members are then made by the existing Board after consideration of the skills and background needed. Regional districts are given a background document to assist them in the process.¹¹⁰

¹¹⁰ Director Nominations Backgrounder, BC Ferry Authority, 2017. <http://www.acrd.bc.ca/cms/wpattachments/wpID502atID2531.pdf>

As for the Board of BC Ferries itself, the extant BC Ferries Board uses a skills matrix process to identify the type of new Director needed to fill a vacancy. Targeted recruitment of potential Directors is done and a recommended name, or names, are put before the BC Ferry Authority Board for ratification. The BC Ferry Authority does not hire recruitment consultants itself but rather relies on the services Board to do that and to put forward suggested names for its consideration.

The 2009 Comptroller-General's report on governance of BC Ferries recommended strengthening the role of the Authority and called for the Authority to fulfill the normal functions of shareholders including providing broad strategic direction to the Board of BC Ferries. The Comptroller-General said the Authority needed to maintain independence from the Board and management.¹¹¹ Those were good recommendations but the 2010 Protocol Agreement, which is still in place today, gives the Authority only a limited role and certainly does not empower it to provide broad strategic direction to the Board of the services company which it appoints.

Given the very large sums of taxpayer dollars provided to BC Ferries each year, and in aid of the general public interest, the Board of the BC Ferry Authority should have more provincial appointees and should operate more independently from the Board of BC Ferries. It should be possible to make these changes while still retaining the independent regulated utility governance model so long as the provincial government does not have a majority of appointees on the Authority and is therefore not in control of it.

Recommendations:

- The Coastal Ferry Act be amended so that the two BC Ferry Authority positions now designated for the "community at large" are replaced with at least one and possibly two additional Order in Council appointees. Even if both at large positions were appointed by Order in Council, five of nine Directors would still be appointed through the current process and provincial government appointees would remain in the minority.
- BC Ferry Authority Directors from regional appointment areas should provide periodic reports on the work of the Authority to their local regional districts.
- The BC Ferry Authority should consider term limits for those it appoints to the Board of BC Ferries.
- In the past, two different Directors with trade union backgrounds were appointed to the Board of BC Ferries. To help add a diversity of perspectives to the Board of BC Ferries, the BC Ferry Authority should give consideration to filling a future vacancy with another trade unionist.
- The BC Ferry Authority should give consideration to creating its own audit committee.
- In order to strengthen the link between regional communities and the Authority the provincial government should consider the option of permitting municipal elected officials to be appointed from regional appointment areas.

¹¹¹ Report on Review of Transportation Governance Models, Office of the Comptroller General, Ministry of Finance. October 2009, pages 16 and 17.

- The BC Ferry Authority should engage its own search consultants and consider its own nominees for the Board of BC Ferries in addition to those suggested by the Board of BC Ferries. The BC Ferry Authority should provide broad strategic direction to the Board of BC Ferry Services Inc., bearing in mind the public interest in an effective and accessible coastal ferry service.
- The Protocol Agreement should be revised to support the changes listed above.

6.6 | COASTAL FERRY SERVICES CONTRACT

The 60 year Coastal Ferry Services Contract between BC Ferries and the provincial government is the means by which both regulated and unregulated ferry routes and services are defined and paid for. It is amendable by mutual agreement.

While the contract defines routes and services in some detail, it is silent on other aspects of the public interest in ferry service.

The contract has since 2003 required Customer Satisfaction Surveys. That is an example of the type of additional requirement which the parties could consider including if there is mutual willingness to do so.

After deciding on a new provincial vision for coastal ferry services, the provincial government should endeavor to amend the contract in order to incorporate additional public interest aspects. The contract could provide more detail about the basis upon which provincial financial contributions are being made.

Some examples could include:

- Additional service metrics beyond the customer surveys
- Provincial greenhouse gas reduction targets
- Community benefit goals, such as employment equity or regional development
- Employment and economic development objectives
- Additional capacity for foot passengers
- Scheduling

6.7 | LOCAL GOVERNMENT

Local governments should be given the ability to voluntarily contribute to the cost of local ferry services. This could be done through giving municipalities additional tax room to levy a special ferry services charge (similar to the way tourism strategies are currently funded by local hotel taxes) or by local governments simply choosing to pay for particular sailings in support of local needs like transport of sports teams.

Municipalities are naturally concerned that such options would be the “thin edge of the wedge” towards downloading of additional ferry costs on to the local level. However, in the absence of such a change, local governments are left to simply try and lobby for special sailings or to have local needs met. This is not often very successful.

The provincial government should meet with the Union of BC Municipalities to discuss what local governments might be willing to accept in this regard. The key caveat is that any additional local funding contributions should be voluntary and done in order to support specific incremental local needs.

7

RECOMMENDATIONS



The following recommendations respond to the key questions in the Terms of Reference.

Are contracted ferry services being provided in a manner that supports the public interest?

A | PUBLIC INTEREST

- 1| The Coastal Ferry Act should be amended to include a definition of the public interest in coastal ferry service. This should build on the statement in Budget 2018 that the service is an essential part of the provincial highway system.
 - The definition should reflect the fact that not-for-profit, publicly funded, legislated, and regulated coastal ferry service is in the public interest because it: connects and supports communities; brings families together; serves diverse passenger needs; helps build and strengthen the economy; moves goods reliably; and supports numerous economic sectors such as agriculture and tourism.
 - It is in the public interest for coastal ferry service to be reliable, affordable, resilient and efficient. Coastal ferry services should be planned and implemented within the context of a broader multi-modal transportation network and should help meet provincial goals such as reducing greenhouse gas emissions and building the economy.
 - The public interest definition should inform the development of an integrated provincial vision and policy framework for coastal transportation.
 - If the government chooses to continue with the current regulated governance model it should take proactive steps to help the public better understand how the model works

B | OPERATIONS

2| Safety:

- Through the SailSafe program, additional mechanisms should be put in place to ensure every employee of BC Ferries feels secure in raising all safety related matters without fear of discipline.
- In its 2006/07 Annual Report, BC Ferries committed to conduct a comprehensive operational safety review every five years, but this has not been done. A comprehensive operational safety review should be done now and every five years into the future.

3| Human Resources:

- BC Ferries should develop a more comprehensive employment equity strategy focused particularly on recruitment of women and indigenous people. As a first step, the company should track data on the number of BC Ferries workers who are of indigenous descent and should develop similar information on the numbers of women, younger workers and other underrepresented groups in its workforce.
- BC Ferries should enhance its engagement with front line workers and the BC Ferry and Marine Workers' Union regarding new vessels as well as the design, maintenance and operation of ferry services.

4| Public Engagement:

The provincial government should establish a broadly representative independent advisory council to provide system-wide advice on coastal ferry services and related transportation issues. The advisory council should include representation from coastal business, labour, municipalities, and First Nations. The advisory council should be independent of both the provincial government and BC Ferries. It should include some representation of communities served by unregulated ferry routes as well as the Ferry Advisory Committees of BC Ferries.

5| Executive Compensation:

- The Board of BC Ferries should consider steps (such as red-circling) to restore a target differential of 15 per cent between the CEO and the next highest paid Executive Vice-President. When it next approves an Executive Compensation Plan, the BC Ferry Authority should ensure appropriate compression between the CEO and the Vice-Presidents reporting to the CEO.
- The next Executive Compensation Plan of the BC Ferry Authority should include information on all Vice-Presidents and not only those V.P.s deemed to be Executive Vice-Presidents.
- The next Executive Compensation Plan should include ferry companies such as Marine Atlantic and Québec's Traversiers (STQ) in its list of Canadian comparators.
- The next Executive Compensation Plan should include B.C. Deputy Ministers within its list of B.C. public sector comparators.
- There are no marine or shipping comparators in the B.C. public sector. If the government wishes to accept the recommendation of BC Ferries regarding marine and shipping comparators, it will need to establish a separate non public sector comparison requirement in the Act. This is not recommended. An alternative would be for the BC Ferry Authority to ensure marine and shipping companies are included in the list of Canadian comparators.

- While it is understandable that a decision on the most recent amendments to the Articles of the company has been deferred pending this review, in future the provincial government should ensure its decisions about proposed Article amendments are made in a timely way. If there are concerns about proposed Article amendments, those should be brought to the attention of the BC Ferry Authority immediately. A decision on the 2016 Article amendments should be made as soon as possible after this review has been received and considered by the government.
- The current post-retirement salary arrangement for the CEO is problematic and should not be included in future CEO contracts. The Board of BC Ferries should ensure any future post-retirement contract with former CEOs is in the form of a regular non-pensionable consulting contract with specific deliverables and work plans. Any such arrangement should be reported in the annual Executive Compensation Disclosure of the company.

6| **Innovation and Business Development Division:**

- The new Innovation and Business Development Division of BC Ferries should establish a robust business case process including full risk assessment of any proposed projects or initiatives.
- B.C. Ferries should not initiate multi-modal or multi-agency transportation planning. The Ministry of Transportation and Infrastructure should have lead responsibility for all multi-agency transportation planning initiatives.

7| **Service reliability:**

- The current BC Ferries fleet is insufficiently resilient. BC Ferries needs more spare vessel capacity. Additional spare vessels should be an important consideration in future capital planning.
- The provincial vision for coastal transportation should address the reduction of sailing waits as a public policy goal.

8| **Reservations and flexible fares:**

- While flexible fares are conceptually a good way to smooth out demand, BC Ferries and the BC Ferries Commissioner should ensure there is no use of “surge pricing” and that the highest current fares for car and driver do not increase as a result of the new system.
- As fares are likely to change with introduction of the new fare flexibility strategy, the BC Ferries Commissioner should continue to closely monitor implementation of the new reservation and flexible fare system to ensure total fares charged remain within the price cap and customers are well served.

9| **Information technology:** The automated customer experience and fare flexibility information technology initiatives of BC Ferries have faced significant schedule and budget challenges. The Board of BC Ferries and the BC Ferry Commissioner should continue to closely monitor cost, schedule and system integration issues as these initiatives are implemented.

10| Shipbuilding, maintenance and repair:

- The B.C. government should assess the potential costs and benefits to the B.C. economy each time BC Ferries builds or retrofits a vessel overseas. This information should then be made available to the general public.
- The BC Ferry Commissioner should utilize Multiple Account Evaluation methodologies when doing Section 55 reviews and otherwise assessing capital project proposals.
- The provincial government should develop a more comprehensive strategy to support the B.C. shipbuilding sector. Such a strategy should continue the current focus on skills training but should also include elements such as financing, research and development, technological adaptation, access to new markets, bid development assistance, and new design resources for B.C. shipyards.
- The B.C. government should do a sectoral analysis of the B.C. ship repair industry and develop initiatives which support current and potential dry docks and new entrants to the business.
- The B.C. government should decline to support the proposal from the Canadian Ferry Association to immediately eliminate the import duty on vessels repaired outside of Canada.

11| **Peak season:** A number of Ferry Advisory Committees have recommended extension of the peak season. BC Ferries should give serious consideration to commencing the peak season at the Easter long weekend and ending it at the Thanksgiving long weekend.

12| **Livestock:** BC Ferries should review its policies regarding the loading of livestock and should change its online reservation system to prevent long waiting times for customers transporting livestock.

13| **Accessibility:** The Accessibility Committee of BC Ferries is doing good work but the company could still make accessibility a higher priority, especially given the aging of the population and increased foot passenger traffic. Consideration should be given to greater use of airport style “golf cart” services to help physically challenged passengers traverse lengthy terminal walkways, ensuring consistent functioning of elevators on board vessels, and avoiding the steep stairway design of the current Salish vessels.

14| **Electric vessels:** BC Ferries has taken some good initial steps towards use of electric propulsion, hybrid electric power and battery storage, particularly for Salish and Island class vessels. Still, more could be done. BC Ferries should undertake a comprehensive feasibility study on options for electrification of its fleet, including larger vessels. As well, the provincial government should direct BC Hydro to ensure there is transmission of sufficient firm power to ferry terminals to support future electrification of the fleet.

15| Climate action:

- BC Ferries needs to be an integral part of the provincial Climate Leadership Plan. BC Ferries should participate in all provincial planning tables regarding transportation sector greenhouse gas reductions.
- The Coastal Ferry Act and Coastal Ferry Services Contract should mandate BC Ferries to meet provincial greenhouse gas reduction targets. Likewise, the Commissioner should be mandated to take account of the public benefits of coastal ferry greenhouse gas reductions.

C | FINANCE

- 16| **Federal funding:** The B.C. government should ensure that enhancement of the annual federal ferries grant and new federal capital funding for ferries continue to be intergovernmental priorities.
- 17| **Administrative costs:** It is recommended that the BC Ferry Commissioner update the 2015 efficiency performance review given the trend of steadily increasing administration costs at BC Ferries.
- 18| **Risk:** BC Ferries should add 'vessel or fleet condition' risk to its list of business risks to be managed.

What changes to the price cap and regulatory model would ensure the ferry system is working as efficiently and effectively as possible for all British Columbians; and, in particular, for the ferry users and communities who depend on this essential service?

- 19| **Price cap model:** Price cap regulation worked well in Performance Term 4 but BC Ferries is a natural monopoly facing significant capital investment requirements over the next ten to twenty years. The B.C. government should do a more detailed study of the option of revenue cap regulation to see whether it may be a good alternative for regulation of the capital constrained coastal ferry service.
- 20| **Cost allocation:** BC Ferries should consider revising its internal cost allocation methodology for shared service costs to take account of unregulated ancillary revenues.
- 21| **Independent consumer advocates:** The government should establish independent consumer advocates for the coastal ferry regulation process. These would focus on the regulatory process only so would not be the same as either a coastal advisory council or Ferry Advisory Committees.
- 22| **Fuel deferral accounts:** Fuel deferral accounts are a reasonable mechanism for managing the volatility of international fuel prices; however, the BC Ferries Commissioner should review fuel management strategies more frequently than once every performance term.
- 23| **Public communications and involvement:** The Commissioner should: actively seek public input on all performance reviews; implement a stronger communications plan in order to communicate more regularly with the public; and write a commentary on every performance review.
- 24| **Section 55 capital reviews:** In addition to its Performance Term 5 submission, the provincial government should make submissions on Section 55 reviews in order to provide comment on how proposed capital projects relate to the provincial vision for coastal ferry service. The Commissioner should actively seek public input on Section 55 reviews.
- 25| **Term of appointment for the Commissioner:** The current appointment term for the Commissioner is a minimum of six but not more than eight years. This is quite lengthy. The Province should consider whether a term of between four and six years would be more appropriate.
- 26| **Unregulated routes:** As part of the process of developing a transportation vision for the coast, the Province should assess whether or not any of the existing unregulated routes should become regulated.

- 27| **Additional or alternative service providers:** Sections 38(1)(c) and 69 of the Coastal Ferry Act should be repealed. Section 45.1(2) is consequential to Section 69 so if Section 69 is repealed, then section 45.1(2) will need to be amended as well.
- 28| **Commercial Approach:** Section 38(1)(d) should be repealed.

What opportunities and actions are recommended to enhance ferry service delivery and/or reduce costs without impacting existing service?

- 29| **Provincial public policy framework:** The Province should clarify that coastal transportation services are part of its core responsibility to facilitate the movement of people, goods and services within British Columbia. Even though BC Ferries is an independent regulated company, the services it provides by contract to the Province are a central part of the Province's responsibility so should be delivered as efficiently and effectively as possible within a framework provided by the Province. Such a framework should include provincial objectives for a diversity of transportation choices, basic levels of service, fair and equitable treatment of users and the reduction of greenhouse gas emissions. This framework should be reflected in the Coastal Ferry Act and enunciated in the Coastal Ferry Services Contract.
- 30| **New services and connections:** Based on the provincial public policy framework, and after a process of multi-agency transportation planning, the Province should identify potential new ferry services or terminals that respond to changed settlement patterns, support other transportation modes and/or reduce pressure on roads. Examples could include passenger only service from the Sunshine Coast to downtown Vancouver; a new terminal at Iona Island near YVR to support an integrated transportation hub; a service between the Saanich Peninsula and Cowichan Valley; improvements to the Mill Bay Ferry; or a passenger only service from Colwood to Esquimalt.
- 31| **Improved cooperation between the B.C. government and BC Ferries:**
- The Minister of Transportation and Infrastructure should meet quarterly with the Chair of the Board of BC Ferries, as well as regularly with the provincial appointees to the BC Ferry Authority. The CEO of BC Ferries and the Deputy Minister of Transportation and Infrastructure should meet at least monthly.
 - Staff level meetings between the parties should have written agendas agreed in advance – especially if decisions are made, or decisions are pending which impact the parties – and formal records of decision should be shared confirming points of both agreement and disagreement.

32| BC Ferry Authority:

- Sections 5, 6, 7 and 11 of the Coastal Ferry Act should be amended so that the two BC Ferry Authority positions now notionally designated as 'at large' are replaced with at least one and possibly two additional Order in Council appointees. Even if both at large positions were appointed by Orders in Council, five of nine Directors would still be appointed through the current process and provincial government appointees would remain in the minority.
- BC Ferry Authority Directors from regional appointment areas should provide periodic reports on the work of the Authority to their local regional districts.
- The BC Ferry Authority should consider term limits for those it appoints to the Board of BC Ferries.
- Directors with trade union backgrounds were twice appointed to the Board of BC Ferries in the past. To help add a diversity of perspectives to the Board, and the BC Ferry Authority, BC Ferries should consider filling a future vacancy with another trade unionist.
- The BC Ferry Authority should review the option of creating its own audit committee.
- In order to strengthen the link between regional communities and the Authority, the provincial government should consider the option of permitting municipal elected officials to be appointed from regional appointment areas.
- The BC Ferry Authority should engage its own search consultants and consider its own nominees for the Board of BC Ferries in addition to those suggested by the Board of BC Ferries.
- The BC Ferry Authority should provide broad strategic direction to the Board of BC Ferry Services Inc., bearing in mind the public interest in an effective and accessible coastal ferry service.
- The Protocol Agreement should be revised to support the changes listed above.

33| **Performance Term 5:** The main objective of Performance Term 5 should be to again keep the price cap at or below the provincial inflation rate as well as to set a challenging efficiency target which reduces costs. Additional spare vessels and resilience of the fleet will be important considerations in the final capital plan but since the cost of every additional vessel puts upward pressure on fares there will need to be a careful balancing of fleet resilience, growing demand, improved efficiency and fare affordability when determining the next cap.

34| Customer complaints:

- The appeal process for unsatisfied BC Ferries complaints should be strengthened. Currently, escalated complaints go first to the Director of Customer Care and, if unresolved, to the Executive member in charge. There should be an opportunity for further escalation to the CEO.
- Summary customer complaint reports (i.e. "Feedback and Engagement Reports") should be posted not only on the website of the Commissioner, but on the BC Ferries site as well. Summary information on resolution of complaints should also be included in the Annual Report of BC Ferries.
- BC Ferries is not a public agency, so the Ombudsperson Act does not apply to either the BC Ferry Authority or BC Ferries. Bearing in mind the independent governance model, an alternative would be to amend Section 45.2 of the Coastal Ferry Act to create an independent customer complaint appeal mechanism overseen by the Commissioner. Some form of independent appeal process overseen by the regulator would encourage outcome-based resolution of customer complaints and thereby improve accountability of the coastal ferry system.

35| Optional local government funding:

- Local governments should be given the ability to voluntarily contribute to the cost of local ferry services. This could be done through giving municipalities additional tax room to levy a special ferry services charge (similar to the way tourism strategies are currently funded by local hotel taxes) or by local governments simply choosing to pay for particular sailings in support of local needs like the transport of sports teams to tournaments.
- If the provincial government is supportive of this change, it should work with the Union of BC Municipalities to develop mechanisms to ensure such funding is strictly voluntary and is only for incremental services beyond those provided through the Coastal Ferry Services Contract.

36| **North Coast:** Evening service should be restored as soon as possible for Route 26 between Skidegate and Sandspit. This will require resuming the previous two 8-hour shift schedule which was in place prior to the cuts of 2014. Ideally, the costs of this service resumption should be shared between BC Ferries and the Province given that BC Ferries is currently enjoying healthy net revenues.

37| **Reservations for Transportation Assistance Program travellers:** As it is increasingly necessary to make a reservation in order to secure a spot on many ferry routes, reservation fees should be waived for ferry travellers utilizing the Transportation Assistance Program (TAP) to attend specialist medical appointments. Such a change may need to be negotiated by the Province and BC Ferries, but the most reasonable thing would be for BC Ferries to pick up the cost of waiving the fees since the fare for medical travellers is already being paid by the provincial government.

38| Further Coastal Ferry Act amendments:

- Sections 64.1 and Section 40 should be amended to reduce the time for approval of the long term capital plan. The current requirement for submitting a capital plan 18 months prior to the beginning of a performance term should be reduced to 12 months prior.
- The current requirement in Section 64.1 (3) for the Commissioner to both pre-approve and approve the capital plan is redundant. The pre-approval step should be removed.
- Section 40 (4) should be amended to reduce the time for final approval of the price cap to three months from the current six.
- At present, only “executive vice-presidents” and the CEO are included in the definition of “executive” in Section 1. This should be amended so that “executive” includes all vice-presidents and other actual members of the executive committee.
- The provincial government should consider amending the definition of “qualified individual” in Section 1 to enable municipal elected officials to be appointed from regional appointment areas.

8

CONCLUSION



The coastal ferry service is an integral component of B.C.'s highway and transportation system. It is an essential lifeline which connects numerous coastal communities to the rest of the province. It is also a vital part of the provincial economy. Good quality and accessible marine transport is critical for those who use ferry services, but is also crucial for the province as a whole. Bearing all that in mind, a key objective of this review was to consider whether the current independent governance model is operating in the public interest. As it turns out, this is not a simple question to answer.

Although this report has identified areas for improvement, BC Ferries is on the whole a well run company. The employees and managers of BC Ferries are committed to providing a safe, reliable service for the coast and work hard at it every day of the week. The members of the BC Ferries Executive are competent and experienced and the Board of Directors takes seriously its obligation to provide good strategic direction and oversight.

For its part, the provincial government has stepped up with significant and steadily increasing funding for ferry operations. Budget 2018's fare affordability initiative was a significant investment which, for the first time in many years, actually reduced fares for the minor routes.

Whether one supports the current governance model or not, it is generally operating as intended by those who designed it. BC Ferries meets its contractual service commitments and makes capital investments to support long-term provision of the service. The debt for those capital improvements is managed internally by BC Ferries, so is not a liability for the Province.

That said, the complexity of the model makes public accountability a challenge. Few British Columbians understand the complicated governance system so citizens and ferry users tend to hold the provincial government accountable for decisions that are actually made by an independent company that the government does not direct. This in turn can lead to conflicts between the government and the ferry operator.

More fundamentally, the model can make it difficult for the provincial government to implement its public policy objectives for coastal transportation. To do so, the provincial government must either amend the law, attempt to negotiate changes to the Coast Ferry Services Contract, or simply rely on good will from BC Ferries.

Any changes to the contract must be mutually agreed by both parties. For that reason, a service contract is a cumbersome instrument for the implementation of public policy. For instance, the government may wish BC Ferries to align its operations with broader government objectives such as developing the provincial economy, supporting the socio-economic interests of coastal communities, or reducing greenhouse gas emissions but if those objectives are not consistent with the company's perspectives on its role then the company can decline to do so. In such cases, the internal corporate interests of the company may take precedence over the broader public interest.

Whether the current model is continued or revised, it should be a priority for the provincial government to enunciate clear public policy goals and a vision for coastal transportation which provide strong guidance for the future of coastal ferries. The Coastal Ferry Act should be amended and, to the extent possible, the service contract renegotiated in order to implement that vision.

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9

APPENDICES



9.1 | PREVIOUS REVIEWS

The terms of reference for this comprehensive operating review direct that previous reviews of coastal ferry services be examined.

This section summarizes the most important findings and recommendations of previous provincial reviews of British Columbia Ferry Services Inc. and coastal ferry services subsequent to passage of the Coastal Ferry Act (the Act) in 2003. Over the past 15 years the Province initiated 14 reviews of governance, performance and safety by the Office of the Auditor General, the Office of the Comptroller General, and the BC Ferries Commissioner. An additional review on operational safety was initiated by BC Ferries. As a consequence of these reviews, regulatory systems have been strengthened and there has been greater attention to the interests of ferry users.

TIMELINE

2003	Coastal Ferry Act
2006	Changing Course – A New Direction for British Columbia’s Coastal Ferry System. Office of the Auditor General
2007	A Review of Operational Safety at British Columbia Ferry Services Inc. Office of the Auditor General (commissioned by BC Ferries)
2009	Report on Review of Transportation Governance Models. Office of the Comptroller General
2012	Review of the Coastal Ferry Act B.C. Ferry Commission
2013	Bill-47 Coastal Ferry Amendment Act
<i>As a result of rising fares, service cuts and financial challenges faced by BC Ferries, the provincial government initiated a series of consultations with coastal communities to discuss the future of ferry services and to obtain feedback on proposed cost saving measures.</i>	

2012 and 2013	Community engagement by the Ministry of Transportation and Infrastructure
<i>The 2012 amendments to the Coastal Ferry Act, authorized the BC Ferries Commissioner to conduct performance reviews of particular aspects of the operations of BC Ferries. Since then, the Commissioner has conducted the following reviews:</i>	
2013	Automated Customer Experience (A.C.E.) Review
2015	Performance Review of BC Ferries Vacations
2015	Performance Review of BC Ferries' Homeporting Arrangements
2015	Performance Review of the Efficiency of BC Ferries
2015	Performance Review of BC Ferries' Fuel Management
2015	BC Ferries Automated Customer Experience (A.C.E.) Program Review – Follow Up
2016	Performance Review of BC Ferries' Price Cap Compliance
2016	PricewaterhouseCoopers Analysis of BC Ferries' Drop Trailer Service
2017	BC Ferries' Annual Customer Satisfaction Tracking Survey
2017	BC Ferries' Comparative Fare Analysis
2018	Procurement Performance Review

AUDITOR GENERAL REVIEW (2006)

This review was aimed at assessing whether the transformation of BC Ferries from a Crown Corporation to an independent company met government's objective for the provincial ferry system. The reviewers concluded that the new governance structure had achieved its immediate purpose of separating the business decisions of the operator from political agendas. The review suggested that the Commissioner and the Ministry of Transportation should develop performance measures for the operator.

The report also noted several problems: 1) the interests of ferry users were not defined in the Act; 2) reporting on the new structure was fragmented as there was no single source of complete information on the ferry system, with each entity within the system issuing their own annual reports; and 3) despite the key regulatory role of the BC Ferry Commission, the Legislature had not responded to the concerns raised in all three reports issued by the Commission prior to the 2006 review.

Recommendations:

- Government should establish criteria for evaluating how well the coastal ferry system is achieving the objectives of the governance transformation and should conduct evaluations of that, at least once in every performance term, in order to determine when or if further changes to the Coastal Ferry Act should be made.
- The Ministry of Transportation should issue a summary report on the coastal ferry system.
- The Ministry of Transportation and BC Ferries should develop performance measures relating to the quality of service, as set out in the Coastal Ferry Services Contract.

AUDITOR GENERAL-OPERATIONAL SAFETY REVIEW (2007)

This review concluded that – overall – BC Ferries operates a safe ferry system and the company's management and staff are committed to safety of both passengers and BC Ferries personnel. The reviewers identified some areas where safety could be strengthened and BC Ferries committed to addressing those issues in a timely manner.

Recommendations:

- A safe marine transportation system should be a separate goal within the company's business plan with corresponding tactics, measures, and targets.
- Management should foster an organizational culture conducive to resolving safety concerns brought up by staff.
- The company should provide accident/incident investigation training to key personnel to improve investigations and strengthen training in the areas of bridge resource and crowd management.
- Finally, BC Ferries should ensure that its annual report includes specific information on the extent to which it has achieved its operational safety objectives.

COMPTROLLER GENERAL GOVERNANCE REVIEW (2009)

The purpose of this review was to determine whether the coastal ferries governance model allows for British Columbians to receive value for provincial funds while meeting the objectives for which the model was created. The reviewers found that the governance model should be improved to ensure that BC Ferries meets its public service mandate. With the exception of executive compensation, British Columbia Ferry Services Inc. operations were found to be well managed and reasonably effective. British Columbia Ferry Services Inc. operations had appropriate financial and management controls, cost containment and revenue generating strategies, as well as a customer service system. Compensation for the Executive and Board of BC Ferries was found to be significantly higher than the compensation paid by other public sector entities and the incentive structure for the Executive made bonuses easy to attain. The biggest concern raised was that the Board of BC Ferries set its own compensation without accountability to the B.C. Ferry Authority. The reviewers also noted that the Commission had been interpreting the principles of the Act and its regulatory role in a narrow way which resulted in prioritization of the interests of the ferry operator as opposed to ferry users.

Importantly, in an echo of the 2006 review by the Office of the Auditor General Review, the Comptroller General found that the emphasis on financial sustainability of the operator—rather than a balancing of interests of both the operator and users would undermine the long-term viability of the provincial ferry system.

Recommendations:

- strengthen the accountability of the company, its Board, and the B.C. Ferry Authority;
- end the practice of the B.C. Ferry Authority appointing its own members to the Board of British Columbia Ferry Services Inc.
- the B.C. Ferry Authority should have a mandate to protect ratepayers' interests and service levels while minimizing costs and maximizing benefits to taxpayers;
- the role of the BC Ferry Commission should include: protecting customer interests, commenting publicly on various aspects of British Columbia Ferry Services Inc. plans and operations, regulating reservation fees and any competitive services British Columbia Ferry Services Inc. provides, such as drop-trailer transport;
- the Province should explore the potential of having one Transportation Commission oversee both British Columbia Ferry Services Inc. and TransLink;
- make both British Columbia Ferry Services Inc. and the B.C. Ferry Authority subject to the Freedom of Information and Protection of Privacy Act; and,
- require British Columbia Ferry Services Inc. and the Commission to publicly release cost allocations by route, using major cost categories.

REVIEW OF THE COASTAL FERRY ACT, OFFICE OF THE BC FERRY COMMISSION (2012)

In 2012, the BC Ferries Commissioner was given a legislative mandate to conduct a comprehensive review of the Coastal Ferry Act and to recommend amendments to the Act to better enable the Commission to balance the interests of ferry users with the financial sustainability of operators.

A key conclusion was that the interests of ferry users were not defined in the Act and there were no provisions specifying how the Commissioner should best protect those interests. The methodology for determining price caps was found to be formulaic and tending to result in high fare increases. While the model was deemed to have achieved many of the initial goals set out for it (i.e., improve efficiency, remove "political" involvement from ferry operations, leverage private sector financing) it also had a negative effect on affordability.

The review concluded that no other example could be found internationally where the primary responsibility of the regulator was to put the interests of a monopoly operator before those of the public. In this way, not much had changed since 2009 when the Comptroller General came to a similar conclusion that the Act was perceived to primarily protect interests of the operator, rather than users.

At the same time, the Commissioner concluded that a light-handed approach to regulation is in the best interest of ferry users, taxpayers, and the operator because it is the most cost-effective approach and allows the company to manage its business most effectively. He argued that the price cap methodology provides the operator with the freedom to adjust specific prices without prior approval of the regulator, so long as the overall bundle of fares does not exceed the cap. More involved regulatory processes require more resources and can become a burden for the business being regulated. Any increase in the Commission's responsibilities will also increase its budget.

The Commissioner observed that, since the ferry system is costly, all stakeholders need to be part of the solution to keep costs down. Ferry users need to have realistic expectations about levels of service, and the operator needs to focus on cost control and revenue generation. Finally, the Province is responsible for defining the public interest in the transportation system and needs to have an ongoing role in providing financial support to

ensure the financial sustainability of the ferry operator. The Commissioner made 23 recommendations, and a number of them resulted into legislative amendments to the Act. Below are the main recommendations implemented through Bill 47 Coastal Ferry Amendment Act - 2012.

Recommendations:

- Section 1 added a definition of “ferry users” as ferry passengers and their families, communities and businesses that rely on or use ferry services.
- Section 38 amended the previous section on the role of the Commissioner so as to stipulate that the primary role of the regulator is to balance the interests of ferry users, taxpayers and the sustainability of the ferry operator. The former principle of “greater reliance on user pay” was eliminated.
- The previous prohibition of cross subsidization between major and other designated route groups was eliminated by repealing Section 41(1). More profitable routes may now subsidize less profitable routes.
- Section 46(1) authorized the commissioner to conduct reviews of the ferry operator's operations.

MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE - BC COASTAL FERRIES COMMUNITY ENGAGEMENT (2012)

The purpose of community consultations by the Ministry of Transportation and Infrastructure in 2012 was to engage with the public about financial challenges facing BC Ferries at that time. Public input was sought around two sets of issues: 1) how to achieve a provincial government goal of \$26 million in savings; and 2) what strategies should be pursued to achieve a long-term vision of connecting coastal communities in an affordable, efficient, and sustainable manner.

Key Themes Summary:

- Fares were felt to be generally unaffordable.
- BC Ferries should be treated as an essential part of the provincial highway system and should be funded by provincial taxpayers in the same manner as other provincial transportation modes.
- Options identified for increasing revenue and/or reducing operational costs included: improved tourism marketing; differential pricing; reducing labour, administrative and management costs; and alternative fuels.
- There was significant opposition to reducing service and increasing fares.

MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE - BC COASTAL FERRIES COMMUNITY ENGAGEMENT (2013)

The purpose of the 2013 community engagement process was to advise the public about financial pressures facing BC Ferries at that time and to seek public feedback about proposed measures to deal with those pressures. Feedback was sought about: the seniors’ discount, private passenger-only services, introducing gaming as an additional revenue source, and service reductions on routes with low utilization and significant annual shortfall.

Key Themes Summary:

- Service reductions were opposed because they would adversely affect various coastal residents and communities.
- BC Ferries should be treated as an essential part of the provincial highway system and funded through general provincial revenue.
- A socio-economic study was recommended to evaluate the impact of service reductions.
- There was skepticism about whether public input would be considered.
- Fares were felt to be generally unaffordable.
- Concern was expressed about the BC Ferries executive compensation plan, especially bonuses for managers
- Opposition was expressed to the proposed reduction in discounts for seniors

BC FERRY COMMISSIONER - PERFORMANCE REVIEWS

The Coastal Ferry Amendment Act - 2012 empowered the Commissioner to conduct periodic reviews of particular aspects of BC Ferries operations. The purpose of these performance reviews is to hold BC Ferries accountable with regard to its performance and by doing so to increase public confidence that the company is operating efficiently and in such a way as to keep ferry fares as low as reasonably possible. Since 2012, the Commissioner has conducted at least one performance review per year. The only areas these performance reviews do not cover are safety (which is federally mandated) and environmental protection (which is both federally and provincially mandated).

In general, the Commissioner's performance reviews have affirmed the efficiency and accountability of BC Ferries and when comparisons have been made with other ferry operators, BC Ferries has compared favourably. Out of eleven performance reviews only two concluded that certain aspects of BC Ferries operations require significant improvement: the Automated Customer Experience (ACE) Review (2013), and the Annual Customer Satisfaction Tracking Survey (CST) Review (2017).

BC Ferries was found to have satisfactorily addressed the recommendations of the 2013 ACE Review as concluded by a follow-up review in 2015. In contrast, the Commissioner decided the response of BC Ferries to the CST Review was insufficient so issued a formal Order in February of 2018. Order 18-01 identifies a number of specific concerns with the content, methodology and procurement of the CST survey which will necessitate significant changes in how customer satisfaction is tracked by BC Ferries in the future. BC Ferries was directed to provide the Commissioner with a plan for implementation of the Order. Since a number of the Commissioner's concerns pertain to sensible best practices (such as periodically re-procuring for survey services) it seems if BC Ferries had taken to heart the findings of the 2017 Review, a formal Order from the Commissioner should not have been necessary. Here is a summary of the findings and recommendations of BC Ferries Commissioner's performance reviews:

Table 9 | Summary of BC Ferry Commissioner Performance Reviews

REVIEW	DESCRIPTION	CONCLUSION	RECOMMENDATION
Procurement Performance Review conducted by EY, 2018	The review assessed procurement and tendering practices of BC Ferries.	BC Ferries was found to have solid procurement strategies that are aligned with the company's long-term capital vision. The reviewers feel that procurement policies of BC Ferries are consistent and supported by risk management strategies.	<ul style="list-style-type: none"> • Strategic planning can be enhanced by better demand planning for procurement. • Further efficiencies can be realized through investment in procurement technology
BC Ferries' Comparative Fare Analysis conducted by Pricewaterhouse Coopers (PwC), 2017	This review compared fares charged by BC Ferries with fares charged by similar ferry operators in North America, Australia, and Europe on long, medium, and short routes.	The review found that fares for BC Ferries' fares were not excessive in comparison with similar ferry operators worldwide (with or without applicable discounts).	None
BC Ferries' Annual Customer Satisfaction Tracking (CST) Survey Review conducted by MNP, 2017	<p>The review analyzed the annual CST survey that BC Ferries is required to conduct according to the Coastal Ferry Services Contract.</p> <p>The review prompted the Commissioner to issue Order 18-01, which, among other things, requires BC Ferries:</p> <ul style="list-style-type: none"> • to conduct CST surveys on at least five out of ten un-surveyed routes during 2018; • to obtain prior advice from the Commissioner on survey methodology; • provide evidence that commercial users are being surveyed; • to advise the Commissioner of the company's intentions regarding re-procurement of the CST contract prior to the 2019 survey 	The reviewer found that the current CST survey is limited in its representation of BC Ferries customers as it does not survey passengers on minor or northern routes. Also, commercial customers have been underrepresented in the survey.	<ul style="list-style-type: none"> • expand the CST survey to minor and northern routes; • survey commercial customers; • supplement the CST survey with other methods (ie. online surveys, community engagements, Ferry Advisory Committee proceedings) and to report on this in the Annual Report to the Commissioner; and, • provide more consolidated reporting of customer satisfaction tracking

Analysis of BC Ferries' Drop Trailer Service conducted by PwC, 2016	BC Ferries' compliance with the 2011 Drop Trailer Decision and the minimum allowed average tariff (MAAT) was analysed.	The review concluded that the average tariff per vessel-foot was above the MAAT in all quarterly instances of 2015. BCF was found to be in full compliance with Order 11-01 and Confidential Order 11-01A.	None
Price Cap Compliance Review conducted by PwC, 2016	The purpose of the review was to analyse the extent to which BC Ferries was compliant with the BCFC price cap.	BC Ferries proposed a number of changes to the price cap calculations for PT4. These changes were related to: <ol style="list-style-type: none"> 1 Advanced purchase strategies 2 Seniors' base price level 3 PT4 price cap reset The reviewers had no concerns about the proposed changes to the price cap calculation methodology for PT4.	None
BC Ferries Automated Customer Experience Program Review – Follow Up conducted by PwC, 2015	The purpose of this review was to assess changes to the Automated Customer Experience (ACE) program resulting from the 2013 Commissioner recommendations, and to assess the state of the ACE Program in 2015. The 2015 report contains the findings and recommendations of the follow-up assessment.	The review found that the ACE Program had made significant changes in almost all of the identified risk areas, and had substantially reduced the overall risk profile of the program. The ACE program was positioned to deliver the foundations for future change initiatives such as the Fare Flexibility (FF) and Digital Experience (DE) program.	<ul style="list-style-type: none"> • to ensure ACE leadership continuity, • to better align governance of the group of interrelated IT programs (ie. ACE, FF and DE)
Performance Review of The Efficiency of BC Ferries, 2015	<p>This review assessed the efficiency of BC Ferries in the following areas:</p> <ul style="list-style-type: none"> • operating, maintenance, and administration costs, • labour costs, • organizational design. <p>The review surveyed performance of BC Ferries for the period from 2009-2014.</p>	The report concluded that BC Ferries demonstrated good cost control while achieving high customer satisfaction and safety ratings. BC Ferries had a higher than average farebox recovery rate. Management, budgeting and internal financial controls were found to be conducted at a high level. Administration expenses had been reduced as a result of lower executive compensation and less overtime shifts which contributed to decreased labour costs. The review found that executive compensation at BC Ferries was comparable to other Crown corporations in BC.	None

Performance Review of BC Ferries' Fuel Management conducted by PwC, 2015	The report assessed fuel efficiency of BC Ferries.	The report concluded that BC Ferries had an appropriate system of fuel rebates and surcharges in comparison with entities operating in a similar market environments.	The review found that the method for hedging fuel costs used by BC Ferries was not best practice and the strategy did not result in the best value for users.
Performance Review of BC Ferries' Homeporting Arrangements conducted by PwC, 2015	The review considered the efficiency of BC Ferries' homeporting arrangements and whether there were any alternative arrangements that could improve homeporting efficiency.	The review concluded that homeporting arrangements were efficient. And that alternate homeporting arrangements should only be considered if major capital, labour or service changes are made for a route.	The review recommended that an improved homeporting policy be developed for new routes which can be used when major decisions about homeporting arise on existing routes.
Performance Review of BC Ferries' Vacations conducted by PwC, 2015	<p>The review assessed:</p> <ul style="list-style-type: none"> the business case for BC Ferries Vacations (BCFV); the reliability of systems used to measure the financial results of BCFV; cost effectiveness and contribution of BCFV to the overall financial results of BC Ferries; 	<p>The Review concluded that BCFV meets its goal of generating additional revenue for BC Ferries. The storefront location of BCFV in downtown Vancouver was deemed to be reasonable.</p> <p>There was a growing uptake by tourists and industry partners and the practice of offering hotel discounts was consistent with comparable operators.</p> <p>BCFV marketing assists coastal communities that do not have substantial marketing capabilities and thereby supports local tourist industries.</p>	None
Automated Customer Experience (Ace) Review conducted by PwC, 2013	The review assessed the ACE Program against key success criteria and made recommendations designed to strengthen program delivery and address risks associated with a number of program governance issues.	The review concluded that the ACE Program was aligned with the overall business strategy of BC Ferries. However, the computer systems of BC Ferries in place at the time of the review were not able to implement and support the Program. The management and communication system to oversee the implementation of ACE was found to be strong but needed to include both technical and business leadership.	<ul style="list-style-type: none"> to include the business side of management in the planning of ACE; to the ACE governance structure;

9.2 | FUTURE NEEDS AND OPPORTUNITIES IN COASTAL TRANSPORTATION

FUTURE NEEDS AND OPPORTUNITIES IN COASTAL TRANSPORTATION



May 2018

Ken Cameron Inc.

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EXECUTIVE SUMMARY

Since its inception in 1958, BC Ferries has performed an integral role in the province of British Columbia's core function of facilitating the movement of people, goods and services among the province's communities. Since its creation as an independent company owned by the provincial government in 2003, the corporation has focused on providing its services within a mandate set out in its 60-year contract with the province, which makes a contribution to the cost of the service through a "service fee" and other funding.

Today BC Ferries is an extensive operation offering primarily roll-on-roll-off services to 47 terminals on 24 routes with a fleet of 34 vessels. There are three types of routes:

- Major routes serving the Vancouver, Victoria and Nanaimo regions and points beyond;
- Minor southern routes serving smaller and island communities on the Salish Sea; and
- Northern routes serving widely separated communities on the North Coast.

The report offers comments on the use of the ferries by various modes, including car, transit and pedestrian, noting the dominance of car transportation at present. This information forms the basis for a discussion of the role of the ferry service within the context of the ongoing responsibilities of the provincial government for transportation, including coast transportation, within British Columbia.

A review of the ferries and their users summarizes the results of the corporation's performance monitoring in relation to standardized metrics, concluding that most aspects of performance are being met to the satisfaction of regulatory authorities. Data on current users indicate that the system has more female than male users and that the predominance of trips are for personal rather than business purposes, recognizing that a "personal" trip may be for necessary medical or educational reasons.

Looking forward, the report notes that population growth in the Mainland Southwest and Vancouver Island development regions is projected to continue at a steady rate, with population growth in the North Coast expected to be more modest. An examination of regional growth strategies in the two southern development regions indicates that strong emphasis is being given to alternatives to the private automobile, compact urban form and conservation of environmental resources. The effects of climate change, including extreme weather events and sea level rise, are important factors for operations such as BC Ferries.

Changing technologies have significant implications for the planning of ferry services. Key influences include rapid adoption of vehicle automation, vehicle electrification and faster and more ubiquitous digital communications. There is also evidence of an important shift in attitudes to transportation from the ownership and use of a vehicle to mobility as a service.

Given the complexities identified in the report and the status of BC Ferries as a commercial operating company, there is a continuing need for the provincial government to provide a policy framework for

Future Needs and Opportunities in Coastal Transportation

coastal transportation, demonstrating the role of the ferry service in meeting broader provincial policy objectives such as economic development, social equity and greenhouse gas emission reduction.

The final section on the report builds on this perspective by suggesting matters to which BC Ferries should pay attention in planning for the future and steps the provincial government could take to give effect to its policy interests in coastal transportation.

FUTURE NEEDS AND OPPORTUNITIES IN COASTAL TRANSPORTATION

1. INTRODUCTION

Scope and purpose

In April 2003, BC Ferries was transformed from a Crown corporation into an independent, commercial organization under the Company Act. BC Ferries is governed by an independent Board of Directors appointed by the B.C. Ferry Authority. The Authority acts as a “beneficial shareholder” holding the sole voting share in the company. The government does not appoint the majority of Ferry Authority directors and does not control the company.

In January 2018, the provincial government initiated a comprehensive operating review of the provision of coastal ferry service in British Columbia. It appointed a reviewer to conduct the review and submit a report by June 30, 2018. Since B.C. Ferries is an independent company regulated by the B.C. Ferries Commissioner, an important part of the context for the review is the broader public policy environment for ferry transportation on the coast. This report contributes to the review through an assessment of the current and projected dynamics of coastal transportation demand and the global, regional and local forces that can be expected to influence the demand for, and supply of, coastal transportation services for passengers and goods. Specifically, the report considers such factors as:

- Population growth and demographic change;
- Changes in the attitude to, and use of, transportation services;
- The impact of autonomous vehicles and other changes in transportation technology;
- The trend to increased foot passenger traffic on B.C. Ferries;
- Integration with public transit; and
- Current and future opportunities to integrate coastal ferry services better into broader transportation networks.

Report overview

The remainder of this report presents a description of the current provision of coastal ferry services, including issues and opportunities for change. It then summarizes the available information on population growth and change on the coast, recognizing that B.C. Ferries serves a diverse area which includes the largest population centres in the province as well as some of its most remote regions.

Some of the most significant factors that are likely to influence the service in the future are described and assessed for their potential impact. From all this information the report derives an outline of a possible provincial policy framework for the service going forward into the future.

CONTEXT: THE SITUATION TODAY

Rationale for publicly funded and provided coastal transportation services

For decades, the theory and practice of public administration have been dominated by debates over which of the services needed by the population should be provided by the state vs. the private or third sectors. Related to this issue is the debate over whether any given service should be financed by the users or beneficiaries of that service or from general taxation. In general, the governing principles have been that (i) a service should be provided publicly if necessary in the interests of equity, efficiency or public policy and (ii) that public services should be paid for by general taxation only if the costs and benefits of the service cannot be efficiently and equitably assigned to the users of the service.

The theory and practice of transportation economics have reflected these principles. Most transportation services have been provided and paid for privately through the operation of private vehicles, the services provided by common carriers and the goods movement industry. A notable exception is the provision of roadway infrastructure by the public sector, with most of the costs of this infrastructure being borne by the public purse (even though some of the relevant revenues such as gasoline taxes can be seen as a form of user charge).

Historically, most of the coastal passenger transportation services in British Columbia have been provided by the provincial government or delivered on behalf of the government by an entity established for this purpose. These services have some of the features of a “natural monopoly” similar to water and electricity services, which have very high fixed infrastructure costs that constitute a barrier to the entry of multiple service providers in circumstances where considerable cost and confusion would be created for the consumer by the presence of a number of such providers. It should be noted that the “natural monopoly” concept has not been applied to coastal goods movement, in which B.C. Ferries competes with private sector entities of various forms. In addition to these factors, the reality is that many communities on the coast have been established and have grown with a dependence on access to a ferry service that should not be unreasonably altered.

The establishment of user charges for roadways has a long history going back to the toll roads of medieval times, and they have seen expanded use more recently in the form of various “mobility pricing” schemes. Such schemes have had to counter deeply ingrained user attitudes based on the idea that roads should be “free” or that they have already been “paid for” through taxes and user charges such as fuel taxes and license fees.

A different philosophy seems to prevail for passenger transportation services that are not provided by private automobiles using the “free” public road network. The provision of public transport in urban areas, while receiving a degree of public subsidy, also involves the imposition of user fees in the form of fares. Even the temporary storage of private automobiles in private and public parking facilities routinely involves a user fee in many circumstances.

In addition to providing an important source of revenue for transportation services, user fees are also considered desirable to discourage excessive discretionary use of transportation that would otherwise lead to overwhelming demand resulting uncontrolled costs that would ensue when transportation services must be sized to meet a maximum demand resulting from “free” use.

In this context, the provision of ferry services by or on behalf of the provincial government can be seen as being akin to a public transit service, where part of the cost is underwritten by funds from government (in the case of ferries, a “ferry service fee,” a federal subsidy and other funding from the Province which amount to more than \$200 million per year), while a significant share of the costs is borne by the users as the direct beneficiaries of the services. Which share should be borne by the public purse and which by the users is, and probably always will be, the subject of much debate and adjustment over time.

In the coming years, there is likely to be greater consideration given in British Columbia and elsewhere to the historic and excessive subsidy of the private automobile by the general taxpayer (a TransLink study¹¹² published in 2013 estimated that the subsidy for private automobile users in Metro Vancouver was \$2.8 billion, as compared to \$648 million for trucks, \$848 million for transit, \$62 million for cycling and \$34 million for walking). Although there are many social, economic and political factors that will play a role in this debate on “mobility pricing,” it would be logical to expect greater application of “user pay” concepts to the highway system rather than lesser application of these concepts to the ferry system.

¹¹²https://www.translink.ca/-/media/Documents/plans_and_projects/regional_transportation_strategy/Backgrounders/Transportation_Pricing_Backgrounder.pdf

Services provided

BC Ferries today

BC Ferries serves a number of communities and regions throughout coastal British Columbia. The ferry routes and the communities served are shown in the figure below.



BC Ferries Route Map

The route numbers shown in the route map are described in the following table:

Routes, Destinations and Terminals
1 Tsawwassen – Metro Vancouver (Tsawwassen) to Victoria – Vancouver Island (Swartz Bay)
2 West Vancouver – Metro Vancouver (Horseshoe Bay) to Nanaimo – Vancouver Island (Departure Bay)
3 West Vancouver – Metro Vancouver (Horseshoe Bay) to Gibsons – Sunshine Coast (Langdale)
4 Fulford Harbour – Salt Spring Island (Fulford Harbour) to Victoria – Vancouver Island (Swartz Bay)
5 Victoria – Vancouver Island (Swartz Bay) to Southern Gulf Islands
6 Vesuvius Bay – Salt Spring Island (Vesuvius) to Crofton – Vancouver Island (Crofton)
7 Earls Cove – Sunshine Coast (Earls Cove) to Powell River – Sunshine Coast (Saltery Bay)
8 West Vancouver – Metro Vancouver (Horseshoe Bay) to Bowen Island – Metro Vancouver (Snug Cove)
9 Tsawwassen – Metro Vancouver (Tsawwassen) to Southern Gulf Islands
10 Port Hardy – Vancouver Island (Bear Cove) to Prince Rupert – North Coast (Prince Rupert) ¹¹³
10s Discovery Coast Connector Service [McLoughlin Bay (Bella Bella), Ocean Falls, Bella Coola, Shearwater]
11 Prince Rupert – North Coast (Prince Rupert) to Skidegate – Graham Island (Skidegate)
12 Brentwood Bay (Brentwood Bay) to Mill Bay – Vancouver Island (Mill Bay)
13 Gibsons – Sunshine Coast (Langdale) to New Brighton – Gambier Island (New Brighton) to Keats Landing – Keats Island West (Keats Landing)
17 Powell River – Sunshine Coast (Westview) to Comox – Vancouver Island (Little River)
18 Powell River – Sunshine Coast (Westview) to Blubber Bay – Texada Island (Blubber Bay)
19 Nanaimo – Vancouver Island (Nanaimo Harbour) to Descanso Bay – Gabriola Island (Descanso Bay)
20 Chemainus – Vancouver Island (Chemainus) to Thetis Island (Preedy Harbour) to Penelakut Island (Penelakut Island)
21 Denman Island West (Denman Island West) to Buckley Bay – Vancouver Island (Buckley Bay)
22 Denman Island East (Gravelly Bay) to Hornby Island (Shingle Spit)
23 Campbell River – Vancouver Island (Campbell River) to Quathiaski Cove – Quadra Island (Quathiaski Cove)
24 Heriot Bay – Quadra Island (Heriot Bay) to Whaletown – Cortes Island (Whaletown)
25 Port McNeill – Vancouver Island (Port McNeill) to Sointula – Malcolm Island (Sointula) to Alert Bay – Cormorant Island (Alert Bay)
26 Skidegate – Graham Island (Skidegate) to Alliford Bay – Moresby Island (Alliford Bay)
28 Port Hardy – Vancouver Island (Bear Cove) to Bella Coola – Central Coast (Bella Coola) Seasonal Direct Summer Service
30 Tsawwassen – Metro Vancouver (Tsawwassen) to Nanaimo – Vancouver Island (Duke Point)

¹¹³ A new seasonal central coast service between Port Hardy and Bella Coola will commence in spring 2018.

BC Ferries Vision, Mission and Values

BC Ferries has adopted a Vision, Mission and Values, with the latter covering Safety, Quality, Employees, Integrity, Environment and Partnerships¹¹⁴

The corporation's Vision, Mission and Values reflect its role as an independent, commercial organization under the Company Act rather than what might be adopted by a policy-making body such as a government ministry.

Topics such as the economy, sustainability, economic development or community and social values are not explicitly reflected in the Vision, Mission or Values.

Similarly, given the corporation's role as a transportation contractor/operator that serves as a link between terminals that are reached by other modes, the Vision, Mission and Values would not be expected to encompass matters such as what modes of travel to and from the ferries should be preferred or encouraged.

BC Ferries Vision, Mission and Values

Vision

To provide a continuously improving west coast travel experience that consistently exceeds customer expectations and reflects the innovation and pride of our employees.

Mission

Deliver on our mandate to provide safe, reliable and efficient marine transportation services that consistently exceed the expectations of our customers, employees and communities, through the creation of enterprise value.

Values

- **Safety** - *Ensure that the safety and security of our customers and staff is a primary concern in all aspects of doing business.*
- **Quality** - *Be motivated by customer expectations in providing quality facilities and services.*
- **Employees** - *Always deal from a position of honesty, integrity and mutual respect, and ensure that our employees develop to their full potential.*
- **Integrity** - *Be accountable for all our actions and ensure we demonstrate integrity in our business relations, utilization of resources, treatment of our customers and staff, and in the general conduct of our business.*
- **Environment** - *Conduct our operations in a manner that is environmentally responsible and incorporate environmental factors into our decision making.*
- **Partnerships** - *Work openly and constructively with our various business and community stakeholders to exceed the expectations of our customers and advance each other's interests.*

¹¹⁴ Reproduced from page 10 of https://www.bcferrries.com/files/PDFs/2018_Business_Plan.pdf

Three types of ferry route

The routes fall into three categories: Major Routes, Other Southern Routes and Northern Routes.

(i) Major routes¹¹⁵ - significantly demand-driven - Metro Vancouver, the Capital Region and the Nanaimo region are major destinations and also serve as gateways to other parts of the province, Canada and the US. In addition, the Sunshine Coast is within the broader commuter catchment area of Metro Vancouver. Viewed through a transportation lens, routes 1, 2, 3 and 30, which include the major services between Vancouver and Vancouver Island, can be viewed as being essentially “demand-driven.” In other words, the volume of demand is such that it substantially defines the service levels on the routes. (This is discussed further in Section 3.4). On these routes, there is a greater use, compared to the other routes, of access modes other than the private car such as transit, private coach and bicycle to get to and from the terminals. The characteristics of the routes serving the urban conurbations are shown in the table below:

Major Routes

Ferry Routes	Typical Frequency of Service	Distance in Nautical Miles	Typical Hours of Service
Vancouver - Victoria (Tsawwassen-Swartz Bay)	60 minutes	24.0	7 am to 10 pm
Vancouver - Nanaimo (Tsawwassen-Duke Point)	60 minutes	38.0	5:15 am to 10:45/11:15 pm
West Van - Nanaimo (Horseshoe Bay-Departure Bay)	90 minutes	30.0	6:15 am to 10:10 pm
West Van - Sunshine Coast (Horseshoe Bay-Langdale)	75 minutes	10.5	6:20 am to 8:55 pm

(ii) Other southern routes - less demand-driven - The smaller communities along the Sunshine Coast and the Gulf Islands, are much more like destinations in their own right than gateways to other parts of the province. They are served by ferry routes with characteristics which can be viewed as being much closer to “essential services.” In other words, while vessels on these routes can often be full, the frequency of service may be driven by necessity as much as by the volume of demand. (There are also several very short direct routes such as Campbell River - Quadra Island which is 1.8 nautical miles and takes 10 minutes to cross.) The characteristics of some of the routes are shown in the table.

Examples of Other Southern Routes

Examples of Other Routes	Typical Frequency of Service	Distance Nautical Miles	Typical Hours of Service
Nanaimo Harbour - Gabriola Island Vancouver	75 minutes	3.0	6:15 am to 11:10 pm
Brentwood Bay - Mill Bay	80 minutes	3.0	7:30 am to 5:55 pm
Campbell River - Quadra Island (Quathiaski Cove)	60 minutes	1.8	6:40 am to 9:45 pm

(iii) Northern routes (Routes 10 and 11) - The services between Port Hardy, Prince Rupert and Haida Gwaii are different from the rest of the system. For example, the 274 nautical mile service from Port Hardy to Prince Rupert and the 93 nautical mile service from Prince Rupert to Haida Gwaii each only

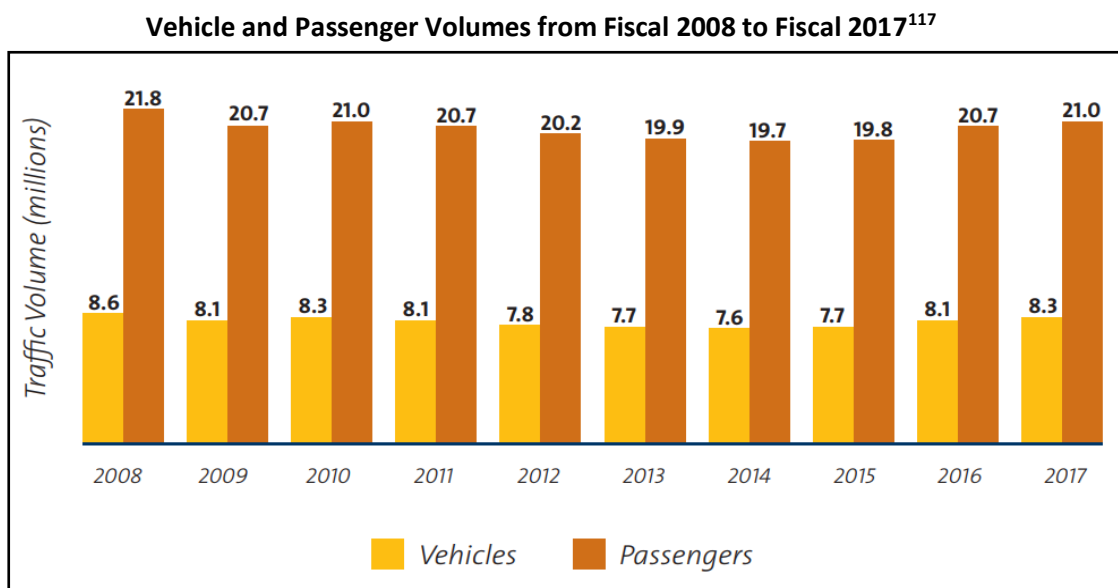
¹¹⁵ BC Ferries defines Major Routes as ‘our four busiest routes, consist of three regulated routes connecting Metro Vancouver with mid and southern Vancouver Island and one regulated route connecting Horseshoe Bay and Langdale.’

operates twice a week for most of the year. Although the communities served by these routes are relatively small, the ferry service is an essential lifeline for their populations and their access to goods and services. In addition, the ferry service is vital to the viability of a number of tourism and other businesses on the central and north coast¹¹⁶.

Factors affecting ferry passenger demand and use

BC Ferries operates one of the largest and most complex ferry systems in the world. The vessels range from small 16-car ferries up to 470-car superferries. Except for the service between Langdale and Gambier and Keats Islands in Howe Sound, all the vessels in use by BC Ferries are roll-on, roll-off car ferries. Most of the major vessels are based on similar designs, which are aggregated into different classes of ferries. The 35 vessels serve 47 terminals and 24 routes that cover more than 1,600 km of coastline and carry more than 20 million passengers and 8 million vehicles each year.

Many factors affect BC Ferries demand, including economic conditions, demographics and population growth, etc. A significant portion of trips are non-discretionary whether for business, social, medical, educational or other purposes. A substantial part of travel is discretionary and is affected by many factors including gas prices, ferry fares, the convenience and cost of transit and private coach and other services to and from the terminals, the value of the Canadian dollar, tourism, and weather conditions. As shown below, the number of vehicles and passengers carried has recently been increasing after a decrease between 2008 and 2014, but in 2017 had not quite recovered to 2008 levels.



Integration with other transport modes

There are numerous modes of access to the coastal ferry system, but by its very nature, BC Ferries has evolved largely as a private and commercial vehicle ferry system with excellent facilities for the parking, loading and unloading of vehicles. Transporting vehicles is clearly the corporation's main current focus.

¹¹⁶ See "Northern BC Ferry Service," a report by Wave Point Consulting for Tourism Prince Rupert, April 23 2018.

¹¹⁷ https://www.bcferry.com/files/PDFs/2018_Business_Plan.pdf

On the services to the smaller communities, the focus is almost exclusively on private vehicle, bicycle and foot because there are very limited transit services at one or other of the ends of the trip. On the major routes, access is possible by private vehicle, public transit, private coach, taxi, bicycle and on foot. Car-sharing is only available through “Modo” at the Tsawwassen and Swartz Bay terminals.

Each of the access modes to the facilities serving the major routes to and from the urban conurbations is discussed below.

Private vehicle

As noted above, private vehicle is the dominant mode of access. Vehicle drivers and their passengers access the ferry directly, paying the fare at the entry to the holding area at each terminal.

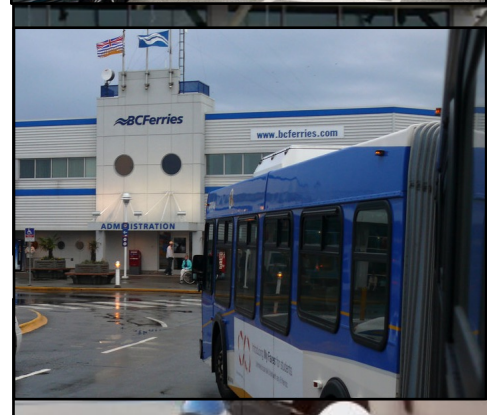
Public transit

BC Transit and TransLink (using both TransLink and West Vancouver Transit buses) provide relatively frequent service to the ferry terminals in the Vancouver, Victoria and Nanaimo regions. However, there is no through-ticketing for passengers and a user of public transit must pay three separate fares, i.e.: bus-to-ferry-to-bus.

There is no collective planning by the transport agencies (BC Ferries, BC Transit and TransLink) of the three segments of a trip to and from the urban destinations of the regions as a single trip or in terms of assuring that there is room for baggage, etc. on the transit services. Moreover, because the transit services to and from the terminals are funded primarily from local revenue sources in Metro Vancouver, the Capital Regional District and the Regional District of Nanaimo, the provision of service to carry passengers in and out of each metropolitan region may not be seen as a high priority by the transit entities.

Private coach

On the route between Vancouver and Victoria, there is also a privately operated, year-round scheduled service by coach the ‘BC Ferries Connector’. This service connects Downtown Vancouver and YVR Airport To/From



Future Needs and Opportunities in Coastal Transportation

Downtown Victoria. Reservations are generally required although walk-on passengers requiring coach service between Vancouver and Victoria (or reverse direction), can purchase tickets onboard the ferries.

Taxi

All terminals are served by taxi but, with the relatively remote location of the terminals in the larger urban areas, taxi fares are quite expensive.

Car sharing

There is very limited availability of car-sharing; “Modo” has a total of seven vehicles distributed between the Departure Bay Ferry terminal, Tsawwassen Ferry Terminal, Swartz Bay Terminal, and Horseshoe Bay.

Bicycle

While all of the terminals are accessible by bicycle, given the remote location of some of the terminals, access to the ferry system by bicycle alone is very limited.

Pedestrian

There is relatively little use of pedestrian access to and from the major ferry services simply because the distances are considerable. On the shorter, more local ferry services such as Bowen Island to Horseshoe Bay or Campbell River to Quadra Island, pedestrians can be a more significant portion of ridership.

Kiss and ride

“Kiss and ride” is a mode where a vehicle driver drops a pedestrian or cyclist off or picks them up, with the ferry passenger using the system as a non-motorized user. All the terminals have facilities for this function.

Goods Movement

BC Ferries plays a significant role in the movement of goods between the mainland and Vancouver Island (particularly in the “mid-Island corridor” route between Tsawwassen and Duke Point-Nanaimo) and among the coast’s communities. On-board trucks form a significant portion of vessel volumes and the corporation also operates a drop-trailer service between Metro Vancouver and Vancouver Island, in competition with private transport providers, and subject to regulation by the BC Ferry Commissioner.



BC Ferries Drop-Trailer Service¹¹⁸

¹¹⁸ Reproduced from https://www.flickr.com/photos/kams_world/4045981264/sizes/l/

THE FERRIES AND THEIR USERS

At its core, the purpose of the ferry service is to meet the need for the movement of people and goods on the coast. This section summarizes the available information on the measurement of performance and on the users of the system.

Measures of performance

Under the Coastal Ferry Act, British Columbia Ferry Services Inc. (“BC Ferries”) reports annually to the British Columbia Ferries Commissioner (the “Commissioner”). The reports compile information on the services BC Ferries operates on designated ferry routes, including information on the costs and quality of services provided on those routes.

There is a considerable amount of information available on the performance of BC Ferries as an operating entity, with material being published by both BC Ferries itself and the Commissioner.

Operations reporting

The following material is an example of the types of data reported. This example draws on material in the 2016/17 report¹¹⁹ to the Commissioner and shows the actual round trips; the capacity provided in terms of “Automobile Equivalents” (aka AEQs), the number of AEQs carried and capacity utilization. The route groupings/types correspond with the classifications described earlier.

The following table shows information on Capacity Provision and Utilization by Route Type. It reveals a difference between Major and Northern Routes (which have capacity utilization rates of 70.4% and 69.8% respectively) and the Minor Routes which average 51.7%. These figures illustrate that the Major Routes are more substantially driven by demand levels compared to the Other Southern Routes.

Capacity Provision and Utilization by Route Type

	A	B	C	D
Routes Type	Actual Round Trips	Capacity Provided (AEQ's)	AEQ's Carried Fiscal 2017	Capacity Utilization Fiscal 2017
Major Routes	13,361.0	8,339,982	5,874,018	70.4%
Northern Routes	233.5	54,429	38,009	69.8%
Other Southern Routes	64,775.5	6,816,294	3,525,585	51.7%
Total	77,892.0	15,210,705	9,437,585	62.0%

¹¹⁹ Adapted from Page 13 of https://www.bcferrries.com/files/PDFs/2016-2017_Annual_Report_to_the_BC_Ferry_Commissioner.pdf

Service quality

BC Ferries reports quite extensively on Service Quality through the utilization of a Customer Satisfaction Tracking study (CST) each year. The CST study examines more than sixty attributes to monitor customer satisfaction with various aspects of service on BC Ferries including:

- Overall ferry service
- Service prior to arriving at the terminal
- Service at the ferry terminal
- Service onboard the ferry
- Service pertaining to loading/unloading
- Overall safety of operations, and
- Value for money of fares paid

The study is conducted in two stages. First a random sample of passengers is intercepted onboard and screened. After the screening, passengers are given a longer follow-up survey to complete on paper or online. Interviews are distributed across nine routes in total, during June, August and November. The survey asks passengers to rate attributes on a scale of 1 to 5, with 1 = very dissatisfied and 5 = very satisfied. In the 2016 CST¹²⁰, The key areas (relative to customer expectations) as reported by BC Ferries, are:

Meeting Expectations	Not Meeting Expectations
<ul style="list-style-type: none"> • Usefulness of the website and highway signage • Staff at the terminal and onboard • Ticket purchase: efficiency of transaction and staff customer service • Ease of using passenger drop-off / pick-up areas • Availability of terminal and onboard washrooms • Cleanliness of pre-boarding lounge seating • Cleanliness and comfort of onboard lounge seating • Appearance of terminals • Atmosphere / environment onboard • Variety / selection in the onboard gift shop / news stand • Availability and cleanliness of seating area of onboard food / beverage services • Availability of tourist and travel information • Outside decks and overall appearance of vessels • Procedures for loading • Safety of ferry operations and loading / unloading 	<ul style="list-style-type: none"> • Overall value for money of fares • Parking value for money • Onboard and terminal value for money of fares for the following: <ul style="list-style-type: none"> ○ Food/beverages ○ Retail merchandise • Ease of using automated phone system • Ability to connect • Ferry sailing frequent enough

In summary, BC Ferries monitors and reports on its performance on a wide range of areas related to customer satisfaction, and it appears to be meeting expectations in most areas. It could be noted that areas where expectations are not being met relate mainly to “value for money” propositions in which it is difficult for a monopoly to achieve very high levels of satisfaction.

¹²⁰ Adapted from https://www.bcferrries.com/files/PDFs/BC_Ferries_PUBLIC_REPORT_CST_2016.pdf

Patterns of ferry usage

The following section presents an analysis of the surveys conducted in the 5-year period 2012 to 2016 inclusive. The surveys were conducted on the following routes, which represent 75% of all traffic volume each year:

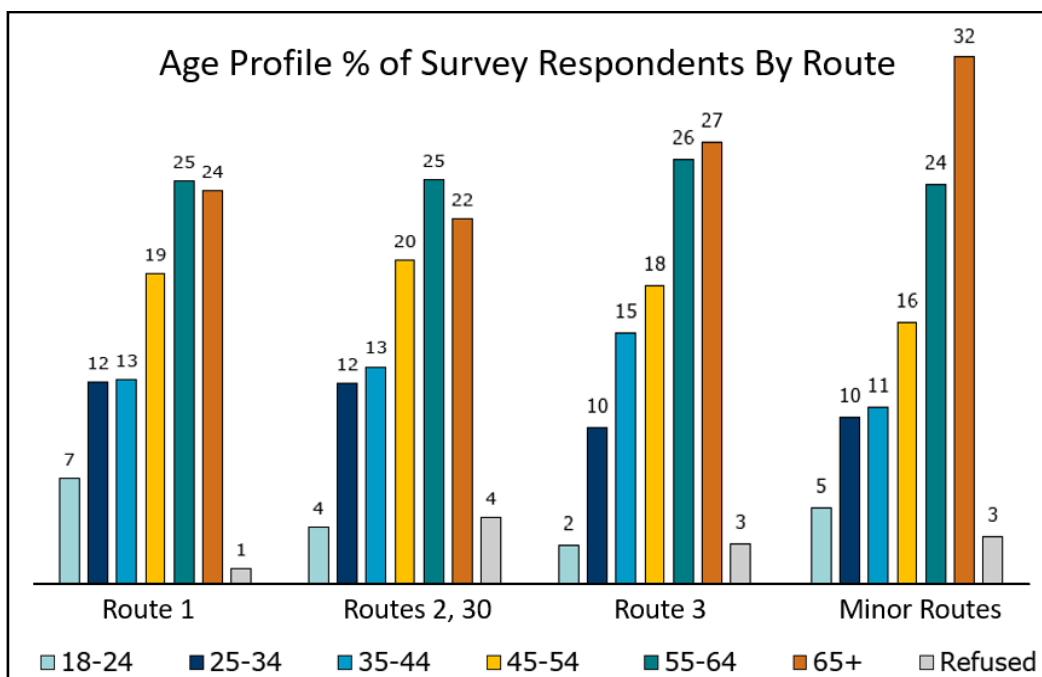
- Route 1: Tsawwassen-Swartz Bay
- Route 2: Horseshoe Bay-Departure Bay
- Route 3: Horseshoe Bay-Langdale
- Route 30: Tsawwassen-Duke Point
- Route 4: Swartz Bay-Fulford Harbour (Saltspring Island)
- Route 19: Departure Bay–Descanso Bay (Gabriola Island)
- Routes 5/9: Southern Gulf Islands

Gender split– more female users

On all routes the gender split is typically in the range of 43-47% (Male): 53-57% (Female). This split is relatively consistent across routes and the years surveyed.

Age – older on less busy routes

The figure below shows the age of users in the 2016 survey on several routes. There is quite a variance between the profiles of Routes 1, 2 and 30 which are between Metro Vancouver and Swartz Bay/Nanaimo compared to Route 3 (West. Vancouver to Sunshine Coast) and Minor Southern Routes. On the latter two routes the population is noticeably older, especially on the Minor Routes where 32% were over 65 years.



Party size – more children on major routes

The survey data on the composition of travel groups shows that the major routes had more children and more adults travelling in groups compared to the minor routes.

Annual return trips – many more trips by individuals on lower traffic routes

The table below shows Average Return Ferry Trips in 2016 were higher on the minor southern routes and Route 3 than on Routes, 1, 2 and 30.

Route	Route 1	Routes 2, 30	Route 3	Minor Routes
Ave. Return Ferry Trips 2016	10	11	29	35

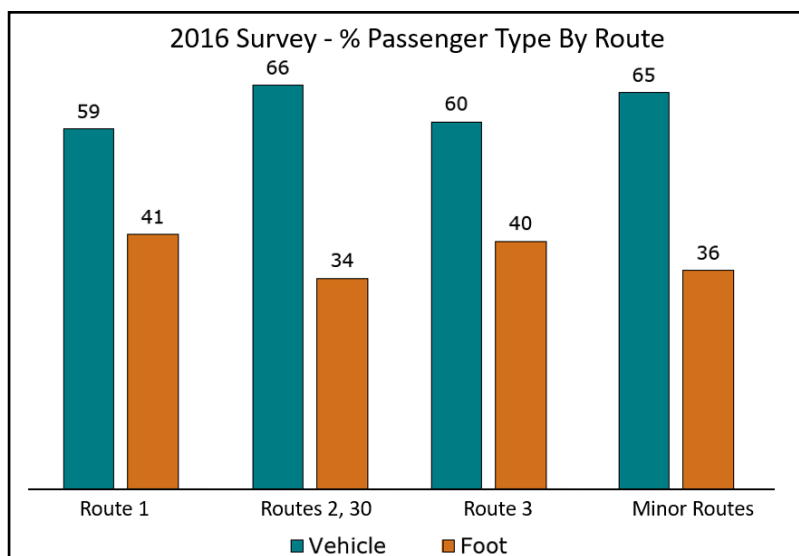
Trip purpose – fairly consistent for all routes

Trip purposes are shown in the table below and are much more consistent across the various routes. All routes showed that over 80% of trips were for personal reasons (e.g. visiting friends, vacation, shopping, etc.)

Trip Purpose	Route 1	Routes 2, 30	Route 3	Minor Routes
Personal	85%	88%	83%	81%
Business	14%	12%	17%	19%

Travel mode to terminals – significant numbers of foot passengers

The figure below shows the breakdown of vehicle-based travellers vs. those who arrive by other modes and access the ferry on foot. It is of interest that the highest proportion of foot passengers is on Route 1, where about one quarter of those foot passengers (or approximately 10% of all Route 1 passengers) travelled to and from the terminals by transit. This reflects the fact that Route 1 is relatively well served by transit at both trip ends, compared to some of the other routes. On all routes, 31-32% of foot passengers are dropped off or picked up by a private vehicle and 25-26% will park and then ride.



Implications

Ferry services in a broader context

The ferry service clearly seems to be performing well in relation to the performance measures established for it. In addition, BC Ferries collects a substantial amount of data on ferry users and their patterns of use in terms of many metrics such as age, trip purpose, access modes to ferries, etc. There is less information on the system's role in relation to the performance of the broader provincial transportation system or, in fact, on the performance of that system itself. Ferry services, especially on the Tsawwassen/Swartz Bay/Horseshoe Bay/Nanaimo routes are a vital part of the provincial transportation system which comprises other road-based infrastructure and multiple service providers.

In other words, as noted earlier in this report, the ferry system does not exist in isolation; any ferry trip for goods or people has an origin and destination that involve access and egress from the terminals by other transport modes. Effectively most ferry trips can be seen as only a part of a multi-modal trip.

Understanding the nature of these complete multi-modal trips from the origin to destination is important from a policy and planning perspective. For example, one of the objectives in the 2016 B.C. Climate Leadership Plan is to reduce the overall rate of vehicle kilometres travelled per capita. To assess the role that could be played by the ferry system in meeting this objective it would be necessary to have both qualitative and quantitative information on the adequacy of ferry access and egress modes (e.g. transit services) and other trip and user characteristics.

Need for multi-agency "joined-up thinking"

None of the other agencies that might be involved in policy and planning activities (i.e.: MoTI, BC Transit or TransLink) has sufficient data to allow a "whole trip" perspective to be taken of the adequacy of access modes such as transit connecting services, etc. Similarly, there does not appear to be much in the way of "joined-up" inter-agency planning for how travellers, particularly on the busier routes, can access the ferry system by modes other than the private vehicle.

For policy and planning purposes related to the role of the ferry services in a broader transportation context, it would be necessary to have more comprehensive information on a range of factors such as:

- **Modes of travel to and ferry terminals** (e.g. private vehicle, transit, private coach, shared ride car, bicycle, walk, "kiss and ride," etc.)
- **Trip purposes of users** (e.g.: business, personal, medical, social, educational, recreation, tourism, delivery, etc.)
- **Origin-destination data** (e.g. information on where people start and finish their trips)
- **Group composition** (e.g. single traveller, number in group, family groups, etc.)
- **Suitability of transit vehicles** (e.g. ability to accommodate luggage, parcels, etc.)
- **Demographic data on users** (e.g. age, income, etc.)
- **Ease of trip planning** (availability of information on services, fares, etc.)

An initiative by MoTI to convene a partnership of agencies and to coordinate planning and data collection would appear to be an essential starting point.

Future Needs and Opportunities in Coastal Transportation

Clearly some trips will always need to involve using a vehicle, e.g. a family going on a camping trip from Kelowna to Long Beach. A broader range of choices for other trips may contribute more desirable outcomes in relation to personal preferences and public policy. However, for that to be achieved there will need to be government policy direction for a more integrated approach to the planning of the marine- and land-based services.

GROWTH AND OTHER INFLUENCES ON THE FERRY SYSTEM

British Columbia's population and economic growth are the primary influence on the demand for B.C. Ferries services and their role in meeting the province's coastal transportation needs. An understanding of the likely future trends in these factors and other developments such as climate change is therefore important to the consideration of the issues addressed in this report.

Forecast population growth and demographic trends in coastal British Columbia

The most recently available projections indicate that the province's population will grow from 4,669,000 in 2013 to 6,058,000 in 2036 at an average annual rate of 1.3 per cent¹²¹. The aging of the general population will continue. The percentage of the population that are dependent on workers for services, including transportation, (i.e. the very young and the very old) will grow significantly.

Increasing diversity will also be an important demographic factor which will affect all services that deal with large numbers of people such as BC Ferries. Diverse ethnicity will place demands on the services provided and on BC Ferries. Even changes in concepts such as gender will have an influence on the efforts of the system to ensure the needs of all users are accommodated and respected.

Projected growth distribution patterns

Of the province's 9 development regions, the fastest-growing will be the two regions where BC Ferries has the most intensive operations, namely Mainland/Southwest (1.6 per cent per year) and Vancouver Island/Coast (1.0 per cent per year). In contrast, the other development region where B.C. Ferries provides service, the North Coast, will experience the lowest population growth rate of 0.1 per cent annually.

Relationship to regional growth strategies

In all communities served by BC Ferries, the ferry terminals are points of entry or departure; in many remote communities they are the only points of arrival and departure. Historically, the location and characteristics of ferry terminals and services did not give rise to many local planning issues. More recently, as areas such as the Southern Gulf Islands experience ongoing population growth and begin to take on some of the characteristics of "commuter communities," road capacity, traffic, parking and congestion are becoming more significant issues.

Increasingly, communities in British Columbia are attempting in their plans to respond to a number of existing or desirable changes in society identified in this report, including the aging of the population, the imperatives of greenhouse gas reduction and the need to accommodate changing trends in transportation such as automated vehicles and concepts of transportation as a service.

¹²¹ B.C. Stats: PEOPLE 2013: Sub-provincial Population Projections (<https://www.scribd.com/document/212384776/Overview-of-the-BC-and-Regional-Population-Projections-2013-2036>)

Future Needs and Opportunities in Coastal Transportation

Some additional factors affect the situation in the Mainland Southwest and Vancouver Island regions, in that they are already the most populous part of the province, are growing relatively rapidly and contain complex, relatively dense urban regions with fairly advanced multi-modal transportation systems.

An examination of the regional growth strategies and related documents of the regional districts in the Mainland Southwest and Vancouver Island regions areas reveals the following common themes:

- All are expecting significant population and economic growth;
- All are committed to the principles of sustainability and seek to reduce the impact of human activity on the natural environment;
- All seek to manage urban form in a compact way that reduces the need for daily travel and the length of trips and increases the viability of alternatives to the private automobile such as transit, cycling and walking; and
- All are focused on transportation needs internal to their regions; access to and from ferry terminals does not receive much attention.

The regional plans appear to take the existing ferry terminals as a “given.” Although the Sunshine Coast Regional District’s Integrated Transportation Study discusses – and dismisses – the possibility of a ferry connection from Sechelt to the Lower Mainland, the planning documents for Metro Vancouver contain no references to ideas such as developing a new ferry terminal close to SkyTrain and Vancouver International Airport.

Only the regional growth strategy for the Regional District of Nanaimo explicitly recognizes that region’s place in the broader provincial transportation system:

The RDN serves as a trans-shipment hub for Vancouver Island and a regional gateway for tourism. Locating businesses and industries where they can take best advantage of the economic opportunities offered by the numerous transportation facilities and services in the region – deep water harbours, seaports and ferry terminals, railway, airport and highways - and services - ferries, transit, and rail - should be a key consideration in land use decision. (Regional District of Nanaimo, “Shaping our Future” 2011).

In summary, the regional growth strategies contain a number of principles such as facilitating alternatives to the private automobile and sustainability that would be factors in long-term planning for coastal transportation in the Salish Sea, but one would have to look elsewhere for a comprehensive transportation strategy for the larger region.

Climate change and sea level rise

The effects of climate change are already having an impact on the ferry system in the form of more extreme weather events that present a challenge to the systems efforts to transport people and goods safely and efficiently. It is expected that this trend will continue into the foreseeable future. Rising sea levels, thought to be a consequence of climate change, are expected to raise the level of the world's oceans by at least one metre by the end of this century. As an agency whose basic mission is to provide water transportation between British Columbia's land masses, BC Ferries must factor in sea level rise in all of its facility planning.

Implications

The continued growth, aging and diversity of the population of British Columbia will continue to be key drivers of the demand for BC Ferry services into the foreseeable future. The territory served by BC Ferries includes some of the most remote parts of British Columbia as well as the significant conurbations located in the parts of the province on the Salish Sea. Meeting the challenge of providing ferry services in this environment will necessitate leadership by the provincial government and cooperation among all agencies involved in ensuring that the coastal transportation needs of the people – viewed holistically – are met.

IMPACTS OF CHANGING TECHNOLOGIES

In simple terms, trips on ferry services for a passenger or a vehicle driver may be seen as ‘intermissions’ in trips by other modes such as car, bike, walk or bus to and from origins and destinations which are remote from the ferry docks and terminals. This section of the report deals with five of the main trends that are reshaping the future of transportation, especially in and between urban areas. These trends will have profound impacts on the demands for and nature of coastal ferry services.

- i. **Rapid adoption of vehicle automation** – Vehicles becoming increasingly automated in the next few decades;
- ii. **Faster digital communications and the Internet of Things (IoT)** – Faster digital communication services connecting people, vehicles and infrastructure – part of the Internet of Things;
- iii. **Increasing electrification of vehicles** – Vehicles becoming increasingly electrically powered;
- iv. **New materials and manufacturing techniques** – New materials and manufacturing innovation (e.g. 3D printing) allowing lighter vehicles better suited to electrification; and
- v. **Shifting values towards mobility as a service** – Shifts away from car ownership towards non-motorized and collective transport and growth in purchasing Mobility as a Service (MaaS) on an as-needed, when-needed basis.

While some of these trends may seem unrelated, most of them become mutually reinforcing as discussed below.

Rapid adoption of vehicle automation

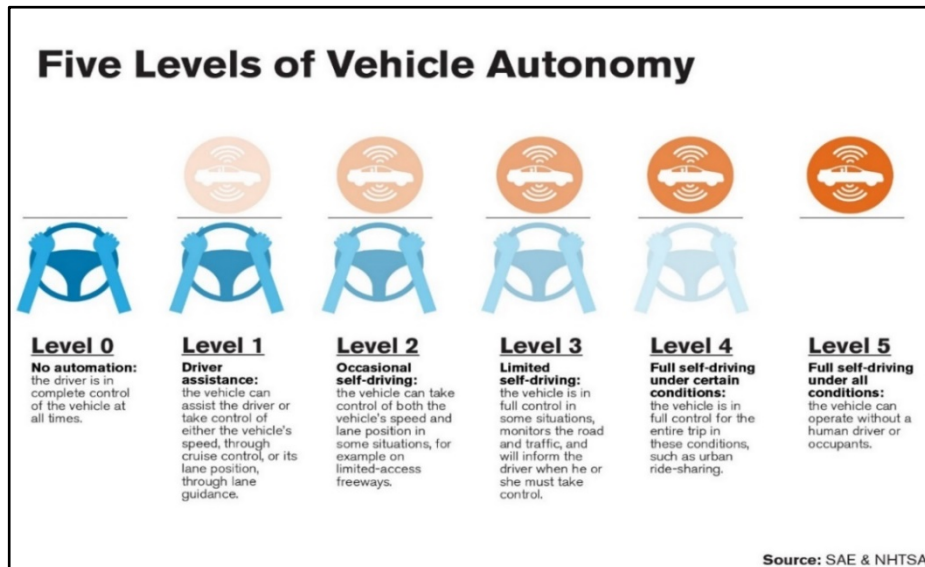
Today there is much talk of fully automated vehicles, but that only represents the end state of a progression that is likely to involve five levels of increasing vehicle automation¹²² as shown in the table below.

Levels of Vehicle Automation:

Level of Automation	Control of Vehicle	Environment Monitoring	Emergency Response	Functions in all Contexts?
0 No Automation	Driver	Driver	Driver	N/A
1 Driver Assistance	Driver, Few Functions by System	Driver	Driver	No
2 Partial Automation	Driver, Multiple Functions by System	Driver	Driver	No
3 Conditional Automation	System	System	Driver	No
4 High Automation	System	System	System	No
5 Full Automation	System	System	System	Yes

¹²² Defining characteristics of levels of vehicle automation as defined by the Society of Automotive Engineers (2014)

The following illustrates these five stages as defined by the Society of Automobile Engineers (SAE)¹²³ and adopted by the US Department of Transportation:



Each of these levels of automation is described further briefly below:

- **Level 0 - No automation:** At Level 0, the driver performs tasks i.e. steering, braking, accelerating or merging, etc.
- **Level 1 - Driver assistance:** At level one, a vehicle itself assists with a few functions (such as braking when too close to another vehicle), but the driver still handles functions including all accelerating, braking, and monitoring of the road conditions.
- **Level 2 - Partial automation:** Today, most manufacturers are developing vehicles that can assist with steering or acceleration functions and allow the driver to disengage from some of their tasks. The driver needs to stay ready to take full control and is responsible for most safety-critical functions and all monitoring of the overall road situation.
- **Level 3 - Conditional automation:** In shifting from Level 2 to Levels 3 and above, the vehicle itself controls all monitoring of the road environment using built-in sensors. The driver is still important but can disengage from “safety critical” functions such as braking when conditions are safe.
- **Level 4 - High automation:** At Levels 4 and above, the vehicle itself controls steering, braking, accelerating, monitoring the vehicle and road as well as determining when to change lanes, turn, and use signals. The vehicle would notify the driver when conditions are safe, and only then would the driver switch the vehicle into automatic mode.
- **Level 5 - Full automation:** A Level 5 autonomous vehicle needs no human attention. Vehicles do not need or have pedals, or a steering wheel. The vehicle independently controls all critical tasks, monitors the road and surrounding environment and deals with unusual driving situations such traffic jams.

¹²³ <http://articles.sae.org/15021/>

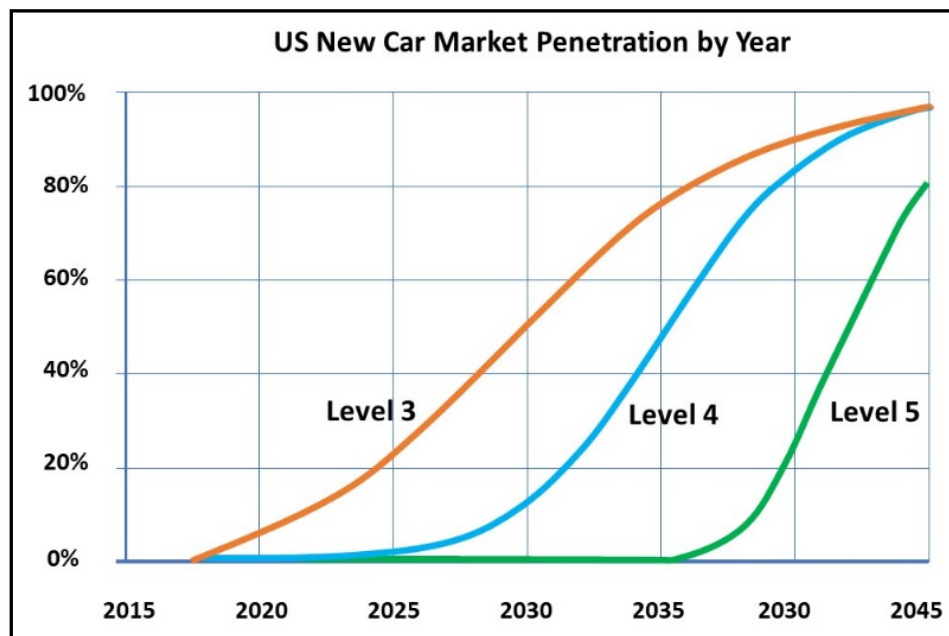
There are many views on the exact timing for adoption of automated vehicles. One recent analysis is presented in a May 2017 paper¹²⁴ from the University of Waterloo entitled ‘*Tomorrow Has Arrived: Cities and Autonomous Vehicles*’. The paper notes the following:

- *Automated vehicles are coming sooner rather than later. The commercial market is expected to begin around 2020, then significantly ramp up in the 2030s, and finally reach a point of market dominance after 2050. Though approximate, this timeline should be considered for both short term and long-term planning.*
- *Direction from upper levels of government is needed now to implement a framework through which permitted uses, safety certification and standards, liability, privacy, and transition strategies can be developed.*

The paper further observed that:

- *The adoption rate of connected and electric vehicle technologies will dramatically influence the operational performance, infrastructure requirements, and environmental impacts of AVs.*

Another analysis by Palo Alto-based Silicon Valley Mobility makes forecasts for the adoption of self-driving technology. The analysis included several factors including existing or widely assumed market launch dates for Level 3 to 5 automation and the examination of known market penetration trends for other areas of technological innovation (e.g. smartphones, airbags in vehicles, digital music, etc.). The following graphic has been prepared based on the Silicon Valley Mobility material¹²⁵ and presents curves for US market penetration for Level 3 - Conditional Automation, Level 4 – High Automation and Level 5 Fully Automated) market penetration. It is anticipated that trends in Canada will be very similar.



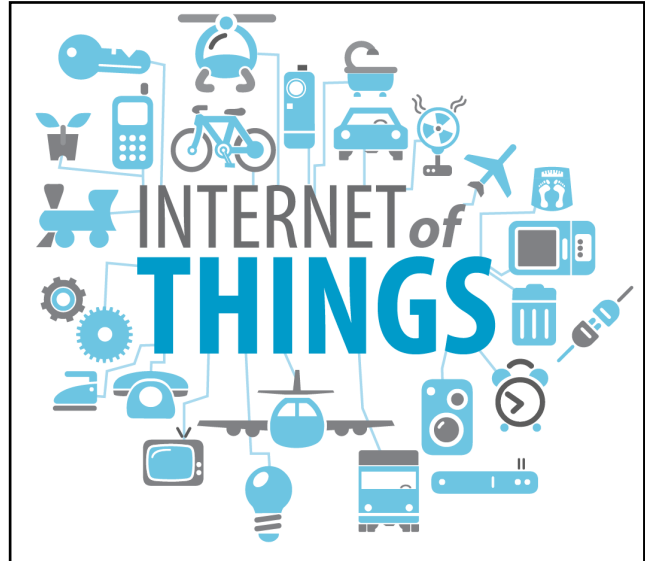
¹²⁴https://uwaterloo.ca/planning/sites/ca.planning/files/uploads/files/tomorrow_has_arrived_-_cities_and_autonomous_vehicles_pragma2017_cw_report1_opt.pdf

¹²⁵ <https://thelastdriverlicenseholder.files.wordpress.com/2017/07/market-forecast-autonomous-driving.png>

In summary, vehicle automation should be a central consideration in any transportation plans that have a horizon beyond the next 10 years.¹²⁶

Faster digital communications and the Internet of Things (IoT)

Automated vehicles will be dependent on faster digital communications. They will be part of the Internet of Things (IoT) which is the network of physical devices, vehicles, home appliances and other items embedded with electronics, software, sensors, actuators, and connectivity which enables these objects to connect, communicate and exchange data.



With the coming advent of '5G' mobile (cellular) data networks and growth in the Internet of Things (IoT), vehicles will increasingly be connected to the network and to each other. Connections with other vehicles and with infrastructure will increase roadway efficiency and reduce the frequency and severity of vehicle collisions. For example, connected vehicles can all move off from a stop light as one 'platoon' at the same time, with no delay as each waits for the other to start moving.

As long ago as 2014, AT&T in the US added more car data subscribers (500K) than smartphone subscribers (466K) or tablet subscribers (342K). AT&T's car data plans deliver software updates to the vehicle, traffic data to the navigation system, and Internet connectivity to the passenger.

Connectivity will also transform the auto insurance market by enabling insurance firms to base insurance on factors affecting the actual rates of risk exposure such as the distance driven. Usage-based auto insurance could become a significant part of the overall auto insurance market by 2020. For example, in the US (e.g. Washington State) drivers can buy pay-per-mile insurance with a monthly base rate plus a few cents per mile when the vehicle is driven.

Shifts in insurance pricing from a fixed-price “drive as much as you want model” to a distance-based “pay as you drive” model are likely to have an effect on the choice of modes of travel by allowing a user who decides to walk, bike, carpool or take transit to save money at the same time. They are also fully compatible with the trend to the commodification of transport to become Mobility as a Service rather than ownership of vehicles.

¹²⁶ Many of these considerations appear to be recognized by the leadership at BC Ferries, as evidenced by an article in the Times-Colonist on 29 January 2018. Among other things the article noted that: *It's possible that in 20 years, most customers will be using "an autonomous ride-hailing car to come to the terminal and just walking on because they are going to be picked up by an autonomous vehicle on the other side," says Mark Collins, president of BC Ferries.*

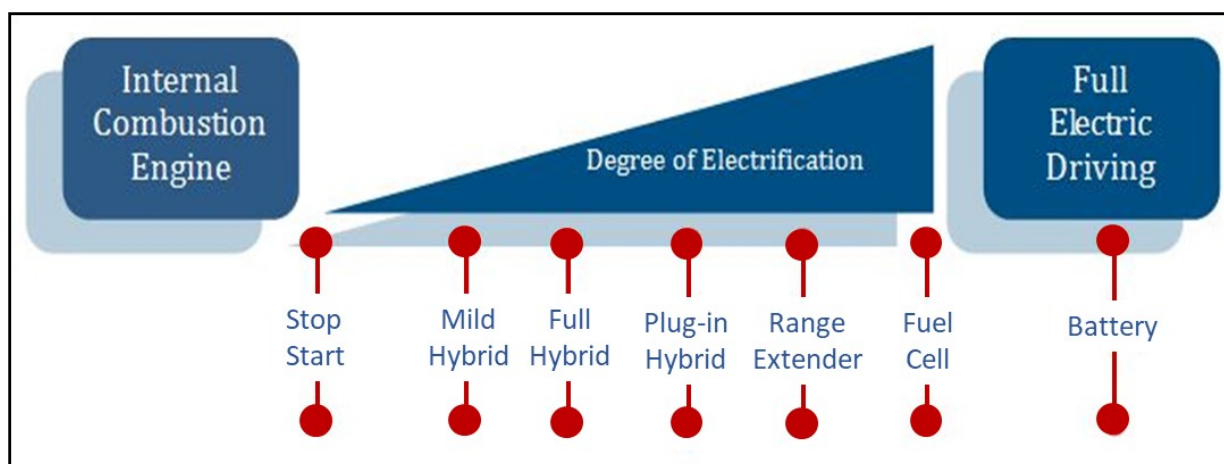
Increasing electrification of vehicles

It is likely that almost all fully automated vehicles will be electrically powered. An electric drivetrain is typically more powerful, compact, and efficient than the fossil-fueled internal-combustion engine alternative and produces zero local air emissions. Electric drive enables a combination of performance and efficiency unmatched by internal combustion engines, while producing maximum torque at any speed. Moreover, an electric vehicle (EV) can capture energy through regenerative braking.

Innovations in battery technology are likely to reduce dramatically the cost of energy storage and increase the energy density of batteries. As a result, electric drivetrains in both passenger and goods vehicles will gain market share in more sectors of the transportation industry.

The graphic below illustrates some of the steps/stages as the internal combustion engine is eventually replaced by full electric drive.

Illustration of Steps towards Electrification¹²⁷



Transit buses and local delivery trucks are likely to lead the way in the electrification of transportation because the economics of electric drivetrains for heavy short-range vehicles can be relatively attractive. Many companies making private vehicles such as Tesla, are also moving to address the “range fear” that many drivers have by tackling the “chicken-and-egg” problem of ensuring that there are a rising number of charging stations to make relatively long trips by EVs more viable.

In terms of timing, there is a variety of forecasts for EV adoption. One Bloomberg New Energy Finance report¹²⁸: *Electric Vehicle Outlook 2017* estimated the following:

¹²⁷ Adapted from <https://tec.ieee.org/newsletter/january-february-2015/an-approach-for-vehicle-electrification>

¹²⁸ <https://about.bnef.com/electric-vehicle-outlook/>

- **Electric vehicles take majority share of new car sales** - We estimate that EVs will account for 54% of new car sales by 2040, not 35% as previously forecast.
- **Tumbling battery prices to drive EV growth** - The real take-off for EVs will happen in the second half of the 2020s due to plunging lithium-ion battery prices, which are set to fall by more than 70% by 2030.

New materials and manufacturing techniques

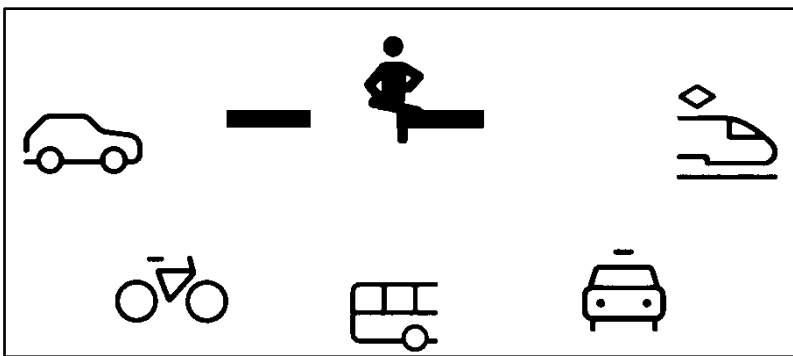
Innovation in vehicle materials and manufacturing will result in a shift towards much lighter vehicles. Electrification will also drive this because it will increase vehicles' range and reduce the size of battery needed. The demands for lighter vehicles also come at a time when the cost of carbon fibre and other composite parts is dropping.

In the longer term, new vehicle manufacturing technology, including 3-D printing, will change the way vehicles are designed and assembled to enable even greater efficiency, lighter weight, and innovative design.



Shifting values towards mobility as a service (MaaS)

The advent of car sharing, ride-hailing and self-driving vehicles represent a significant shift in consumer behavior. The future of personal transportation will be determined by technological advances, informed by the needs and desires of the people who use them. This is particularly the case for younger adults who have grown up with technology of all forms and will age as automated vehicles become more and more common. It is reported that Millennials own fewer cars¹²⁹¹³⁰ than previous generations and many are less



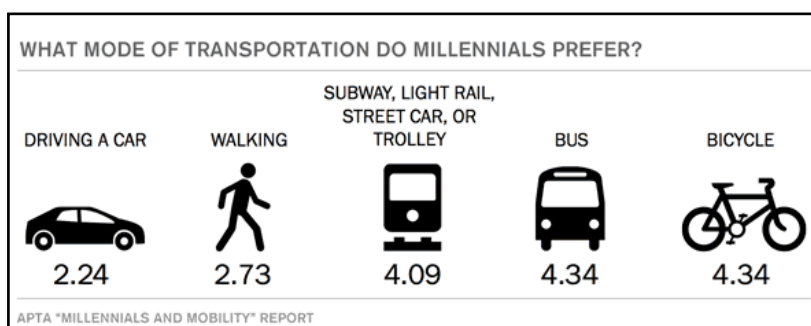
¹²⁹ <https://www.forbes.com/sites/quora/2017/10/16/why-millennials-are-buying-fewer-cars-than-older-generations/#48b91b117726>

¹³⁰ <http://www.apta.com/resources/reportsandpublications/Documents/APTA-Millennials-and-Mobility.pdf>

likely to have driving licenses. There has also been some evidence of “peak car”¹³¹ in some developed countries.

As vehicles become increasingly automated there will be profound effects on patterns of travel and usage. For example, if all vehicles become automated there may be reduced interest in vehicle ownership as the cachet of “you are what you drive” attitudes will be reduced if all vehicles perform the same way. In turn, this may drive interest in using vehicles simply as a service and effectively blurring the lines of what has traditionally seen as private vs public transport.

The young will be able to travel, and elderly will regain mobility, traffic congestion may decline, safety and fuel efficiency will improve, on-demand services and deliveries will become commonplace, and it may become possible to reclaim public spaces that are currently devoted to parking. However, the impacts of technology are not always predictable; for example, it is possible that congestion could increase with vehicles circling to pick-up owners or users.



Vehicle ownership has been at the heart of North American culture for many generations - passing a driving test and buying a car were considered rites of passage, and the car chosen was often regarded as an expression of identity, reflecting an owner’s priorities and even revealing a driver’s social status. The rapid evolution of technology is transforming both the types of vehicles and infrastructure used in urban areas as well as driving a more fundamental and somewhat related shift in vehicle ownership and the use of Mobility as a Service (MaaS).

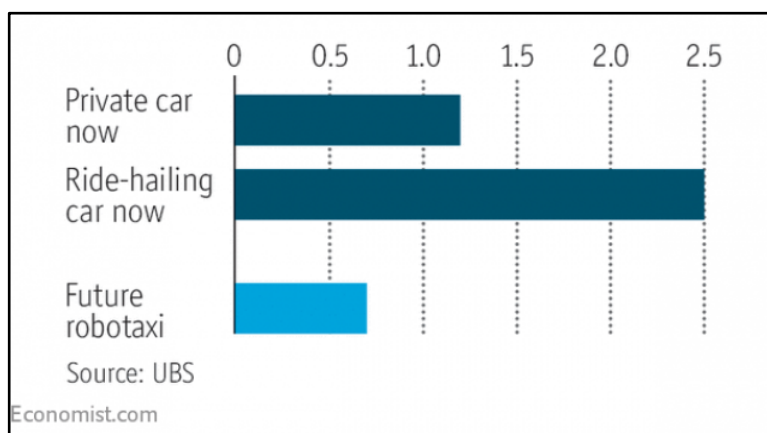
Technology and the ubiquitous smartphone are increasingly driving a shift away from traditional views of urban and, to a lesser degree, inter-urban transportation as a physical proposition involving traditional transit and private vehicles. Alongside the sharing of cars, bikes, and rides, app-based Mobility as a Service (MaaS) offerings such as Car2Go, Evo Uber, etc. have emerged from niche services to become increasingly mainstream offerings in an ever-growing number of urban areas worldwide. Vehicle connectivity will loom large in the future. It will also disrupt vehicle manufacturer-customer relationships and consumers’ attitudes to cars and car ownership. Services such as Apple’s Car Play and Google’s Android Auto, with increased vehicle automation, are also likely to shift a vehicle user’s primary focus away from the car and onto the screen.

¹³¹ <http://www.businessinsider.com/bank-of-america-weve-reached-peak-car-2017-6>

Services such as Car2Go, Modo, Evo, Uber, Lyft and ZipCar enable someone to have what they want (different forms of on-demand mobility) without having to purchase a vehicle which would have a low utilization rate over the day – typically less than 5-10 percent. In urban areas many are paying for car use by time or choosing the back seat over the driver's seat. In both cases there is no need to for users to be concerned with finding parking, fueling (or charging) the vehicle, paying insurance or financing and maintaining the vehicle.

Cost per Mile Worldwide \$

The graphic above is reproduced from a March 1, 2018 Economist special report¹³² titled *Autonomous vehicles are just around the corner*. The article notes that *'The combination of autonomy and ride-*



hailing, together with a switch to electric vehicles, seems likely to undermine the logic of car ownership for many people. Ride-hailing services in the rich world currently cost around \$2.50 per mile, compared with about \$1.20 per mile to own and operate a private car (see chart). But the driver accounts for about 60% of the cost of ride-hailing. UBS, an investment bank, reckons that automation, competition and electrification (which makes cars more expensive to buy but much cheaper to run) will cut the cost of ride-hailing by 70%, to about \$0.70 per mile. So, a typical Western household driving 10,000 miles a year could ditch its car, use robotaxis (sic) and save \$5,000 a year'.

Implications

The trends identified in this section have significant implications for developing a policy framework for coastal ferry services. This reality is particularly important because ferry investments in terms of vessels and terminals have a service life measured in decades. In fact, if a new large ferry was purchased today, it is likely that all the shifts to Level 5 vehicle automation will have occurred before it reaches the end of its service life. Plans, designs and procurements should reflect this likelihood.

The following table summarizes the core considerations outlined in this section, along with observations on their potential implications for ferry policy. The effects may vary somewhat between the various trends and the types of ferry service. Trends 1, 2, 3 and 4 may start to be felt on all services at the same time, although not necessarily to the same degree with the changes probably affecting the routes

¹³²<https://www.economist.com/news/special-report/21737418-driverless-vehicles-will-change-world-just-cars-did-them-what-went-wrong>

between the metropolitan areas (i.e.: Metro Vancouver, the Capital Region District and the Regional District of Nanaimo) most in the earlier years. Trend 5 may well mostly affect the routes between the metropolitan areas to a greater degree, simply because the choice of alternative modes of travel to and from ferry terminals is likely to be greater than on other routes.

Summary of Trends, Effects and Potential Ferry Policy Implications

Trend	Effects	Potential Ferry Implications
1. Rapid adoption of vehicle automation	<ul style="list-style-type: none"> • Increased use collective transport (e.g. “robotaxis,” etc.) to access ferries • Likely to be significant within 20-30 years 	<ul style="list-style-type: none"> • Steadily reduced need for vehicles to be carried on ferries • Challenge of automated vehicles being able to operate on ferries with parking and close-quarter manoeuvres • Flexible (i) Vessels and (ii) Terminal design to adapt to shifts in vehicle and service type
2. Faster communications and the Internet of Things (IoT)	<ul style="list-style-type: none"> • Accelerated facilitation of vehicle automation • Easier booking of ‘robotaxis’ and other services • Significant within 5-10 years 	<ul style="list-style-type: none"> • Need for high speed data communications on ferries to allow vehicle use • Potential need for both ferry terminals and vessels to be specially configured to accommodate and communicate with automated vehicles and conventional vehicles
3. Increasing electrification of vehicles	<ul style="list-style-type: none"> • Accelerated adoption of automated and electric vehicles • Significant change within 5-10 years 	<ul style="list-style-type: none"> • Smaller, lighter vehicles requiring less space in terminals and on-board • Need for charging facilities
4. New materials and manufacturing techniques	<ul style="list-style-type: none"> • Accelerated adoption of automated and electric vehicles • Allow electric propulsion to be more effective due to reduced weight • Trend is occurring today 	<ul style="list-style-type: none"> • Some reduction in weight of vehicles • Smaller, lighter vehicles requiring less space in terminals and on-board
5. Shifting values towards mobility as a service	<ul style="list-style-type: none"> • Greater perception of transport as a commodity rather than individual vehicle ownership • Expectation to be able to travel easily without owning a car • Will be a significant consideration within 10+ years 	<ul style="list-style-type: none"> • Expectation of “whole trip” approach to ferry services – better integrated with transit, ‘robotaxi’, etc. as one trip/ticket • Potential need to consider terminals closer to the centres of metropolitan areas that are well served by transit, accessible by bike and “robotaxi” as well as faster passenger-only ferries • Need for “joined up” planning for complete multi-modal trips from origin to destination

ELEMENTS OF A PROVINCIAL POLICY FRAMEWORK FOR COASTAL TRANSPORTATION

Provision for the free movement of people, goods and services to and through the province and its communities is a core mandate of the provincial government in British Columbia. A significant, although not exclusive, provincial role in coastal transportation has been in place since the Province established the original BC Ferry Authority and nationalized the Black Ball ferry service within British Columbia in 1958. The services provided by BC Ferries have made a vital contribution to the economic and social progress of British Columbia, and it can be assumed that this will continue to be the case into the foreseeable future.

The governance changes implemented in 2003 reflected the principle that government functions whose main purpose is the provision of a service to people should be delivered by entities established with that purpose in mind and be free to operate services as efficiently as possible. Structures that mimic private sector organizations to the extent possible were believed to be the best means of meeting that purpose. The financing of such services through a combination of government subsidies and user fees is a common feature in such structures.

Whether the structure established at that time was or is optimal is not within the purview of this project; suffice to say that the bodies responsible for regulating and monitoring the ferry service are generally satisfied that it is performing well in meeting the goals established for it by government. As demonstrated in this report, however, the ferry service does not exist, and should not be seen, in isolation. It is, rather, a part, albeit a critical part, of a provincial transportation system. The provincial government has a responsibility to see that this system is managed and developed in a way that meets broader provincial objectives for economic development, social equity, environmental protection and greenhouse gas reduction.

The exercise of this provincial responsibility is made particularly complicated by the economic growth and urbanization of the Mainland Southwest and Vancouver Island development regions and the remoteness and slow rate of growth of the North Coast region. The two southern development regions are characterized by major concentrations of population and transportation assets within conurbations around the Salish Sea, which straddles the Canada-US border. These regions have regional transportation systems and transportation plans that give prominence to alternatives to the private automobile and to compact forms of development that can support such alternatives.

None of this changes the fundamental responsibility of the Province to facilitate the movement of people, goods and services within its territory, but it does add complexity and a need for cooperation between the transportation services operated by or on behalf of the provincial government, on the one hand, and other services, whether they be federal port or airport services or regional transit services, on the other.

Future Needs and Opportunities in Coastal Transportation

Within this context, the following elements of a provisional policy framework for coastal transportation are offered:

1. The Province sees coastal transportation services as part of its core responsibility to facilitate the movement of people, goods and services within British Columbia;
2. The services provided by BC Ferries are a central part of the Province's responsibility and should be delivered as efficiently and effectively as possible within a framework provided by the Province. Such a framework should include provincial objectives for a diversity of transportation choices, basic levels of service, fair and equitable treatment of users and the reduction of greenhouse gas emissions.
3. The Province is responsible for coordinating the planning and delivery of transportation services within the Mainland Southwest and Vancouver Island development regions, including the collection of data and the forecasting of travel trends and demands.

These elements of a policy framework are essential to address the gap created by the establishment of BC Ferries as a commercial entity and the growth and complexity of the transportation needs of the metropolitan regions on the Salish Sea.

1.

SUGGESTED DIRECTIONS

The evidence compiled for this report indicates that BC Ferries is performing well in relation to the expectations set out for it by government and its Board. It is also clear from this report, however, that rapidly-unfolding changes in the transportation industry and in the broader society will have a significant impact on BC Ferries operations. In addition, the place of the service within the context of the rapid growth and urbanization of the Mainland Southwest and Vancouver Island regions indicates a need for greater cooperation and coordination between the corporation and the other authorities with responsibility in this area.

The following three suggested directions are addressed to these needs.

1. That BC Ferries give consideration in planning and delivering its services to the trends identified in this report, including:
 - The continued aging and diversification of the population;
 - Climate change, including an increase in severe weather events and sea level rise;
 - The development and deployment of autonomous vehicle technology, faster digital communications and the electrification of vehicles; and
 - The shifting of attitudes regarding transportation from the ownership and use of a vehicle to mobility as a service.
2. That the provincial government initiate and support an ongoing process of “joined-up planning” for transportation in the Mainland Southwest and Vancouver Island development regions that gives emphasis to the facilitation of alternatives to the private automobile, including opportunities for “whole trip” planning for passengers, the use of alternative vehicle formats such as “robotaxis” and opportunities for the development of ferry and road infrastructure that can offer better passenger connections to other modes within the urban regions. Examples of what could be examined include new or relocated ferry terminals, reconfigurations of service to respond to the growth of population south of the Fraser River and consequent amendments to the routes and service provisions of the contract between BC Ferries and the Province.
3. That, as a first step, the provincial government initiate a program of data collection on passenger travel between the Mainland Southwest and Vancouver Island development regions to assist in providing a more seamless service for all transportation system users.

9.3 | COASTAL FERRY SERVICES REVIEW: CLIMATE ACTION ANALYSIS

Final Draft March 10 2013

Coastal Ferry Services Review: Climate Action Analysis

Final – May 2018



By Eric Doherty, RPP, MCIP

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Cover Photo: Illustration of a new hybrid diesel-electric ferry BC Ferries expects to be in service by 2020 in the northern Gulf Islands. The design allows for future expansion of the on board battery capacity to permit plug in electric operation.¹³³ Photo Source: www.bcferrries.com/about/projects/bc-ferrries-newest-class-of-vessels.html

¹³³ BC Ferries media release (June 6, 2017) BC Ferries Awards Contract for Two New Minor Vessels www.newswire.ca/news-releases/bc-ferrries-awards-contract-for-two-new-minor-vessels-626789591.html

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Summary

This report is intended to contribute analysis and information to the Coastal Ferry Services Review regarding how BC Ferries can serve the public interest by contributing to meeting B.C.'s greenhouse gas (GHG) reduction goals.

The B.C. Government recently asserted that "climate change is the greatest challenge of our generation," and in May 2018, introduced legislation to set new GHG reduction targets of 40% below 2007 levels by 2030 and 60% by 2040. The transportation sector is responsible for almost 40% of B.C.'s inventoried GHG emissions.

B.C. Ferries plays an important role in B.C.'s multi-modal transportation network. While many people arrive at BC Ferries terminals in private motor vehicles, a significant proportion of BC Ferries passengers get to and from the terminals on public transit. Others ride bicycles, ride on long distance highway buses, take taxis and even walk to and from terminals.

A key question for this report is if the present model under which BC Ferries operates allows it to effectively contribute to network-wide GHG emissions reduction and to effectively reduce GHG emissions from its own operations.

Importance of Coordination

B.C.'s Auditor General contributed to a recent joint report of Auditors General from across the country on climate action, which details widespread failures to meet past GHG reduction targets. The report, *Perspectives on Climate Change Action in Canada—A Collaborative Report from Auditors General*, asserts that a lack of coordination and contradictory policies are common problems. The Auditors General also recommend that the agency leading GHG reduction efforts be given the resources and authority needed to be effective.

An example of contradictory policies is that Metro Vancouver Regional District (MVRD) plans emphasize transit, walking, and cycling along with compact development patterns as ways to reduce greenhouse gas emissions from transportation. However, past provincial policies favored major road expansion projects that increase sprawl and GHG emissions. The conflict is illustrated by the MVRD vote to oppose the replacement of the four-lane Massey Tunnel with a ten-lane bridge (which is presently on hold and under review).

Climate Action

It is widely accepted that shifting travel to modes that emit less GHGs per passenger kilometre is an essential component of climate action plans, and the Government of B.C. signed on to the *Pan-Canadian Framework on Clean Growth and Climate Change* which includes a commitment to "shift from higher to lower-emitting types of transportation." A large modal shift to public

transit would affect BC Ferries operations, and the outcome is much more likely to be positive if anticipated and planned for.

Shifting to low-emissions energy sources for vehicles and equipment is also an important part of any climate action strategy, and electricity seems to be becoming the dominant low-GHG energy source for most applications. Rapid reductions in the price of batteries and the scaling up of electric vehicle and component manufacturing means that widespread adoption of electric vehicles is now much more economical than even three years ago.

It has also recently become cost effective to run many ferries on electricity. European ferry operators are claiming impressive cost savings and deep GHG emissions reductions from plug in battery electric ferries, and both new electric ferries and conversions of existing ferries are on order. BC Ferries is investigating the feasibility and economics of electrifying at least some routes, and the latest ferries on order are designed for conversion to plug in electric.

Some energy sources have higher lifecycle GHG emissions than manufacturers claim. Recent research into overall methane emissions from liquefied natural gas (LNG) has cast real doubt on even the modest lifecycle GHG reductions claimed by suppliers. BC Ferries is planning to retrofit the large Spirit Class ferries to run on LNG. Investing heavily in converting ferries to LNG might meet a short term target (perhaps based on overly optimistic lifecycle GHG values) when conversion to battery electric power is needed to meet longer term targets.

Considering multiple benefits

As the Auditors General of B.C. and Canada have established, the primary benefit of GHG reduction is in reducing the overwhelming economic, social and environmental costs of unmitigated climate change. However, in the transportation sector many GHG reduction actions have co-benefits so large that the actions would be worthwhile even without the GHG reduction benefits. Benefits include health, affordability, and quality of life.

The Government of B.C. is in the process of developing a new climate action plan, and has indicated that the new plan will consider multiple objectives including “maximizing job and economic opportunities.” In B.C., the employment and economic development benefits of carefully designed GHG reduction measures in the transportation sector could be very substantial.

A carefully designed effort to prioritize transit, cycling and walk-on connections to BC Ferries terminals could also reduce the number of people traveling with vehicles left behind by full ferries.

BC Ferries governance model and climate action

BC Ferries operates independently of the provincial government, and is guided by the Coastal Ferry Act and the Coastal Ferry Services Contract. Neither the Act nor Contract seem to give BC Ferries a clear mandate to consider the public interest in GHG reduction. BC Ferries seems to need three things to act effectively in the public interest with regard to GHG emissions:

- 1) A clear mandate. For example the Coastal Ferry Act and/or the Coastal Ferry Services Contract could be amended to include consideration of the public benefit in reducing GHG emissions.
- 2) A way to fund GHG reduction initiatives. For example, incentives provided by Government (through a Coastal Ferry Services Contract amendment or separately).
- 3) A coordinating agency with the authority needed to get multiple provincial ministries and agencies working in concert.

Illustrative Examples

There are many actions BC Ferries could take to reduce GHG emissions and produce co-benefits. This report includes illustrative examples divided into four categories: Reducing direct emissions, shifting to low-GHG modes, facilitating electric vehicles, and other actions.

Key Recommendations

This report includes a set of key recommendations including providing BC Ferries with a clear mandate to consider the public interest in reducing GHG emissions, and ensuring that the provincial agencies BC Ferries will need to cooperate with have complementary mandates. Another is to create a coordinating agency to lead GHG reduction efforts in the transportation sector.

The immediate actions recommended are for BC Ferries to review all major planned capital expenditures, and for Government to review all major capital expenditures planned for highway routes connecting to BC Ferries terminals, in light of B.C.'s GHG reduction targets.

Conclusion

The Government of B.C. has committed to producing a climate action plan for the transportation sector in the fall of 2018. This new plan has a much better chance of succeeding thanks to the Auditors General's guidance. However, there are decisions that don't need to wait for a new climate plan. Every month that BC Ferries continues without a clear climate action mandate is a month spent drifting, rudderless, when real progress is urgently needed.

Introduction

Climate analysis in Coastal Ferry Services Review

This report is intended to contribute analysis and information to the Coastal Ferry Services Review regarding how the coastal ferry system and BC Ferries can best contribute to meeting B.C.'s greenhouse gas reduction targets.

The objectives of the Coastal Ferry Services Review include ensuring “that the model is operating in the public interest.” As documented in this report, the Government of British Columbia has determined that meeting their greenhouse gas (GHG) reduction targets is very much in the public interest.

Since the transportation sector is responsible for almost 40% of B.C.'s inventoried GHG emissions, and BC Ferries routes are crucial components of B.C.'s transportation system, examining BC Ferries' potential role in reducing GHG pollution is important for meeting B.C. GHG reduction targets. There are also other public interest factors, such as public health, and employment and affordability, which can be improved by the same measures that reduce GHG emissions from transportation.

B.C. Government's climate commitment and GHG reduction targets

The B.C. Government response to the Auditor General of B.C.'s climate audit, which was released in February 2018, states:

“Climate change is the greatest challenge of our generation. It is felt in British Columbia and around the world, affecting almost all aspects of our lives. We agree with the Auditor General that acting on climate change . . . is necessary now and will require a concerted effort for the foreseeable future.”¹³⁴

In May 2018, the B.C. Government introduced legislation to set new GHG reduction targets of 40% below 2007 levels by 2030, 60% below 2007 levels by 2040, and leaving the 80% reduction by 2050 target unchanged.

The Government of B.C. has stated an overwhelming public interest case for all agencies of government working together in a concerted way to meet the 2030, 2040 and 2050 GHG reduction targets.

BC Ferries' role in multi-modal network

B.C. Ferries plays an important role in B.C.'s multi-modal transportation network. While many people arrive at BC Ferries terminals in private motor vehicles, a significant proportion of BC

¹³⁴ Managing Climate Change Risks: An Independent Audit. www.bcauditor.com/pubs/2018/managing-climate-change-risks-independent-audit (p 17)

Ferries passengers get to and from the terminals on transit provided by BC Transit and TransLink. Others ride bicycles, ride on long distance highway buses, take taxis and walk to and from terminals. Even at the more northern BC Ferries terminals some passengers connect to modes other than the private automobile, such as water taxis and long-distance highway buses.

Transit ridership is highest at Metro Vancouver locations, but is significant even at fairly rural locations such as Salt Spring Island and the southern part of the Sunshine Coast. At peak travel times, considerably more people traveling with their vehicles would have to wait for the next sailing if public transit service and other options did not exist.

One of the most common actions in GHG reduction plans is prioritizing low carbon modes such as public transit, walking and cycling over private automobiles. B.C. Ferries, along with many other organizations, make decisions that amount to prioritization of different transportation modes. The modes that are improved, or made relatively less expensive, are to some degree the modes that people will choose to use. If BC Ferries prioritizes connections with low carbon modes, it will make B.C.'s overall efforts more effective.

Another common action in GHG reduction plans is encouraging low GHG emission vehicles, such as electric cars and trucks. A successful vehicle electrification program will likely require charging stations at locations, such as ferry terminals, where vehicles on longer trips can charge while stopped for other reasons.

Many agencies make decisions that impact the GHG emissions from transportation, and a key question for this report is if the present model under which BC Ferries operates allows it to effectively contribute to network-wide GHG emissions reductions. The ability of BC Ferries to effectively reduce direct GHG emissions from its own operations under the present model is also an important, and interconnected, issue.

Importance of Coordination

Auditors General detail failures of coordination in Canadian GHG reduction efforts

In February 2018 the Auditor General of B.C., Carol Bellringer, published *Managing Climate Change Risks: An Independent Audit*. In the introduction, the Auditor General states that:

“Climate change is one of the greatest challenges the world is facing. Over the past months, natural disasters have made headlines across the globe. Here in B.C., we too, are already feeling the impacts of climate change. The summer of 2017 saw wildfires burning across the province, breaking records for the greatest number of hectares burned. This past spring, heavy rains combined with the snowmelt and flooded the Okanagan.

These events highlight the environmental, economic and social threats that climate change poses to the province.”

The Audit also bluntly concludes that “Government has not taken adequate action to meet provincial emission reduction targets.”¹³⁵

Only two months later, the Auditor General of Canada along with Legislative Audit Offices from provinces including B.C. published the report *Perspectives on Climate Change Action in Canada—A Collaborative Report from Auditors General*. This unprecedented report also starts by defining climate change as an economic, social, and environmental issue, and asserts that “Governments across Canada consider climate change a defining challenge of the 21st century.”(p3). The finding that climate change is an economic, social and environmental threat means that climate change is not an ‘environmental’ problem that can be balanced off against social and economic factors – climate change is a major threat in all three categories.

Prominent in the Auditors General’s list of key issues is the lack of coordination leading to problems including contradictory policies:

Audits at federal, provincial, and territorial levels found that there was limited coordination within governments around climate change action. . . . In many cases, limited coordination led to an ad hoc response to climate change. Without effective coordination, governments might overlook important opportunities or challenges, or develop redundant or contradictory policies (p 5).

Auditors General recommendations on coordination and authority

The Auditor General of B.C.’s audit touches on the question of coordination between different ministries and agencies:

“Our document review and interview evidence demonstrated the importance of considering policies and actions as a group (not independently). Policies and actions can work on different timescales and impact each other. This highlights the importance of having a complementary suite of policies that can reinforce and build upon each other” (95).

However, the collaborative report from Auditors General from across the country which incorporated findings from the B.C. audit examines the question of coordination in more detail. Rather than a list of recommendations, the Auditors General raise critical questions aimed at resolving coordination problems, as well as improving monitoring and reporting:

¹³⁵ *Managing Climate Change Risks: An Independent Audit* (p 9) www.bcauditor.com/pubs/2018/managing-climate-change-risks-independent-audit

“Most auditors across the country found that there was limited coordination among government departments and agencies, and where included in the audit scope, between provinces or territories and local governments. Without effective coordination, government responses to climate change may be ad hoc and inefficient.

- How will governments ensure that all the relevant players are involved in developing climate change strategies?
- How will governments ensure that lead departments on climate change are given the resources and authority they need to provide leadership to other departments and agencies?
- How will governments ensure that policies within different jurisdictions are complementary rather than redundant or contradictory?

Monitoring and reporting

Auditors found that governments were often not monitoring their progress on climate change and not reporting regularly to the public on that progress.

- What steps will governments take to regularly keep the public informed of their progress toward meeting their climate change commitments?
- What measures will governments use to assess their progress?” (26)

One of the positive examples of coordination in the report is the inclusion of “roles and responsibilities of departments and corporations” in Yukon’s climate plan (14). The Auditors General also noted that in Ontario the “Ministry of Environment and Climate Change was the lead for coordinating and reporting on the progress of climate change initiatives, but it did not have the authority to require ministries to take specific actions to reduce emissions” (20).

The Auditors General have provided Government with a solid framework with which to assess any GHG reduction effort in the transportation sector, including the specific case of BC Ferries.

Multi-modal coordination

B.C. has an apparent problem with lack of coordination for GHG reduction in the transportation sector, at least in Metro Vancouver. And BC Ferries’ busiest routes connect to Metro Vancouver’s transportation network.

Both the Metro Vancouver Regional District and the Capital Regional District have transportation and land use plans that emphasize transit, walking, and cycling along with compact development patterns as ways to reduce greenhouse gas emissions from transportation (it is well established that urban highway expansion leads to increased vehicle

travel, automobile dependent sprawl, and increased GHG emissions).¹³⁶ However, past provincial policies (and those of some municipalities) seemed to be going in the opposite direction, with major road expansion projects that increase sprawl and GHG emissions still being funded. As discussed above, the Auditors General recent report found that contradictory policies like these are common in Canada and are a major contributor to past failures to reach GHG emission targets.

The problem is illustrated by the conflict between the Metro Vancouver Regional District (MVRD) and past provincial governments over transportation infrastructure priorities. The MVRD Board voted to oppose both the Port Mann Bridge / Highway 1 expansion and the proposed replacement of the four-lane Massey Tunnel with a ten-lane bridge (which is presently on hold and under review). In both cases the MVRD proposed that public transit should be a higher priority than these urban highway expansion projects.

Climate action in B.C.'s multi-modal network

Prioritizing low GHG transportation modes

It is widely accepted that shifting travel to modes that emit less GHGs per passenger kilometre is an essential component of climate action plans. Targets for mode share and limiting or reducing vehicle kilometres traveled (VKT) by private automobile are common.

TransLink's current plan acknowledges that spending on general purpose capacity expansion to the Major Road Network (MRN) in Metro Vancouver would increase VKT and GHG emissions and undo some the GHG reductions from transit improvements.¹³⁷ The business as usual version of the plan forecasts a slight increase in GHG emissions over the next decade as a result. However, MRN funds don't have to be spent on general purpose capacity expansions, and can be spent instead on things that effectively reduce VKT and GHG emissions, such as bus lanes, bus ways and protected bicycle lanes.¹³⁸ If a slight increase in GHG emissions is to be changed into a decisive downwards trajectory as required to meet provincial climate targets, it will be necessary to get VKT trending downwards as well.

The Government of B.C. signed on to the *Pan-Canadian Framework on Clean Growth and Climate Change* in 2016. The *Framework* commits the federal and provincial governments to "shift from higher to lower-emitting types of transportation, including through investing in

¹³⁶ E.g. Clark Williams-Derry (2007) *Increases in greenhouse-gas emissions from highway-widening projects*. Sightline Institute. www.jtc.sala.ubc.ca/reports/analysis-ghg-roads.pdf

¹³⁷ General purpose lanes are lanes open to use by all types of vehicles including cars and light trucks occupied by only the driver (single occupant vehicles).

¹³⁸ TransLink Mayors' Council (2015). *Regional Transportation Investments: a Vision for Metro Vancouver* www.translink.ca/-/media/Documents/about_translink/governance_and_board/mayors_vision/mayors_council_vision_mar_2015.pdf Appendices https://www.translink.ca/-/media/Documents/about_translink/governance_and_board/mayors_vision/mayors_council_vision_appendices_june_2014.pdf

infrastructure." Examples of this shift include shifting from private motor-vehicles to transit and cycling as well as shifting freight from trucks to rail. Implementing this provision of the Framework could, depending on how the funds are allocated, produce a decided downward trend in VKT and a very sharp upward trend in urban transit and longer-distance highway bus ridership.¹³⁹

The Canadian Centre for Policy Alternatives report *Transportation Transformation: Building complete communities and a zero-emission transportation system in BC* suggests that over one billion dollars per year could be re-allocated to low-carbon modes in B.C.¹⁴⁰ Canadian transportation authors Richard Gilbert and Anthony Perl suggest that reducing spending on highway and airport expansion is as important as increasing spending on low carbon transportation, asserting that spending on both at the same time is "analogous to applying a car's accelerator and brake at the same time".¹⁴¹

A large modal shift to transit would affect BC Ferries operations and finances, regardless of if BC Ferries is planning for, and contributing to, the shift or not. Similarly, a shift to autonomous vehicles (self-driving cars) could greatly increase the proportion of foot passengers traveling on BC Ferries and reduce the number of passenger vehicles carried. The outcome is much more likely to be positive if these shifts are anticipated and planned for.

Decarbonization through electrification - road vehicles and ferries

Shifting to low-emissions energy sources for vehicles and equipment is an important part of any climate action strategy in the transportation sector, and electricity seems to be becoming the dominant low-GHG energy source for most applications.¹⁴² Rapid reductions in the price of batteries and the scaling up of electric vehicle and component manufacturing means that widespread adoption of electric vehicles is now much more economical than even three years ago.¹⁴³ It now costs about the same to run high-usage urban vehicle such as taxis, transit buses and delivery vans on electricity as on fossil fuels.¹⁴⁴

It has also recently become cost effective to run many ferries on electricity. European ferry operators are claiming impressive cost savings and deep GHG emissions reductions from

¹³⁹ One example of a measure that has the potential to quickly bring VKT down and transit ridership up is 24/7 bus lanes. See e.g. Eric Doherty (2016). "Let's follow Seattle's lead and create designated bus lanes" <http://theprovince.com/opinion/eric-doherty-lets-follow-seattles-lead-and-create-designated-bus-lanes>

¹⁴⁰ Patrick Condon, Eric Doherty, Kari Dow, Marc Lee & Gordon Price (2011) www.policyalternatives.ca/transportationtransformation

¹⁴¹ Richard Gilbert and Anthony Perl (2010) *Transport Revolutions: Moving People and Freight Without Oil* (New Society Publishers) p 47

¹⁴² e.g. Andrew Rowe, Peter Wild and Bryson Robertson (Nov 13, 2017) Canada's Paris Agreement obligations means a herculean electrification effort. www.theglobeandmail.com/opinion/canadas-paris-agreement-obligations-means-a-herculean-electrification-effort/article36933939/; Pan-Canadian Framework on Clean Growth and Climate Change (2017) <https://www.canada.ca/en/services/environment/weather/climatechange/pan-canadian-framework.html>

¹⁴³ E.g. Jeremy Hodges (March 22, 2018) "Electric Car Costs Set to Fall: Batteries will become cheaper as production levels increase, technology improves" www.bloomberg.com/news/articles/2018-03-22/electric-car-costs-set-to-fall

¹⁴⁴ E.g. Small electric vans cost the same as dirty diesel ones today but are in short supply (2018) www.transportenvironment.org/press/small-electric-vans-cost-same-dirty-diesel-ones-today-are-short-supply

electric ferries, and both new electric ferries and conversions of existing ferries are on order.¹⁴⁵ Washington State Ferries is planning to convert their largest ferries to battery electric operation, pending funding from the state and federal governments.¹⁴⁶

BC Ferries is already investigating the feasibility and economics of electrifying at least some routes in cooperation with engineers at the University of Victoria.¹⁴⁷ BC Ferries recently ordered two diesel-electric hybrid ferries with a design that allows for future expansion of the on board battery capacity to permit plug in electric operation.¹⁴⁸ Assessing the feasibility of electrification of each of BC Ferries routes is beyond the scope of this report, but most of the shorter routes are likely good candidates. Given that the European Union is now investigating the feasibility of converting ferry routes of over 3 hours duration, with the participation of Corvus Energy of Richmond B.C., it may become feasible to electrify most of BC Ferries' routes.¹⁴⁹

It is important to note that some energy sources once touted as being low GHG have turned out to have higher lifecycle GHG emissions than manufacturers claimed. For example, much of the world's biodiesel supply may have lifecycle GHG emissions as high as or higher than conventional diesel fuel.¹⁵⁰ Similarly, recent research into overall methane emissions from liquefied natural gas (LNG) has cast real doubt on even the modest lifecycle GHG reductions claimed by suppliers. In contrast, converting from fossil fuels to renewable electricity seems to produce impressive and verifiable GHG reductions, as long as the GHG footprint of the electricity is low as it is in B.C.¹⁵¹ BC Ferries uses some biodiesel, has new LNG ships in service, and is planning to retrofit the large Spirit Class ferries to run on LNG.

Costs of uncoordinated approach

As the Auditors General of B.C. and Canada have documented, an uncoordinated approach guarantees failure to reduce GHG emissions as required to meet B.C.'s 2030 target. However, it also means different parts of our multi-modal transportation network not working together efficiently. This entails financial costs on families, individuals, governments and private businesses.

¹⁴⁵ E.g. A new fleet of all-electric ferries with massive battery packs is going into production (2018) <https://electrek.co/2018/03/05/all-electric-ferries-battery-packs/>

¹⁴⁶ Michelle Baruchman (May 4, 2018) Washington State Ferries plans to convert its biggest vessels to electric power.

www.seattletimes.com/seattle-news/transportation/washington-state-ferries-plans-to-convert-its-biggest-vessels-to-electric-power/

¹⁴⁷ Jody Paterson (April 27, 2018) Greener ships, cleaner ocean www.uvic.ca/news/topics/2018+knowledge-greener-ships-dong+news

¹⁴⁸ BC Ferries media release (June 6, 2017) BC Ferries Awards Contract for Two New Minor Vessels www.newswire.ca/news-releases/bc-ferries-awards-contract-for-two-new-minor-vessels-626789591.html

¹⁴⁹ Corvus Energy Media Release (April 3, 2018). *Stena Line and Callenberg select Corvus Energy for Battery-Powered Ferry*.

<http://corvusenergy.com/stena-line-and-callenberg-select-corvus-energy-for-battery-powered-ferry>

¹⁵⁰ Carl Meyer (April 30, 2018). *Canada's math may overlook carbon pollution from biofuels*

www.nationalobserver.com/2018/04/30/news/canadas-math-may-overlook-carbon-pollution-biofuels; Transport & Environment (2016) Globiom: the basis for biofuel policy post-2020

www.transportenvironment.org/sites/te/files/publications/2016_04_TE_Globiom_paper_FINAL_0.pdf

¹⁵¹ Dr. Maarten Messagie (2014) Life Cycle Analysis of the Climate Impact of Electric Vehicles

www.transportenvironment.org/sites/te/files/publications/TE%20-%20draft%20report%20v04.pdf

One risk for BC Ferries is that it will not be prepared for a substantial modal shift from private automobiles to people arriving and departing via public transit, bicycle, and potentially autonomous vehicles (self-driving cars) providing taxi-like services.¹⁵² Partially empty car decks combined with overcrowded foot passenger facilities would not be a positive outcome for passengers or BC Ferries.

Another risk of an uncoordinated approach is that efforts to meet short term GHG emissions targets could inhibit measures needed to meet longer term GHG targets. For example, investing heavily in converting ferries to LNG might meet a short term target (perhaps based on overly optimistic lifecycle GHG values) when conversion to battery electric power is needed to meet longer term targets.

An uncoordinated approach also means foregoing some of the multiple co-benefits of effective GHG reduction in the transportation sector.

Considering multiple benefits

As the Auditors General of B.C. and Canada have established, the primary benefit of GHG reduction is in reducing the overwhelming economic, social and environmental costs of unmitigated climate change. However, in the transportation sector many GHG reduction actions are *no regrets actions* with co-benefits so large that the actions would be worthwhile even without the GHG reduction benefits.¹⁵³ Put another way, these actions have a negative or zero net cost per unit of GHG emission reduction.

The Government of B.C. is in the process of developing a new climate action plan, and has indicated that the new plan will consider multiple objectives including economic stability and diversification, and “maximizing job and economic opportunities.”¹⁵⁴ In a province like B.C., which imports oil for transportation fuel and does not manufacture automobiles, the employment and economic development benefits of carefully designed GHG reduction measures in the transportation sector could be very substantial.¹⁵⁵

One of the primary benefits of shifting away from an automobile dependent transportation system is that it makes life more affordable. A good multi-modal network allows households to spend less on transportation. Some of this savings is from reduced operating costs, such as less

¹⁵² The future of autonomous vehicles is highly uncertain, but policy options are available to regulate and/or incentivize low GHG emission shared use vehicles over types that would increase traffic volumes. E.g. Jacques Leslie (January 8, 2018) *Will Self-Driving Cars Usher in a Transportation Utopia or Dystopia?* <https://e360.yale.edu/features/will-self-driving-cars-usher-in-a-transportation-utopia-or-dystopia>

¹⁵³ E.g. Todd Litman (2017) *Win-Win Transportation Emission Reduction Strategies* www.vtpi.org/wwwclimate.pdf

¹⁵⁴ “Response from the Auditees” in *Managing Climate Change Risks: An Independent Audit* www.bcauditor.com/pubs/2018/managing-climate-change-risks-independent-audit. (17-18)

¹⁵⁵ Eric Doherty (2015) *Making the Most of the Transit Referendum: Transportation Investments to Create More Jobs and Reduce Pollution*. http://ecoplanning.ca/wp-content/uploads/2011/01/Make_Most_of_Transit_Report-FinalApril212015.pdf

gasoline and car maintenance. However, a big factor is that a multi-modal network including better transit allows people to live well with fewer cars and fewer parking spots.¹⁵⁶

The physical and mental health benefits of shifting away from a transportation system dominated by the automobile to a more multi-modal system are extremely important. The BC Healthy Living Alliance asserts that these health benefits “come from increases in physical activity and accessibility, and reductions in traffic congestion, injuries, localized air pollution and greenhouse gas emissions that contribute to climate change”.¹⁵⁷

Carefully designed GHG reduction strategies can also contribute to housing affordability, poverty reduction and accessibility of health services. The Canadian Centre for Policy Alternatives report *Transportation Transformation: Building Complete Communities and a Zero-Emission Transportation System in BC* proposes measures to enhance equality and quality of life while winning over the wide range of households who are dependent on cars for their mobility because they have ‘just played by the rules.’ This report details potential actions and co-benefits for smaller B.C. communities and rural areas, as well as suburban and urban areas.¹⁵⁸

A carefully designed effort to prioritize transit, cycling and walk-on connections to BC Ferries terminals could also have benefits for people who need to bring their vehicles on board at busy times. If more people are travelling as foot passengers, then those traveling with vehicles are less likely to be left behind by a full ferry.

BC Ferries is considering battery electric propulsion for their vessels, and is a member of Green Marine which considers underwater noise to be a serious concern in areas where marine mammals are present.¹⁵⁹ Reduced underwater noise from converting to electric propulsion could be a significant co-benefit, considering endangered orca whales are often near BC Ferries’ busiest routes. It may also be more economically advantageous for BC Hydro to sell electricity to BC Ferries than to export the same power.

Best practices for climate action and enhancing multiple benefits

The European iTransfer sustainable ferry travel initiative published a number of reports with many recommendations for good and innovative practices, including information on integrating ferries into public transit networks to facilitate mode shifts to transit from private passenger vehicles.¹⁶⁰

¹⁵⁶ Todd Litman (2017) Victoria Transport Policy Institute. *Transportation Affordability Evaluation and Improvement Strategies* www.vtpi.org/affordability.pdf

¹⁵⁷ *BC on the Move – in a healthier direction* (no date) www.bchealthyliving.ca/bc-on-the-move-in-a-healthier-direction

¹⁵⁸ Patrick Condon, Eric Doherty, Kari Dow, Marc Lee & Gordon Price (2011) www.policyalternatives.ca/transportationtransformation

¹⁵⁹ BC Ferries Business Plan for the year ending March 31, 2018. (p22) www.bcferries.com/files/PDFs/2018_Business_Plan.pdf

¹⁶⁰ Sustainable ferry transport: delivering innovative passenger transport solutions across rivers and estuaries in the North Sea Region (2014) http://archive.northsearegion.eu/files/repository/20140306180204_iTRANSFERBROCHURERE2014.pdf; iTransfer case study 11. Seamless transport solutions: through-ticketing system http://archive.northsearegion.eu/files/repository/20141201190007_iTRANSFERCASESTUDY11-

The Washington Maritime Federation's Maritime Blue initiative also provides an interesting vision of maximizing multiple benefits while reducing GHG emissions in the marine sector.¹⁶¹

"Washington State will be home to the nation's most sustainable maritime industry by 2050. It will lead the country in the maritime shift towards decarbonization, clean technology innovation and best management practices that will support a strong maritime economy with living-wage jobs, a healthy environment and resilient communities."

These resources provide many examples of what BC Ferries could contribute to reduce GHG emissions and maximize co-benefits. However, some actions could be inhibited by the operating model BC Ferries works within unless changes are made.

BC Ferries governance model and climate action

BC Ferries operates independently of the provincial government, and is guided by the Coastal Ferry Act of 2003. The provincial government provides funding to BC Ferries through the Coastal Ferry Services Contract, which sets routes and service levels. BC Ferries aptly describes the governance arrangement as "a complex legislative and economic regulatory framework."¹⁶² The Coastal Ferry Act specifies that BC Ferries should take a "commercial approach" to providing services. However, the Provincial Cabinet appoints a Ferry Commissioner whose role includes considering the public interest, from the point of view of ferry users and taxpayers.

Neither the Commissioner nor Boards of Directors of the B.C. Ferry Authority or British Columbia Ferry Services presently seem to have a clear mandate in the Coastal Ferry Act or the Coastal Ferry Services Contract to consider the public interest in GHG emissions reduction.¹⁶³

BC Ferries has taken some good steps towards reducing direct GHG emissions from ferry operations under the present governance model. However, as the Auditors General have established, meeting B.C.'s 2030 GHG reduction target will require much more ambitious action.

It also seems crucial to consider the B.C. Auditor General's direction to consider "policies and actions as a group (not independently)" (95). BC Ferries cannot be effective in reducing GHG emissions across B.C.'s transportation network if it acts in isolation. Multiple agencies will need to be similarly empowered and supported to act.

[SEAMLESSTRANSPORTSOLUTIONSAW.pdf](#) Note: The iTransfer project website is not active. Some documents are available from archive.northsearegion.eu

¹⁶¹ www.maritimefederation.com/about-wa-maritime-blue.html

¹⁶² *Business Plan for the year ending March 31, 2018*. (p 5) www.bcferries.com/files/PDFs/2018_Business_Plan.pdf

¹⁶³ One way to provide BC Ferries with a climate action mandate would be to amend Section 38(1) of the Coastal Ferry Act regarding the role of the Commissioner, adding to the principles for the Commissioner to consider.

Taking the Auditors General's findings into account, BC Ferries seems to need three things to act effectively in the public interest with regard to GHG emissions:

- 1) A clear mandate from Government. For example the Coastal Ferries Act could be amended to allow the Commissioner to consider the public benefit in reducing GHG emissions, and/or the Coastal Ferry Services Contract could be similarly amended.
- 2) A way to fund GHG reduction initiatives and actions. For example, incentives provided by Government (through a Coastal Ferry Services Contract amendment or separately) and/or revisions to the Coastal Ferry Act to provide authority to take actions beyond what would be a normal commercial approach.
- 3) A coordinating agency with the authority needed to get multiple provincial ministries and agencies working in concert, as well as having the resources to provide funding for significant initiatives and incentives.

Prescribing exactly how this should be done is beyond the scope of this report. However, given the complexity of the multi-modal transportation network in B.C., it seems likely that a dedicated agency (perhaps a branch of the Climate Action Secretariat) will be needed to coordinate GHG reduction actions in the transportation sector. The B.C. Crown Corporations Secretariat of the 1990s might be a useful model to build on in creating this agency. The provincial agencies that BC Ferries will need to coordinate with, in a successful transportation network-wide GHG reduction effort, will include BC Transit (under Ministry of Transportation and Infrastructure) and TransLink (under Ministry of Municipal Affairs & Housing). Successful coordination is unlikely unless all these agencies also have the mandate and support to act decisively.

Illustrative Actions:

There are many actions BC Ferries could take to reduce GHG emissions and produce co-benefits. These illustrative examples are divided into four categories: Reducing direct emissions, shifting to low-GHG modes, facilitating electric vehicles, and other actions.

Reducing direct emissions

- Converting existing ferries to be capable of operating on 'plug in' electric power, starting with shorter routes and vessels due for major refits.
- Specifying that new ferries be 'plug in' electric, or at least designed for easy conversion to battery electric power. (Given the long life of new ferries, battery and/or hydrogen fuel cell electric power may become practical for even the longest BC Ferries routes).
- Working with BC Hydro to install charging facilities for ferries wherever practical, and to plan electricity grid upgrades where necessary for future charging facilities.
- Implementing energy efficiency measures, such as slower vessel travel speeds.

- Purchasing electric vehicles for BC Ferries' fleet.
- Improving energy efficiency and converting space and water heating to electric power in BC Ferries terminals and other buildings.

Shifting to low-GHG modes

- Reducing foot passenger fares relative to vehicle fares, and eliminating extra charges for bicycles.
- Increasing the convenience of purchasing transit fares on BC Ferries vessels. This could start as simply as selling and advertising BC Transit and TransLink transit tickets and day passes on board. (BC Ferries already sells TransLink day passes on board larger ferries).
- Working with TransLink and BC Transit to better integrate fare payment systems and incentivise transit ridership. For example, making it possible to use TransLink's Compass Cards on BC Ferries and BC Transit or providing transit fare-free to the Canada Line in Richmond where there is a large bank of ticket / Compass Card machines.
- Working with other agencies to better integrate ferry, long distance bus, passenger train, and air travel reservations and ticketing (with the objective of making low GHG modes more appealing).¹⁶⁴
- Increasing the capacity and quality of foot passenger and transit facilities at terminals. For example, providing covered and sheltered areas for people waiting to purchase BC Ferries tickets and for people boarding transit buses.
- Working with BC Transit and TransLink to reduce waiting times for transit riders at terminals, for example by having some buses leave as soon as they are full rather than waiting for a scheduled departure time.
- Coordinating with the Ministry of Transportation and Infrastructure to improve transit priority measures, such as highway shoulder bus lanes, on congested routes connecting with ferry terminals.
- Improving the experience for people with disabilities and seniors traveling by bus and ferry, for example by reducing the walking-rolling distance between ferries and buses.
- Surveying passengers to determine what would make their transit-ferry trip better.
- Working in cooperation with other agencies to improve cycling routes from ferry terminals to destinations including transit exchanges. For example, from Tsawwassen Ferry Terminal to the Ladner Transit Exchange.
- Improve facilities for people riding bicycles in terminals and onboard ferries.
- Providing passenger-only ferry service in a way that increases the relative convenience of low GHG modes. For example, by alternating passenger-only and vehicle ferries on the same route (foot passengers would have twice the sailings to choose from).

¹⁶⁴ For discussion of shifts to efficient modes, including for short haul air travel see Richard Gilbert and Anthony Perl, *Transport Revolutions: Moving People and Freight Without Oil* (second edition, New Society Publishers 2010)

- Planning to increase the passenger carrying capacity of ferries relative to capacity for vehicles.
- Setting goals for increasing the ratio of foot passengers to automobiles, and regularly reporting on progress.

Facilitating electric vehicles

- Installing electric charging facilities at ferry terminals, and creating an arrangement so people can charge vehicles, including buses and heavy trucks, while waiting to board ferries.
- Implementing incentives for electric vehicles use, such as discounted fares for all types of electric vehicles.

Other actions

- Exploring ways to reduce the GHG footprint of food served on BC Ferries.
- Making it easier for passengers to avoid using single use products, such as plastic water bottles. For example, by installing water fountains and water bottle filling stations.
- Auditing BC Ferries operations to find other ways to reduce the GHG footprint of operations.

Key Recommendations:

The Auditors General of Canada have provided Governments with a solid framework with which to assess any GHG reduction effort in the transportation sector, including the specific case of BC Ferries. Many of these recommendations are informed by the Auditors General's reports:

1) Mandate and Incentives:

- Government should provide BC Ferries with a clear mandate to consider the public interest in reducing GHG emissions, such as by amending the Coastal Ferry Act with regard to the role of the Commissioner and/or amending the Coastal Ferry Services Contract.
- Government should consider providing BC Ferries with incentives (through a Coastal Ferry Services Contract amendment or separately) and/or a mandate in the Coastal Ferries Act to enhance co-benefits of GHG reduction actions, including job creation and economic diversification. This could specifically apply to enhancing the capacity of B.C. shipyards and electrical technology companies to produce electric powered vessels and to convert existing vessels to plug in electric power.¹⁶⁵
- The Board of BC Ferries should give BC Ferries management a strong mandate to reduce direct GHG emissions from BC Ferries operations, and to cooperate with other agencies to reduce emissions across the transportation network.

¹⁶⁵ An example of an existing electrical technology company is Corvus Energy of Richmond BC, which provides battery technology for electric drive ships worldwide. See www.corvusenergy.com

- Government should ensure that the provincial agencies BC Ferries will need to cooperate with, BC Transit, TransLink, and the Ministry of Transportation and Infrastructure have complementary mandates and support.
- Government should ensure that BC Hydro is planning to meet the heavy loads associated with charging facilities for ferries at terminals, and can offer pricing and incentives more favorable than those available for fossil fuels, including LNG.¹⁶⁶

2) Considering Multiple Benefits

- Techniques, such as multiple account evaluation, should be used to evaluate the multiple benefits and costs of different options in a way that is transparent and accessible to the public.

3) Coordinating Agency

- Government should create a coordinating agency to lead GHG reduction efforts in the transportation sector. This agency should be designed to address the coordination, capacity, and authority problems identified by the Auditors General.
- This agency should have an adequate number of qualified staff to support ministries and agencies including BC Ferries, the financial capacity to provide incentives and fund projects, and the authority to require action from ministries and agencies.
- This agency should be involved in monitoring progress on GHG reductions, and should make their findings public. This monitoring should include independent evaluations of claims regarding the lifecycle GHG emissions of fuels and energy sources.

4) Immediate Actions

- BC Ferries should review all major planned capital expenditures, in particular any new vessel purchases, major refits, and major work on terminals, in light of B.C.'s GHG reduction targets. The review should consider both direct emissions and the impact on emissions from the transportation network.
- Government should review all major capital expenditures planned for highway routes connecting to BC Ferries terminals in light of the need to reduce vehicle traffic volumes to meet B.C.'s GHG reduction targets.

Conclusion

BC Ferries does not yet have a clear mandate to serve the public interest by contributing to meeting B.C.'s greenhouse gas reduction goals. BC Ferries also presently operates in an

¹⁶⁶ BC Ferries has signed up for *Natural Gas for Transportation* funding from FortisBC for converting ferries to liquefied natural gas, an incentive authorized by BC Government regulation. BC Ferries Media Release (March 24, 2016) *BC Ferries awards contract for Spirit Class mid-life upgrades: Vessels to be converted to operate on liquefied natural gas (LNG)* www.bcferries.com/bcferries/faces/attachments?id=946922; Fortis BC (2014) *Instructions to Applicants: Natural Gas for Transportation (NGT) Incentive Program* www.fortisbc.com/NaturalGas/Business/NaturalGasVehicles/Documents/Instructions_to_Applicants.pdf

environment of lack of coordination and conflicting policies. However, as the Auditors General report makes clear, this situation is not at all unusual in Canada.

The Auditors General have challenged governments across Canada to produce coordinated climate action, where multiple agencies of different types work in concert. This is not an easy task, but it is absolutely necessary. Success will not only result in GHG emissions declining year after year to meet B.C.'s targets, but also health, affordability, and economic development benefits. Failure is not an option, if the interests of younger people in B.C. are considered.

The Government of B.C. has committed to producing a climate action plan for the transportation sector in the fall of 2018. It has a much better chance of succeeding thanks to the Auditors General's guidance. However, there are decisions that don't need to wait for a new climate plan. Every month that BC Ferries continues without a clear climate action mandate is a month spent drifting, rudderless, when real progress is urgently needed.

9.4 | MNP LLP REPORT



Comprehensive Review of the BC Coastal Ferry System

Supporting Research and Analysis

June 20, 2018

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BACKGROUND

The BC Ministry of Transportation and Infrastructure (“Ministry”) is broadly mandated to build and sustain the province’s transportation system, which includes both the means and infrastructure to facilitate the movement of people and goods throughout British Columbia. The Ministry is also responsible for the Coastal Ferry Act, which provides the legislative framework for BC Ferry Services Inc. (“BC Ferries”). In addition to addressing matters of ferry routes and services along with transportation fees over periods known as performance terms, the Coastal Ferry Act enables the BC Ferry Commissioner in combination with a Coastal Ferry Services Contract as core elements of the regulatory regime.

Premier John Horgan, in his 2017 Mandate Letter to the Minister of Transportation and Infrastructure, set out a priority to conduct a comprehensive review of the coastal ferry service. The main objectives of this review were to evaluate performance in terms of meeting the needs of ferry users and British Columbia’s coastal communities as well as to identify improvements to the existing model and the Coastal Ferry Services Contract.

ROLE OF MNP LLP IN SUPPORT OF THE COMPREHENSIVE REVIEW

MNP LLP, one of the largest full-service chartered accountancy and advisory firms in Canada, was contracted to provide research and analysis in support of this comprehensive review of the coastal ferry service. There were eight areas of focus for the support, namely:

- An assessment of the economic benefits for British Columbia of BC Ferries constructing and retrofitting vessels outside of Canada.
- An assessment of the business case development, approval and tracking processes of the Innovation and Business Development Division of BC Ferries.
- A review of the current state of the Fare Flexibility and Digital Experience Initiative along with the Automated Customer Experience Project, and the related information technology project management practices coupled with the capabilities of BC Ferries to protect its information assets.
- An assessment of the practices and metrics used by BC Ferries to monitor and report on service quality as well as to track and resolve customer complaints.
- A review of available materials to then describe the economic importance of the coastal ferry service to the provincial economy in general and, as feasible, the coastal economy in particular.
- An assessment of the regulatory model along with the consideration of additional regulatory options.
- A review of the state of capital planning and the debt management strategy followed by BC Ferries.
- A review and summary of available information on trends in fares, ridership, and administrative costs.

In addressing these focal areas, MNP LLP reviewed a range of documents such as industry benchmarks and statistics; economic analyses; previous reports for the BC Ferry Commissioner; and, presentations along with plans and reports issued by BC Ferries. To further the understanding as much as interpretation of such materials, and to gain further insight on current practices, systems and processes, a series of small group meetings and interviews were carried out with BC Ferries executive and senior management. MNP then analyzed and interpreted the data from the document review and consultations to extrapolate themes and consolidate findings. The results are outlined in the following sections of this report.

LIMITATIONS

MNP LLP 's findings are based on the analysis of information as provided by BC Ferries in conjunction with publicly available documents. The work to provide this report was carried out based on the assumption that this same information is 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 LLP 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 BC Ferries or any other person of whom we may make enquiries.

MNP LLP did not examine, compile or apply procedures over financial information used for this report under the requirements of the Chartered Professional Accountants of Canada. As a result, MNP LLP 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).



1. REGULATORY MODELS AND OPTIONS

Setting the Context of the Regulatory Environment

BC Ferries is regulated under the *Coastal Ferry Act* (the “Act”), the construct of which includes the following¹⁶⁷:

- Roles and responsibilities of BC Ferries, the B.C. Ferry Authority, government, and an independent regulator.
- Principles by which the British Columbia Ferries Commissioner (“the Commissioner”) is to regulate fares and services.
- The setting of price caps as the regulatory mechanism for determining price compliance.
- Authorities for the Commissioner to require an operator to set up fuel deferral accounts and specify its surcharge (rebate) mechanism.¹⁶⁸

In the course of its regulatory activities and responsibilities, the Commissioner is required to bear in mind four principles as set out in section 38 of the Act, namely:

1. The primary role of the Commissioner is to balance, in an appropriate manner, the interests of ferry users, taxpayers and the financial sustainability of ferry operators;
2. Ferry operators are to be encouraged to adopt a commercial approach to service delivery;
3. Ferry operators are to be encouraged to seek additional or alternative service providers on designated ferry routes through fair and open competitive processes; and
4. Ferry operators are to be encouraged to be innovative and to minimize expenses without adversely affecting their safe compliance with core ferry services.¹⁶⁹

Understanding the Current Regulatory Model

The Act requires the Commissioner to establish a price cap once every four years. A price cap is a regulatory mechanism which provides control on what companies, usually with monopoly powers, can charge while at the same time incentivizing the company to improve financial performance. In its simplest form it identifies the fares to which it applies and uses an average fare index for regulation along with compliance oversight. It is the average fares that must not exceed the price cap index.

A price cap is treated as performance-based regulation as it inherently incentivizes the company to find efficiencies. This regulatory method is low cost for the company being regulated, the regulator and ultimately the users as well as the public. It is the essence of the ‘regulatory light’ approach, with a higher degree of flexibility for a price-regulated company.

BC FERRIES PRICE CAP SETTING PROCESS

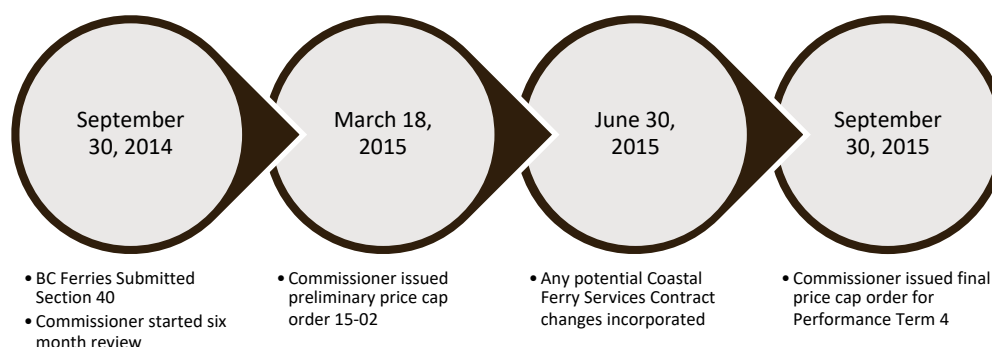
The BC Ferry Commission (“the Commission”) regulates ferry fare levels on 24 routes operated by BC Ferries. These routes are divided into three groups. Price caps are set every four years for a four-year period. The price cap index (average fare) increases for each year and is set by the Commission after reviewing a robust application submitted by BC Ferries. The goal in setting the price cap is to balance the interests of ferry users and taxpayers with the financial sustainability of the ferry operator. Every three months, BC Ferries must report to the Commission the actual average level of fares paid by its customers.

¹⁶⁷ A review of the Coastal Ferry Act is out of the scope of this engagement.

¹⁶⁸ BC Ferries, Regulatory Construct and Price Cap 101, January 2018.

¹⁶⁹ Refer to: <http://www.bcferrycommission.ca/regulations-probes/regulations/>

BC Ferries is currently in its fourth Performance Term (“PT4”) which covers April 2016 to March 2020. Below is the timeline of the steps involved in the current performance term.



The Commissioner set out, under the Performance Term Four Order (15-03), the following:

- PT4 price cap increases of 1.9 percent per year.
- Unchanged provincial service fees from the last year of the third Performance Term.
- Traffic growth in the last year of PT4 assumed to be 2 percent higher than BC Ferries' forecast.
- An efficiency target of \$27.6M over four years.
- BC Ferries is to revisit the capital plan for a possible \$100M reduction.

1.3 Other Regulatory Models

MNP reviewed other regulatory models to provide further perspective on the economic regulation of BC Ferries. This review was not limited to the ferry transportation sector but also models in use in other regulated sectors like power and utilities, where similar capital-intensive organizations provide services to rate payers.

COST OF SERVICE REGULATION

Cost of service regulation includes a rate of return approach. The process of rate of return regulation can be divided into three basic steps:

1. The company's costs are reviewed, and costs deemed to be unnecessary are eliminated.
2. A rate of return judged to be fair for the company is specified.
3. Prices and their structure are set to generate enough revenue to cover costs and provide a fair rate of return.

The key property of this model is that it permits the regulator to limit the profit level that can be achieved. Restraining profits by fixing the maximum return on investment (in real terms) provides the company with a degree of autonomy in conducting its affairs while limiting monopoly behaviour.

Cost of service regulation is often used in the power and utilities industry. For instance, the Ontario Energy Board regulates utilities that apply under a cost of service rate setting environment. As part of its mandate, the Ontario Energy Board reviews a cost of service application and approves the rates that a utility will charge its customers. The Ontario Energy Board examines the utility's operating, maintenance and administrative expenses and capital expenditures, as well as the expected number of customers and

total amount of energy delivered. This does not include though, the commodity costs of the energy (i.e., natural gas or electricity); those costs are treated separately.¹⁷⁰

One of the limitations of this model is that there is little incentive to hold down operating costs if they can be passed on to the customer.

PERFORMANCE BASED REGULATION (PBR)

Under PBR, performance measures are used to motivate the company to reduce expenses. Generally, this involves linking the company profits (or employee remuneration) to performance measures in such a way that profits are permitted to increase if certain performance standards are achieved. The principles that most commonly guide the development of PBR regimes can be expressed as follows¹⁷¹:

- The base revenue requirement and base rates are set using a cost of service.
- An automatic revenue or rate adjustment mechanism is used each year. The adjustment incorporates inflation and productivity ("CPI-X") to recognize cost pressures and to ensure that a share of the benefits of greater efficiency flow through to customers during the term of the plan.
- Productivity targets are set using the company's own performance, comparative benchmarks, the regulator's judgment, or a combination of these methods.
- An extended period between rebasing applications (i.e., cost of service reviews) is set in advance to provide an opportunity for the company to realize results from productivity initiatives before its next rebasing. During the term of the plan the company retains the benefits of efficiency improvements over and above the productivity factor described previously. The productivity gains are generally incorporated into the rates at the next rebasing, although there may also be a "carry-over" mechanism that allows shareholders to benefit equally from productivity initiatives whether they are undertaken early or late within the term of the PBR plan.
- Service quality standards are set to ensure that profitability is not improved simply by reducing service. The standards may be accompanied by specific penalties for under-performance and/or incentives for superior performance.
- Reporting requirements are established to ensure ongoing data availability for evaluating productivity, benchmarking and assessing service performance.

REVENUE CAP RATE SETTING

Revenue caps are commonly used for regulated entities where costs tend to be relatively insensitive to year-over-year changes in throughput. However, separate adjustments are typically allowed for the occasional major capital investments that are required to maintain facilities and increase capacity. There are a multitude of regulators that use this model:

- The Australian revenue cap incentive regime for transmitters sets a smoothed revenue trajectory over a five-year term based on projected costs for the period. The costs used to establish the five-year revenue requirement become the target cost for the PBR regime. The transmitter has an incentive to reduce costs while meeting its established service quality standards since it can retain a share of the savings that are realized.
- Rates for electric distribution and transmission utilities in Norway have been set using a PBR regime since 1997. The approach adopted by the Norwegian regulator, the Norwegian Water Resource and Energy Directorate, was a revenue cap based on benchmarking. This regime is now in its fourth term.
- PBR was first introduced in Alberta in 2009 when a regime called Formula-based 3 Ratemaking ("FBR") was approved by the Alberta Utilities Commission ("AUC") for ENMAX Power Corporation ("ENMAX"). The AUC approved a five-year FBR plan for ENMAX effective from January 1, 2007.

¹⁷⁰ Refer to: https://www.oeb.ca/oeb/_Documents/Regulatory/OEB_Rate_Handbook.pdf

¹⁷¹ Refer to: http://publicsde.regie-energie.qc.ca/projets/272/DocPrj/R-3897-2014-A-0003-Dec-Dec-2015_03_04.pdf

For distribution services a price cap model was approved, and for ENMAX transmission services a revenue cap model was approved.

Consumer Advocacy Groups and Public Intervention

Consumer advocates operate as independent institutions, separate from Public Utility Commissions, that have the authority and public funding to represent consumer interests in proceedings before state agencies and courts. According to a policy brief developed by the Ivey Energy Policy and Management Centre (July 2016), “academic research suggests that consumer interests can be robustly safeguarded in regulatory procedures when governments institutionalize independent consumer advocates with clear mandates, resources, and jurisdictional authority”.

Currently, BC Ferries has Ferry Advisory Committees that provide stakeholder feedback on a biannual basis. While helpful in obtaining feedback on a variety of issues important to customers, the advisory committees do not carry the weight, and therefore exercise the same level of influence, as consumer advocacy groups. To provide some perspective, a couple examples of advocacy groups and how they operate in the electricity sector are provided below.

NEW JERSEY DIVISION RATE OF COUNSEL

The Division of Rate Counsel (“DRC”) advocates on behalf of ratepayers before the New Jersey Board of Public Utilities, the legislature, federal regulatory agencies and the courts. The DRC has the authority to conduct investigations, initiate studies, conduct research, present comments and testimony before governmental bodies, issue reports, and produce and disseminate consumer guides. The DRC budget, which is approved by the state legislature, is supported by annual assessments equal to a percentage of utilities’ gross operating revenues. The 2015 budget was \$7.8 million (18 percent increase from 2014), with a staff of 34 full-time employees, making it one of the largest state consumer advocacy organizations in the U.S.

ALBERTA UTILITY CONSUMER ADVOCATE

The Alberta Utility Consumer Advocate, or UCA, represents consumer interests before the Alberta Utilities Commission and other bodies. It was established by regulation in 2003 in response to a report by a government appointed advisory council that studied the state of electricity deregulation in the province. This report highlighted how anticipated savings had not been realized and how customer complaints had increased.

The current regulatory process, in the absence of a public intervention and hearing process, has kept a light regulatory burden on both the Commissioner and BC Ferries, which is cost effective and efficient. There may be an option though, of introducing consumer advocacy groups and gradual public intervention to provide for a higher level of representation and transparency in the rate setting process. Further, while feedback from surveys and advisory committees is mandated by the regulator, the introduction of advocacy groups from different regions, industries or other segments would enable ongoing alignment of BC Ferries’ services with the evolving needs of customers.

1.4 Role of the Regulator

In our research across different regulatory models and industries, including ferry service operators and utilities, the role of the regulator has been consistently defined as balancing the responsibility of ensuring customers receive safe and reliable services at fair rates with a reasonable opportunity to earn a fair return on invested capital. The Commissioner adheres to these typical expectations of a regulator.

1.5 Cost Allocation Between Regulated and Unregulated Businesses

MNP also reviewed the approach used by BC Ferries to ascertain at a high level how shared costs are allocated to regulated business, ancillary services and unregulated business. The application of a cost allocation methodology within businesses that have multiple entities (or business units) is common, particularly within regulated environments. Cost allocation seeks to fully distribute the overhead costs of

an organization on an equitable basis, therefore more effectively representing the full costs and profitability of each business unit.

A robust allocation methodology helps ensure costs are appropriately allocated based on cost causation, with allocation-consistent formulas supported by the accepted principles and cost drivers. Allocation of shared services across business units leads to enhanced precision and transparency of financial performance of individual entities or lines of business, and therefore facilitates better business planning and allocation of resources for all lines of business.

MNP's main observations related to allocation of costs are listed below:

- BC Ferries provides ancillary services like food and retail on board routes while BC Ferries Vacations offers vacation packages to tourists and visitors. These ancillary services form the unregulated part of BC Ferries business and revenues. Revenues generated through net retail (i.e., representing 90 percent of the unregulated business) stood at close to \$55 million which is more than 9 percent of the total revenue generated through vehicle and passenger fares in fiscal 2017.
- Currently, BC Ferries allocates both revenues and expenses only across different routes operated and serviced by BC Ferries. Revenues and shared expenses are not allocated between regulated and unregulated businesses.
- While the revenue generated through the unregulated business is a smaller portion of costs, there may be an opportunity to allocate shared services costs (e.g., human resources, finance and other shared service functions) across the organization to more accurately reflect the financial performance of BC Ferries' core regulated operations and its unregulated operations. This would support growth or cost optimization initiatives with enhanced transparency of the related costs for assessments of return.
- Cost allocation methodologies are developed by regulated entities across multiple sectors like electricity, water and transportation throughout Canada and in other international jurisdictions.

1.6 Fuel Deferral Accounts

After labour and wages, fuel cost is the second largest operating expense for BC Ferries, forecasted to be \$108 million for fiscal 2018. BC Ferries is required by the Commissioner to submit a fuel management plan before each performance term that details the procurement and risk management strategies related to fuel.

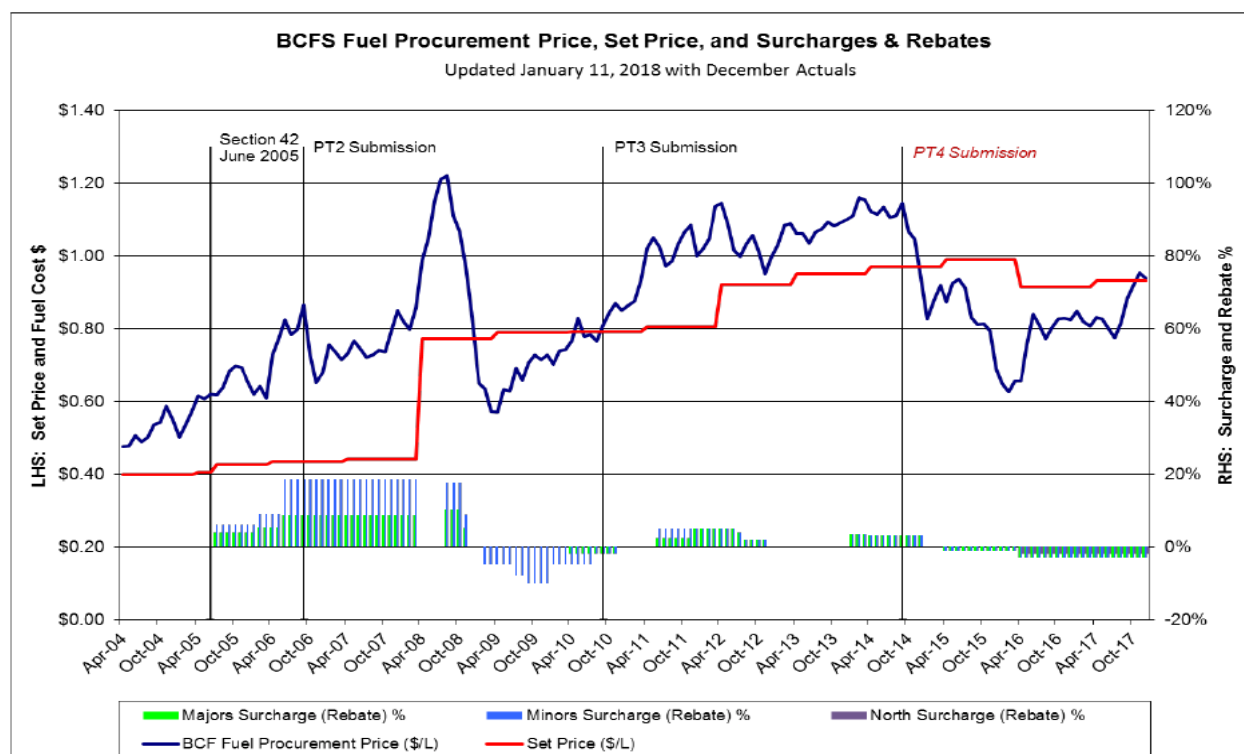
Deferral accounts represent assets constituted by the deferring of costs incurred, which will be recognized in charges during subsequent fiscal years. Fuel deferral accounts are a common mechanism used by regulators to insulate against volatile commodity prices. As defined in the Coastal Ferry Services Contract ("CFSC") for PT4, effective April 1, 2016, BC Ferries is authorized to use fuel deferral accounts, one for the major and minor routes and one for the northern routes. The PT4 Commissioner Order 15-03A further specifies (among other terms and conditions):

- The set price of \$0.915 per litre for marine diesel and \$0.464 per litre for LNG in the first year of PT4, inflated by 2 percent per year.
- BC Ferries must obtain prior approval to apply fuel surcharges or rebates on the northern routes. The Commissioner may order BC Ferries to apply fuel surcharges or rebates on these routes if the fuel deferral account balance is deemed to be excessive.
- Except for the northern routes, and subject to certain conditions, BC Ferries may implement, adjust or remove fuel surcharges or rebates at any time.
- Fuel surcharges cannot exceed 10 percent of the applicable fare without the approval of the Commissioner.

As of April 1, 2018, BC Ferries was offering a rebate of 1.9 percent to 2.9 percent on net fares for all its routes. The chart below highlights the surcharges and rebates offered on all BC Ferries routes, comparing it to the set fuel price level to be used in the performance term established by the

Commissioner. As the chart shows, up to the end of 2017, the set price higher than the BC Fuel Procurement Price has translated into sustained rebates in the current performance term.

Figure 17: BC Ferries' Surcharge and Rebate Trends



In addition to the fuel deferral account, BC Ferries also employs a fuel price hedging strategy to “mitigate the potential adverse impact of price volatility (e.g., fuel price risk) on BC Ferries all-in fares and the financial performance of the company”. The hedging of fuel pricing does not completely offset the risks associated with fuel price fluctuations, which are impacted by global demand and supply as well other regional macroeconomic and political indicators. Hedging strategies are also only implemented for periods that extend no longer than the end of the current performance term.

BC Ferries announced it is removing the current “fuel rebate,” which had lowered ticket prices 2.9 percent on major and minor routes and 1.9 percent on northern routes since the spring of 2016.¹⁷² The provincial government has re-iterated that it had provided BC Ferries with funding of \$59 million to freeze fares on major routes, reduce fares on other routes by 15 percent, and return full discounts for seniors as part of the ferry transportation fee.

Fluctuations in commodity prices are natural and expected, especially in the current volatile crude oil market. This has a direct impact on all refined products consumed as fuel. However, to manage these fluctuations, high fuel consumption companies like BC Ferries typically have complex hedging strategies in place to mitigate against price volatility. While price projections of ultra low sulphur diesel are not available and under MNP’s mandate, a high-level review was carried out of select international petroleum products that can be treated as proxies to diesel prices. It should be noted, however, that this research has captured only the price trend and not necessarily the magnitude of the change.

¹⁷² Refer to: <https://www.bcferrries.com/bcferrries/faces/attachments?id=1156877>.

Table 10: Petroleum Product Price Forecasts

Year	WTI Cushing	WTI Cushing	Edmonton City	Edmonton City	WCS Hardisty	Heavy Oil	Cost	CAD to USD
	OK (40 API)	OK (40 API)	Gate (40API)	Gate (40API)	(20.5 API)	Hardisty (12 API)	Inflation	Exchange
	US\$/bbl	US\$/bbl	C\$/bbl	C\$/bbl	C\$/bbl	C\$/bbl		
	Real	Current	Real	Current	Current	Current	Rate	Rate
Historical								
2015	\$49.96	\$48.69	\$58.49	\$57.00	\$44.80	\$39.63	1.1%	0.783%
2016	\$44.50	\$43.15	\$53.84	\$52.22	\$38.90	\$34.08	1.4%	0.755%
2017	\$51.71	\$50.88	\$62.89	\$61.88	\$50.53	\$45.01	1.6%	0.771%
2018								
3 Mths H	\$62.60	\$62.60	\$70.02	\$70.02	\$49.78	\$43.71	1.9%	0.791%
9 Mths F	\$60.00	\$60.00	\$71.80	\$71.80	\$50.80	\$47.80	0.0%	0.780%
Avg.	\$60.65	\$60.65	\$71.36	\$71.36	\$50.54	\$47.78		0.783%
Forecast								
2018	\$60.00	\$60.00	\$71.80	\$71.80	\$50.80	\$47.80	0.0%	0.780%
2019	\$60.00	\$61.20	\$70.00	\$71.40	\$52.00	\$48.95	2.0%	0.800%
2020	\$62.50	\$65.05	\$70.90	\$73.75	\$56.10	\$52.95	2.0%	0.825%
2021	\$65.00	\$69.00	\$71.75	\$76.15	\$60.20	\$57.05	2.0%	0.850%
2022	\$67.50	\$73.05	\$74.70	\$80.85	\$64.60	\$61.35	2.0%	0.850%
2023	\$70.00	\$77.30	\$77.65	\$85.75	\$69.15	\$65.85	2.0%	0.850%
2024	\$70.00	\$78.85	\$77.65	\$87.45	\$70.55	\$67.20	2.0%	0.850%
2025	\$70.00	\$80.40	\$77.65	\$89.20	\$71.95	\$68.50	2.0%	0.850%

Source: For reference purposes, this table is from Deloitte's Price forecast published March 31, 2018.¹⁷³

As can be seen from the table, the forecasts for 2018 and 2019 for many of the products are stable, with some forecasted to decrease minimally in 2019. This suggests that a more rigorous analysis of the forecasting methodology and the impact of escalating or deescalating fuel prices on rebates and the hedging strategy is warranted.

1.7 Summary of Findings and Future Direction

The following are four principal areas of observation from the regulatory review and related considerations for future direction.

CONSIDER PUBLIC INTERVENTION AND CONSUMER ADVOCACY GROUPS

There is an opportunity to explore the introduction of a public hearing and intervention process to provide more transparency to the rate setting process while minimizing cost to the rate payers. As a first step, the government may consider the inclusion of consumer advocacy groups with provisions for representation from different constituent interests. Once consumer advocacy groups are established, the Province may then investigate the introduction of public intervention. This will, however, require a detailed study to better understand the costs and benefits of expanding a formal role for these stakeholders.

¹⁷³ Refer to: <https://www2.deloitte.com/content/dam/Deloitte/ca/Documents/REA/ca-en-ER-REA-Price-Forecast-Mar2018-EN AODA.PDF>

EXPLORE A REVENUE CAP AS A REGULATORY MODEL

As noted in the analysis in previous sections, there are other regulatory models that have been used successfully in industries across multiple jurisdictions. While there may not be a need at this time to revise the regulatory model, as BC Ferries expands its capital plan to replace an ageing vessel population, a revenue cap model can offer incremental benefits to the current price cap approach. We advise that an independent study by the Province to explore this opportunity may be prudent.

COST ALLOCATION METHODOLOGIES

As BC Ferries expands its revenue generating opportunities and seeks to further optimize costs, the application of a more robust cost allocation methodology for shared service costs across business units would provide enhanced transparency and cost awareness to the organization. Greater transparency of financial performance will enhance business planning and the allocation of resources to existing operations and growth opportunities.

FUEL MANAGEMENT APPROACH AND REVIEW

There are limited options that the Province can consider as it relates to BC Ferries fuel management as well as the recent development around fuel rebates. To provide greater insight to the Commissioner though, BC Ferries may be asked to submit a fuel management strategy on a more frequent basis than the current mandate of one submission at the onset of each performance term. This would allow the Commissioner to understand any changes in the strategy, based on rolling forecasts, that could impact BC Ferries costs and customer pricing. An annual or biennial approach would provide greater transparency and insight to both the Commissioner and BC Ferries.

2. CAPITAL PLANNING AND DEBT MANAGEMENT

2.1 Setting the Context of Capital Planning and Debt Management

As stated in BC Ferries 2018 Strategic Plan, one of six strategic goals for the ferry service operator is to “drive prudent investment in our capital assets”. BC Ferries has put forward a four-step strategy to achieve this goal, as summarized below.

1. Manage our capital project portfolio within established financial parameters.
2. Replace assets in line with policies contained in the Fleet, Terminal Network, Customer Experience, and Information Technology Master Plans.
3. Adopt a long-range resource requirement plan to deliver on the Capital Plan.
4. Support alternative approaches for company software requirements.

MNP reviewed the capital planning of BC Ferries along with its debt management approach and financing costs over the last five years. The Capital Plan developed by BC Ferries was submitted to the Commissioner as part of the PT4 application pursuant to section 64.1 of the Act. The Capital Plan covers a 12-year period (April 1, 2014 through March 31, 2026). It also responds to the specific information requirements of section 64.1 of the Act and includes information on the amount, timing and type of proposed capital acquisition or spending for each of the planned major capital expenditures. The options considered and the rationale for the planned major capital expenditures form part of this assessment.

However, the scope of this review does not include an analysis of the Capital Plan itself and the rationale or the prudence of the plan. The review focuses on the capital structure of the organization, current financing sources and costs, management of debt in the recent past, and preparedness during the execution of the current Capital Plan.

2.2 Current Capital Plan

The Capital Plan for 2014 to 2026 includes spending of \$3 billion over the 12-year period. Within this portfolio are several planned projects that are major capital expenditures as defined by Commission Order 12-04, and for which pre-approval from the Commissioner under section 55 of the Act will be required. The Capital Plan focuses on the following areas:

- Vessel replacements;
- Vessel upgrades;
- Terminal upgrades; and
- Information technology.

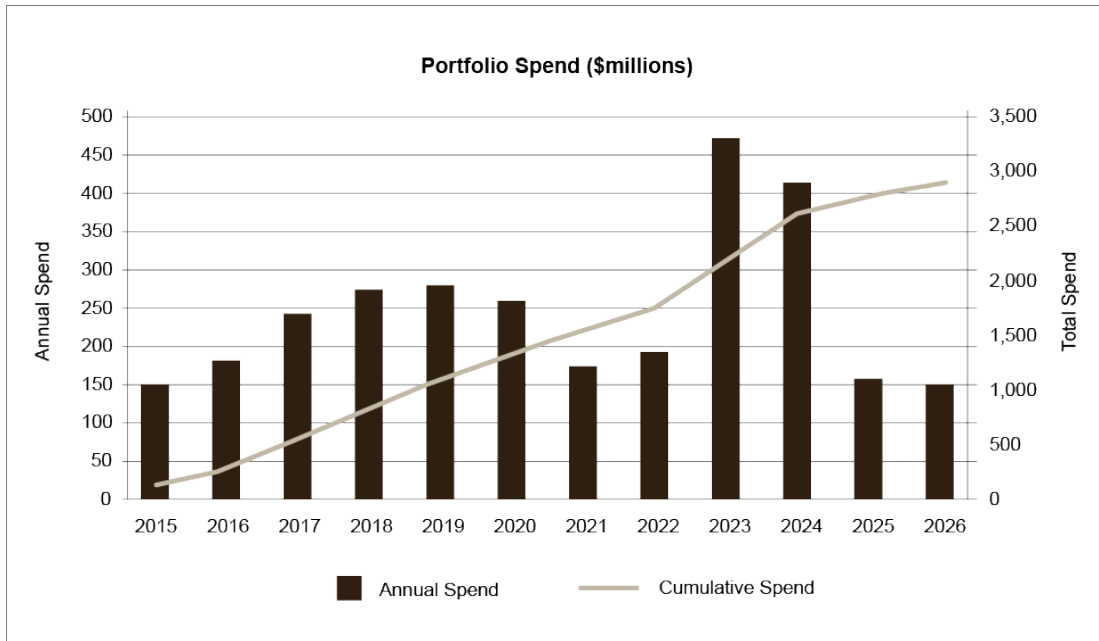
As stated in the capital submission:

*“Effective June 25, 2012, section 55 of the Act was amended by Bill 47 to require that BC Ferries obtain approval from the Commissioner prior to incurring a major capital expenditure. By Commission Order 12-04, the Commissioner defined a major capital expenditure as “any capital expenditure which exceeds \$30 million, inclusive of component programs and interest during construction, and irrespective of the level of expenditure, any new vessel or terminal, and any vessel life extension which extends the life of the vessel by more than five years. In addition, upgrades to information (IT) systems in excess of \$5 million which support ticketing and reservations”.*¹⁷⁴

Figure 2 on the following page summarizes the projected capital spend over the 12-year period, as depicted in BC Ferries’ 2018 Business Plan.

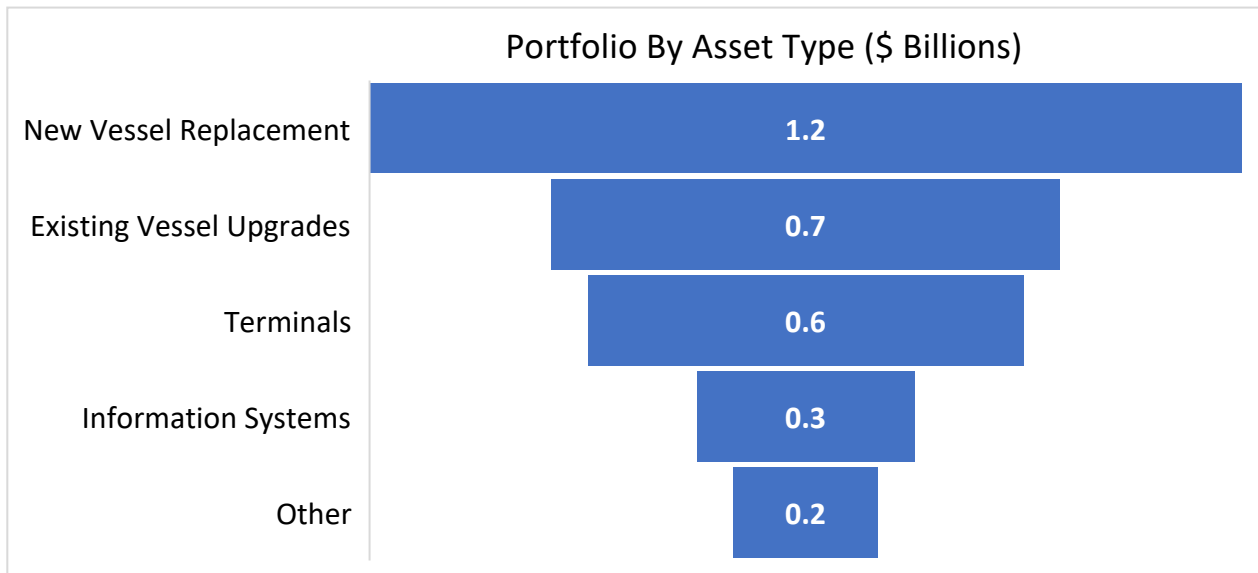
¹⁷⁴ http://www.bcferrycommission.ca/wp-content/uploads/2014/10/2014-09-30_12-year-capital-plan-to-Commissioner.pdf

Figure 18: Projected Capital Spending (FY2015-FY2026)



Similarly, Figure 3 below provides a summary of the distribution of capital across major programs over the planning period.

Figure 19: Distribution of Capital Across Major Programs



Fleet replacement and upgrades constitute almost 63 percent of the total Capital Plan. This is consistent with the capital spending over the last three performance terms (within the 11-year period since the restructuring of BC Ferries). A sizeable portion of the \$2.1 billion investment over that period was spent on the replacement of an aging fleet. Prior to the recent induction of the new Salish-class vessels, the average age of BC Ferries vessels was 34 years.



2.3 Sources of Funding

BC Ferries' main source of funding for capital programs is through equity (i.e., cash from operations) and debt issuance. Other sources of funding are provincial and federal programs for which certain capital expenditures may be eligible. The table below summarizes additional sources of funding received and recently committed over the four performance terms ("PT") to date as provided by BC Ferries in their presentation titled *Federal Funding* in January 2018.

Table 11: Sources of Funding Received and Committed (FY2004-FY2017)

Funding Received (\$M)	PT1 (F2004- 2008)	PT2 (F2009- F2012)	PT3 (F2013- F2016)	PT4 (F2017)	Total
Marine Security Contribution Program		\$ 9.10			\$ 9.10
Infrastructure Stimulus Fund		\$ 8.80			\$ 8.80
Structured Financing Facility	\$ 9.50	\$ 12.30	\$ 0.80		\$ 22.60
New Building Canada Fund				\$60*	\$ 60.00
Shore Power Technology for Ports			\$ 2.00		\$ 2.00
Sub Total	\$ 9.50	\$ 30.20	\$ 2.80	\$ 60.00	\$102.50
Duty Remission		\$119.40			\$119.40
TOTAL	\$ 9.50	\$149.60	\$ 2.80	\$60.00	\$221.90

*Committed in 2017

Additional avenues of funding, such as the Fortis Natural Gas Marine Incentive Program, also exist. For this program, funding is available to vessel owners and operators to cover the incremental cost of upgrading to liquified natural gas. Of a total \$13 million in committed funding, \$7 million has been received as stated in BC Ferries presentation titled *Fortis Funding* in January 2018.

In addition to this, BC Ferries has long-term debt which is comprised of senior secured bonds with various coupon rates and maturity dates (ranging from 2033 to 2043); 12-year loans with multiple branches of a German-owned development bank, KfW; an export loan (with floating rates) with KfW IPEX-Bank GmbH, which specializes in international project and export financing; and a credit facility. It should be noted that all loans are in Canadian dollars, which limits foreign exchange risk with repayments and financing expense. All other debt is based on fixed rates.

The outstanding debt is summarized in the table on the following page, the data for which BC Ferries provided in their presentation *Funding Capital Expenditures* in January 2018.

Table 12: BC Ferries Outstanding Debt (December 31, 2017)

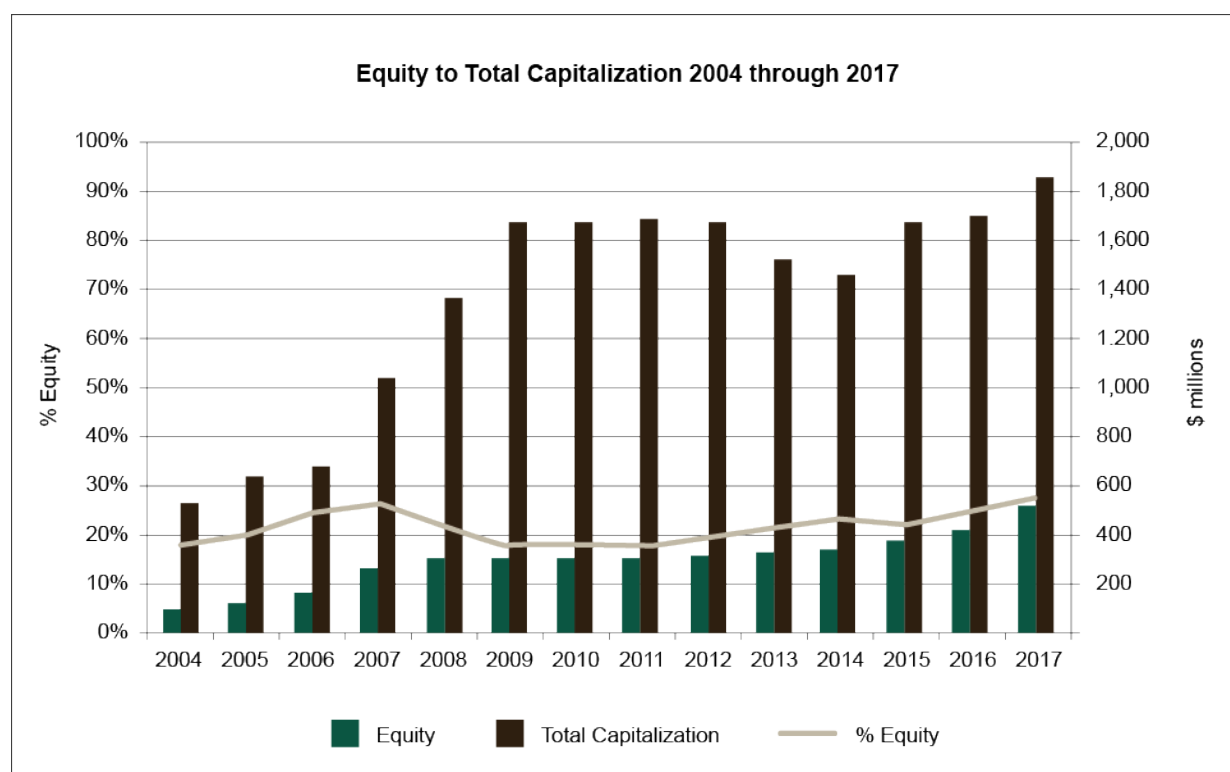
Type (\$millions)	Amount Issued	Available	Outstanding (Dec 31, 2017)	Average interest
Credit Facility		\$155	\$0	
Kfw Loans	\$423		\$238	3.5%
Bonds	\$1,490		\$1,100	5.2%
TOTAL			\$1,338	

2.4 Capital Structure

BC Ferries does not issue share equity, and all net earnings after marking adjustments to regulatory assets or liabilities are retained. Debt funding as described earlier is available through capital markets.

The chart below, provided by BC Ferries in its *Funding Capital Expenditures* presentation, shows equity as a percentage of total capitalization over the fiscal years 2004 to 2017.

Figure 20: Equity to Total Capitalization (FY2004-FY2017)



As illustrated above, BC Ferries' fiscal 2017 equity to capital is 29.4 percent. In the determination of PT3 and PT4 price cap increases, the Commissioner set target ratios for equity to be not less than 17.5

percent of total capitalization which is effectively a debt to total capitalization of 82.5 percent (“leverage ratio”) and a debt service coverage ratio (“DSCR”) of 2.5 times or greater.¹⁷⁵ MNP’s research and experience indicates that regulators may choose to recommend a target or deemed equity structure for operators, especially in capital-intensive environments. For context, the Ontario Energy Board, the economic regulator of the energy sector in Ontario, provides a deemed equity structure for all the regulated entities and publishes the allowable return on equity for utilities regulated under the cost of service regulatory regime. This is discussed more in the following section.

COMPARABLE CAPITAL STRUCTURE

In addition to a review of the capital structure of BC Ferries, MNP also analyzed comparable ferry operators across multiple jurisdictions, as summarized in the table below. MNP identified the comparable operators based on similarity of operations, market capitalization and availability of information. The information in Table 4 has been extracted from the Capital IQ database and is for the year 2017.

Table 13: Comparable Ferry Operators to BC Ferries

Comparable Companies	Debt to Capital	Equity to Capital
AS Tallink Grupp	55.6%	44.4%
SeaLink Travel Group Limited	10.0%	90.0%
Torghatten ASA	59.3%	40.7%
Fjord1 ASA	29.3%	70.7%
Minoan Lines Shipping S.A.	49.8%	50.2%
Average	40.8%	59.2%

As can be seen in the above table, BC Ferries’ equity to capital (29.4 percent in 2017) is below the comparable average. This presents the opportunity to consider increasing the deemed equity to capital ratio for BC Ferries close to or in line with comparable organizations across multiple jurisdictions throughout the world or other regulated entities in Canada. This also allows for the application of a general principle that the higher the regulated operations’ business risk, the lower the debt ratio should be. Recognizing the level of the business risk primarily through the allowed capital structure is a reasonable and accepted regulatory approach for differentiating among utilities and compensating them for differences in business risk.

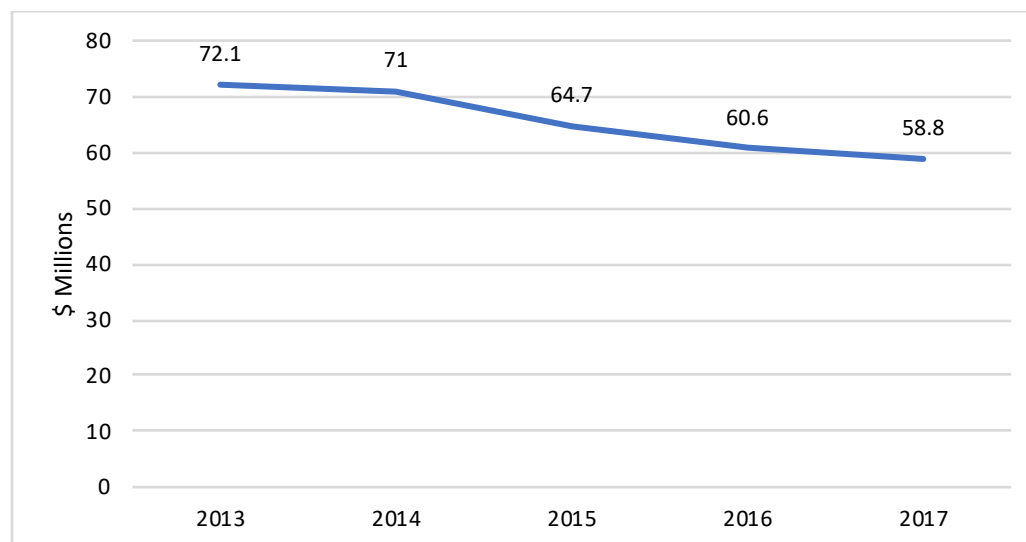
2.5 Cost of Borrowing and Financing Expense

BC Ferries is monitored (or “covered”) by two credit rating agencies. Standard & Poors’ most recent credit rating of the organization was AA-, and DBRS most recently gave an A (high) rating.

It should be noted that the credit ratings have a direct impact on BC Ferries’ ability to raise debt in capital markets and on the cost of borrowing. MNP analyzed BC Ferries’ finance expense over the past five years, as summarized in the chart on the following page (information extracted from BC Ferries’ annual reports).

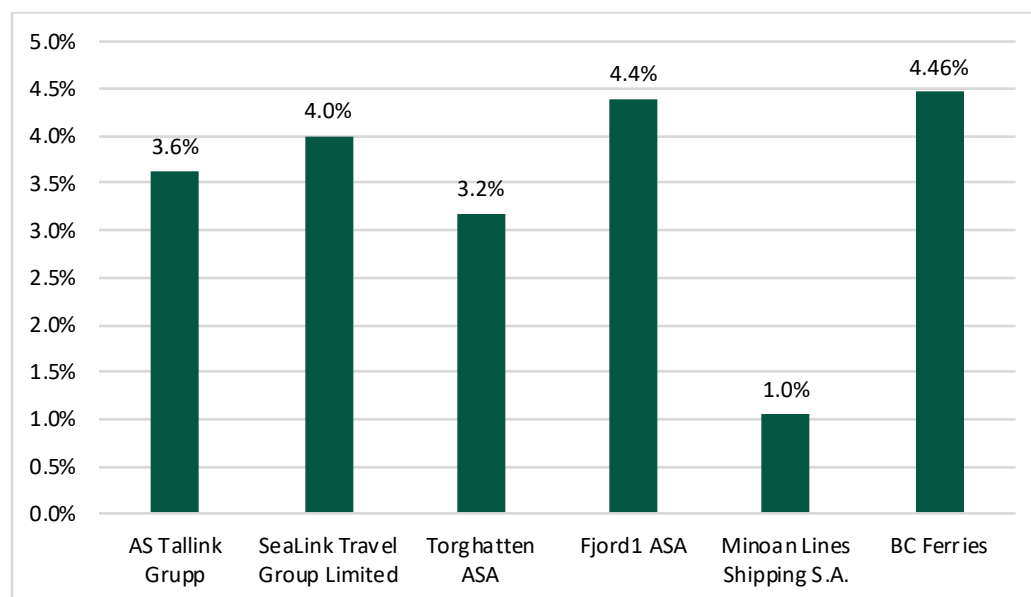
¹⁷⁵ https://www.bcferrries.com/files/PDFs/2017_Business_Plan_2.pdf

Figure 21: BC Ferries' Finance Expense (2013-2017)



The organization's finance expense has decreased year-over-year, mainly due to principal repayments, lower interest rates and the capitalization of interest reflecting investments in capital assets. MNP also compared BC Ferries' cost of borrowing to other comparable ferry operators in multiple jurisdictions, as referenced earlier. The results are summarized below.

Figure 22: BC Ferries' Cost of Borrowing



BC Ferries' cost of borrowing is slightly higher than the comparable ferry operators; however, this may go down with the recent upgrade of the organization's credit rating (DBRS credit rating from A to A high). Under the current DBRS credit rating, BC Ferries is required to maintain a Debt Service Coverage Ratio ("DSCR") of at least 2.5x. For the past two years, BC Ferries has maintained a DSCR of 3.1x and 3.2x, respectively. To continue to meet the credit rating requirements or to improve on the ratings, BC Ferries will need to maintain a good DSCR as it has done in the past couple of years (2016 and 2017) that MNP reviewed.

2.6 Capital Planning

While not the focus, MNP conducted a high-level review of capital planning processes as reported by BC Ferries and highlighted in its presentation *Capital Planning and Reporting at BC Ferries*. Generally, MNP observed that BC Ferries follows an adequately robust capital planning process with a strong governance model and clear delineation of roles and responsibilities, along with a consistent tracking of project progress.

2.7 Summary of Findings and Future Directions

The following are three principal areas of observation and related considerations for the future.

MAINTAIN THE STABLE FINANCIAL PERFORMANCE

While not directly within the scope of this report, BC Ferries has shown some consistency in its financial performance (net earnings) over the last few years. This has been one of the driving forces behind the recent upgrade of the organization's credit ratings, mentioned in the previous section. As noted earlier, credit ratings have a direct impact on both the ability to raise capital and to ensure favourable borrowing terms along with interest rates. In a regulated environment, stability and predictability of outcomes, as well as financial performance in terms of returns, help secure credit ratings that improve financing. BC Ferries will need to maintain a stable financial performance to sustain, if not improve, its current rating.

CONSIDER REVIEWING THE CURRENT EQUITY TO CAPITAL LEVEL

A deemed, or target, capital structure is used by regulators to guide regulated entities in their rate-setting approach by stipulating debt and equity to capital percentages. In some cases, the deemed structure is notional, whereby the regulated entities have control over what the applicable structure is, notwithstanding their ability to earn returns. The Ferry Commissioner's approach of setting a minimum level of equity to capital level is in line with regulators both in the transportation sector as well as capital intensive sectors like power and utilities. Compared to other selected ferry operators reviewed, BC Ferries' equity to capital ratio is low. This can be due to a multitude of factors, including the regulatory environment they are operating under as well as the financing needs of the organizations in the future. The Commissioner may choose to review the equity to capital levels for BC Ferries for subsequent PTs. If the Commissioner indeed considers changing the equity level, the following impacts can be observed:

- **Increasing Equity to Capital Level:** Increasing the equity level can be seen favourably by financiers and may increase the ability to access capital as well as lead to lower financing rates. The increased equity level can, however, put upward pressure on rates, since BC Ferries does not issue share capital and retained earnings contribute to the equity levels. The upward pressure on fares and higher revenues can be mitigated by finding more efficiencies and reducing costs over time.
- **Lowering Equity to Capital level:** If the equity level is lowered further, BC Ferries will become more leveraged which would have a direct impact on the credit ratings of the organization and hence its access to capital and subsequent financing rates. The reduced equity levels may, on the other hand, provide a little more room to reduce revenue targets and even lower fares, although in a price cap regulation there is not going to be a huge impact. The lowering of equity levels set by the Commissioner would not be recommended.

3. SERVICE QUALITY AND CUSTOMER COMPLAINTS

3.1 Setting the Context on Service Quality and Customer Complaints

In its strategic plan and the corporate business plan (March 2018), BC Ferries puts forward a goal to deliver a customer-focused travel experience. To demonstrate success in relation to this goal, there needs to be a shared understanding – within and outside BC Ferries – of customer experiences and service quality.

BC Ferries has a variety of formal and informal avenues for feedback on the customer experience and other attributes of service quality. Outlined below are three of the formalized avenues, as identified in available documentation and through interviews with BC Ferries' representatives (excluding the Ferry Advisory Committees, which are being addressed in separate reporting).

CUSTOMER SATISFACTION TRACKING SURVEY

One of the tools that BC Ferries uses is an annual customer satisfaction survey. The Customer Satisfaction Tracking ("CST") Survey was implemented in 2003 in response to a requirement within the Coastal Ferry Services Contract, the agreement between BC Ferries and the BC Ministry of Transportation and Infrastructure, to provide ferry services on designated routes. The survey is meant to identify improvements to current service offerings and is designed to provide input to the corporate strategic plan.

The survey is BC Ferries' primary means of understanding a breadth of experiences from the perspective of the customer, capturing data on the following service areas as prescribed in article 6.02 of the Coastal Ferry Services Contract:

1. Service Prior to Arriving at the Terminal
2. Service at the Ferry Terminal
3. Service on Board the Ferry
4. Sailing Schedules
5. Overall Safety of Operations
6. Value for Money of Fares Paid
7. Overall Ferry Service

The survey process and methodology has remained consistent over time and includes:

1. **Intercepts** – Every fifth passenger (both walk-on and vehicle) is attempted to be intercepted, and all areas of the vessel are covered.
2. **Phases** – Interviews are conducted in person with questions that include frequency of travel, purpose of trip, and area of residence, among other considerations, with a second phase that entails a self-administered survey questionnaire completed following the trip (in paper or online formats).
3. **Wave Repetition** – The process is repeated over three waves throughout the year (i.e., June, August, and November).
4. **Compilation and Reporting** – Data is compiled and presented in an annual report no later than three months after the fiscal year-end.

In 2017, MNP was contracted by the Commissioner to review the CST survey. This review found that the survey was somewhat, but not fully, representative of the population of ferry users and suggested that the survey results should be taken as one source of measurement amongst others. The Commissioner then issued Order 18-01, requiring BC Ferries to:

1. Conduct CST Surveys on at least five additional routes in 2018 and any remaining routes in 2019.
2. Obtain the Commissioner's approval on the intended methodology.
3. Advise the Commissioner regarding re-procurement before proceeding with a 2019 survey.

4. Provide evidence that commercial users are being surveyed.
5. Provide the Commissioner with a plan for addressing other recommendations made by MNP by June 2019.
6. Provide the Commissioner with a plan for communicating actions taken in response to the recommendations of MNP.

Since this Order was made, BC Ferries has added five additional routes to the 2018 CST Survey, and has committed to publishing all CST research waves online along with engaging a third-party consultant in the fall of 2018 to examine the CST Survey methodology. Further, BC Ferries has stated that it will re-procure for the contract before proceeding with the 2019 CST Survey.

RESPONSETEK AND CUSTOMER COMPLAINTS

Customers can provide feedback on an ongoing basis through various channels such as telephone, email, an online feedback form, and social media. Feedback is received and responded to by Customer Service Sales Representatives (“CSSR”) in the BC Ferries Customer Service Centre and tracked in a system called ResponseTek. ResponseTek is able to classify feedback as positive or negative as well as identify themes and generate various reports. BC Ferries has reported that it receives approximately 500,000 phone calls and 15,000 emails annually.

ACCESSIBILITY COMMITTEE

While the CST Survey and the customer complaints process are two primary methods for gathering feedback on BC Ferries’ service, an Accessibility Committee also exists. This Committee meets twice a year to review customer feedback along with issues of vessel and terminal design. The Committee is comprised of internal BC Ferries staff from operations, training, construction, and communications as well as ten external stakeholders representing the visually and hearing impaired, seniors, the mobility-challenged, the BC Coalition of People with Disabilities, and the Inter-Municipal Advisory Committee on Disability Issues. The insight and feedback gained from this Committee has resulted in several infrastructure and operational improvements, including:

- Hearing induction loop technology on vessels;
- Changes to loading processes at terminals; and
- Website messaging regarding accessibility.

3.2 Understanding of Processes and Metrics of Customer Satisfaction and ResponseTek

Feedback avenues are of less value unless the resulting information can be aggregated and reported on to inform decisions and show accountability. Outlined below are the ways in which feedback from the CST Survey and ResponseTek is being aggregated, reported, and resolved according to BC Ferries.

CUSTOMER SATISFACTION TRACKING SURVEY

The CST Survey data is reported to the executive group upon completion of each wave (as noted earlier, June, August, and November) and has historically been made public annually.

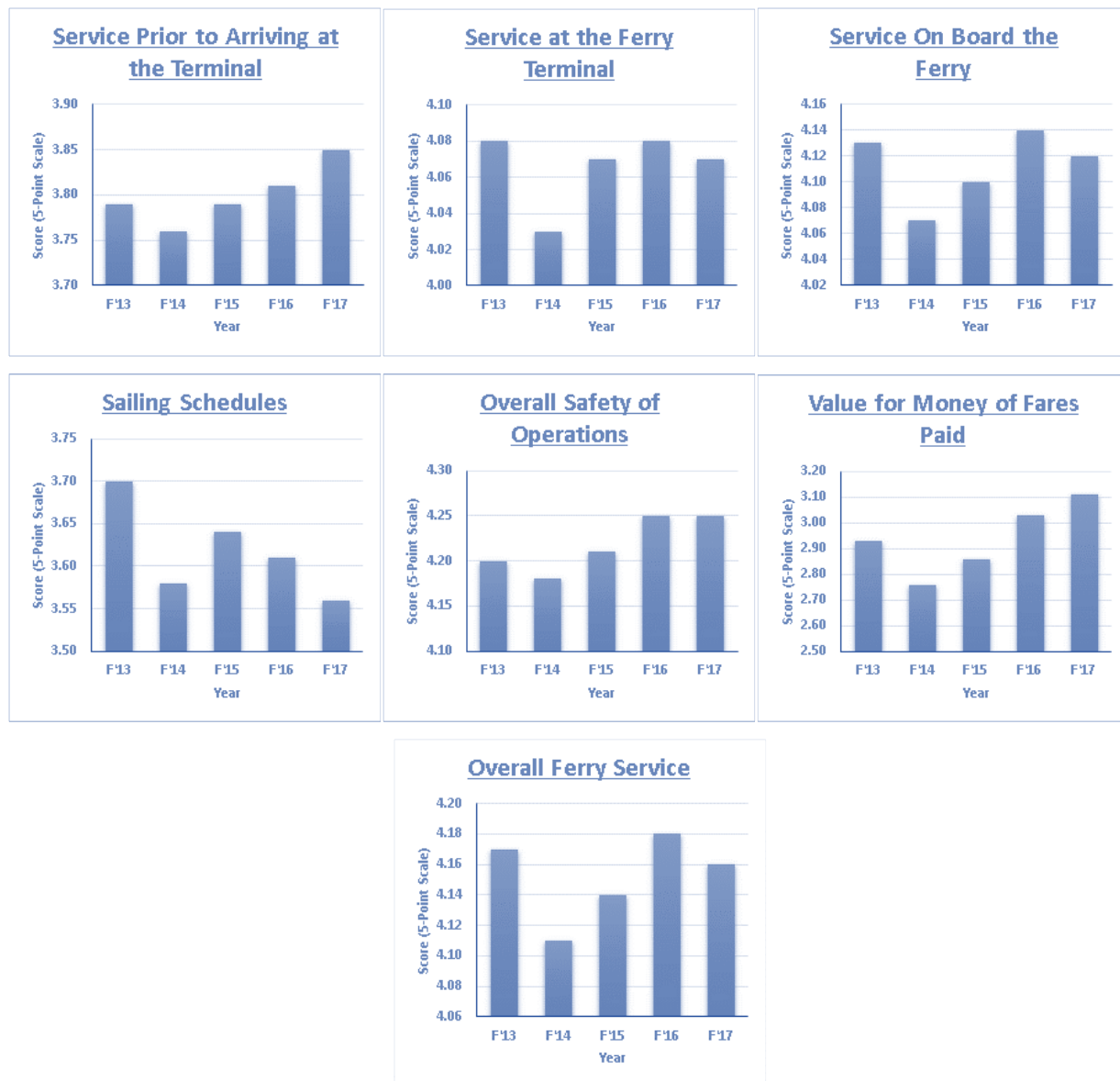
The historic results from the CST Survey (Figure 7) indicate a sharp decline in customer experience during 2014, with most metrics recovering through 2015 and 2016.¹⁷⁶ Of particular interest is *Sailing Schedules*, which has been trending negatively, as well as *Value for Money for Fares Paid*, which shows an upward trend yet persistently ranks below the other metrics.¹⁷⁷ These two metrics are linked to the

¹⁷⁶ https://www.bcferries.com/files/PDFs/BC_Ferries_PUBLIC_REPORT_CST_2016.pdf

¹⁷⁷ Tariffs for both passengers and vehicles went up over 5 percent in Fiscal 2014. This was the largest annual fare increase since Fiscal 2009.

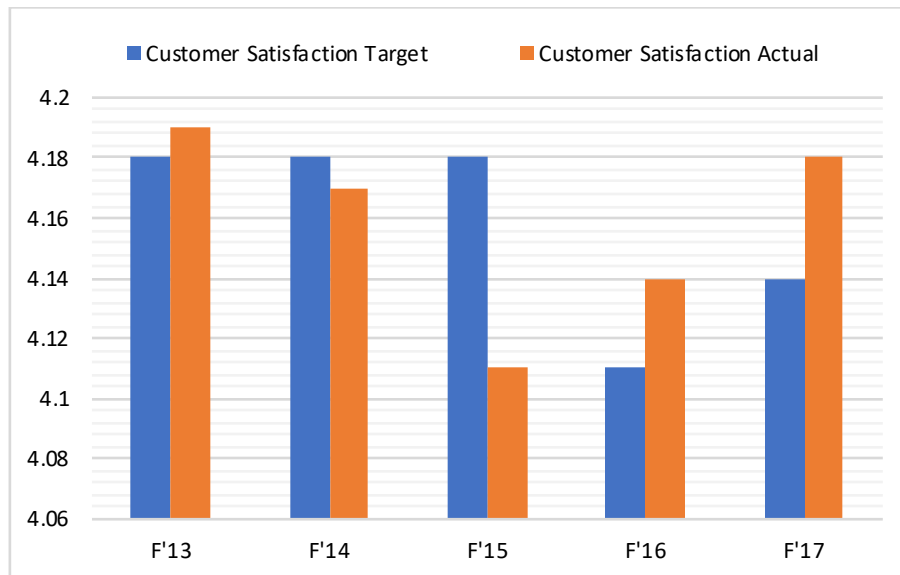
elements that BC Ferries has found to be drivers of customer satisfaction: value for money, and the ability to get on desired sailings.

Figure 23: Historical CST Survey Results



While it is clear a large amount of data is gathered through the CST Survey each year, what remains vague from our interviews and the reviewed documentation is how the aggregated findings are being used by BC Ferries in a systematic sense to inform decision-making. This being stated, customer satisfaction is one of BC Ferries' key organizational performance metrics, and it is tied to executive compensation holdbacks as well as referenced in the corporate strategic plan and the latest business plan. The customer satisfaction score (Figure 8) is based on the results of the three CST Surveys completed throughout the year.

Figure 24: Actual and Target Customer Satisfaction Results



While the customer satisfaction target remained consistent for Fiscal 2013, 2014, and 2015, the more recent targets align with previously achieved results. For Fiscal 2018, the target has now been set as 4.20 (with the actual result for Fiscal 2017 being 4.18, as illustrated in Figure 8 above). What drives this performance target setting is uncertain, as is whether the target itself provides value.

RESPONSETEK AND CUSTOMER COMPLAINTS

As mentioned, customer feedback and complaints are entered into the ResponseTek system which can generate reports at any interval. The Customer Service Centre seemingly has over 100 metrics that are observed at varying regularity. Of these, several are considered key metrics for the Customer Service Centre itself and are presented in the table below.

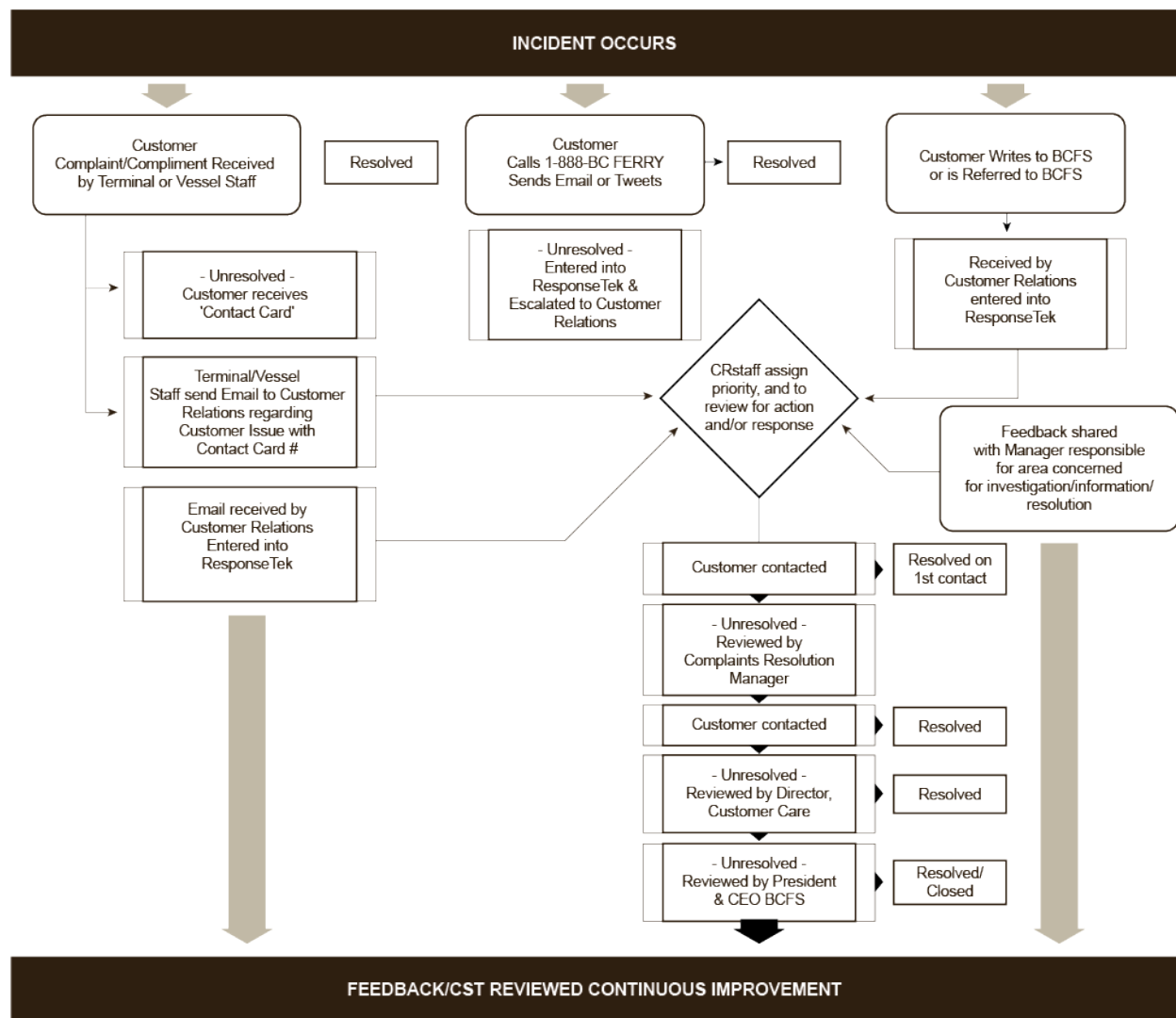
Table 14: Select Customer Service Centre Metrics and Targets

Key Metric	Target
Telephone Service Factor	80% of calls answered under 60 seconds
Average Speed of Answer	60 seconds
Average Handle Time	230 Seconds
Call Abandon Rate	< 10%
Repeat Rate	< 6% of callers phone back in the same day
Attendance	95%
Call Quality	85%

These key metrics and targets are based off research conducted in 2012 to identify best practices in the measurement of customer service across similar industries.

The customer complaint handling process (Figure 9) has been documented and is available to the public, online.

Figure 25: Customer Complaint Handling



Further detail on the tracking of, responding to, escalation of, and reporting on customer feedback through channels such as phone, fax, online, email, letter, and social media is provided on the following page.

TRACKING

Complaints are entered in ResponseTek, classified as shown in the table below, and assigned to BC Ferries personnel for a response.

Table 15: Customer Complaint Categories and Prescribed Responses

Classification	Target Response Times	Description
Urgent	1 to 2 Days	<ul style="list-style-type: none">• Immediate response required• Compensation or corrective action to be taken• Issues related to safety or security
ASAP	3 to 5 Days	<ul style="list-style-type: none">• Complaint about a specific incident or interaction• Customer advised of acknowledgement of concern and that an investigation will take place• Follow-up will occur after investigation is complete
Scheduled	5 to 7 Days	<ul style="list-style-type: none">• General comments or questions related to policies, procedures and requests for non time-sensitive information
Immediate Close		<ul style="list-style-type: none">• Comments received with no contact information provided or that may contain overly aggressive feedback and/or threatening language

ResponseTek tracks the actions in the system and alerts are sent if the matter is not resolved within the prescribed timeframe.

RESPONSE

Complaints are shared electronically with the responsible manager(s) in BC Ferries, with their reviewing and implementing corrective actions, as appropriate. Customers are also notified, typically by the same means that they used to contact BC Ferries (i.e., an email usually receives an electronic response, while a letter normally receives a mailed response).

ESCALATION

If a customer is not satisfied with the response they receive, they are escalated to the Director of Customer Care, who reviews their complaint. If the customer wishes to escalate further, the complaint will go to the appropriate member of the executive group.

REPORTING

Senior managers within BC Ferries have access to dashboards from ResponseTek, which offer a report of customer feedback relevant to their specific area. In addition, it was noted that:

- Managers receive weekly emails containing a sample of compliments and complaints;
- The Director of Customer Care reviews the top customer issues with the Operations Team by teleconference on a weekly basis;
- Quarterly and annual reports are provided at divisional meetings; and
- Any repetitive issues related to customer service are brought to the relative Vice President for additional consideration.

Outside of BC Ferries, a Feedback and Engagement Report is provided each quarter to the Commissioner which outlines the number of travellers and complaints received, the average time to respond, and the top five types of comments received with root causes, lessons learned, and actions

taken. Changes were made in the third quarter of FY2018, such that this report now breaks down customer complaint statistics by route and with a regional summary.

BC Ferries posted these reports on their website until the end of 2015. Recent reports can be found on the [BC Ferry Commission](#) website. Outlined below are select statistics and themes from the most recent Feedback and Engagement Reports.

Table 16: Feedback and Engagement Report Statistics

	FY2018 Q3	FY2018 Q2	FY2018 Q1
Customers Travelled	4.6 million	7.8 million	5.6 million
Comments Received	1,769	3,808	2,318
Average Time to Respond	7.9 days	10.6 days	4.4 days
Top 5 Complaints	<ul style="list-style-type: none"> • Loading and unloading • Cancellations and delays • On the ship • Staff helpfulness • Food and retail 	<ul style="list-style-type: none"> • Loading and unloading • Staff helpfulness • Reservations • On the ship • Cancellations and delays 	<ul style="list-style-type: none"> • Cancellations and delays • Staff helpfulness • Value for fare • On the web • Sailings

3.3 Addressing Recent Matters of Call Wait Time

BC Ferries recently published an open letter to customers that addresses concerns around call wait times along with customer service experiences. The issues faced with call volumes were linked to the introduction of the new reservation system, operational problems, and the Malahat Highway closure, among other events. In response, BC Ferries highlighted the hiring of 50 new call centre agents to manage the volume of daily calls, along with the use of communication channels to provide up-to-date information to customers.

Recognizing that issues like those faced with the Queen of Cumberland and the Malahat Highway accident were unexpected, MNP explored with BC Ferries how the addition of a new system would cause such an impact on call wait times. As reported by BC Ferries, and after the launch of the ACE booking system in March 2018, there was an increase in both the number of abandoned calls (where the customer hung up without being answered) and in the average speed of call answer.

The ACE launch was seen to have affected these two aspects by integrating what was originally four systems into one booking flow. For staff, this meant a longer call handle time as they moved through the various steps to address customer concerns and manage the bookings. In addition to this, ACE training for CSSRs was scheduled for December 2017, but then delayed until February 2018. This apparently resulted in upwards of 12 agents at a time being off the phones over a three-month period, and delays for when seasonal staff could be trained.

It was also noted that BC Ferries has analyzed their Customer Service Centre performance, as illustrated in Table 8 on the following page, and from this understanding has adopted strategies to mitigate increases in call answering and handling times. In addition to hiring additional customer service staff, BC Ferries implemented focused work streams within the Customer Service Centre. These work streams were described as addressing how specific calls are handled during busy times, as well as providing for redirected inquiries to enable other areas in the organization to assist with responses. Further to this, it was raised that a call-back feature exists and is put into operation based on the volume of calls.

Table 17: Call Volume and Staffing Statistics

	March	April	May
Forecasted Daily Calls Received	1,500	1,650	2,300
Actual Daily Calls Received	1,453	1,446	2,384
Forecasted Agents on Phones per Day	32	32	36
Actual Agents on Phones per Day	12	14	18

The addition of CSSRs is expected to help lower the call wait time once they are fully trained on the system. BC Ferries also anticipates that with the introduction of the Flexibility and Digital Experience Initiative, more customers will reserve and adjust ferry bookings online. This shift to having more customers able to self-manage their booking should result in less calls to the Customer Service Centre and reduce call wait times.

3.4 General Conclusions and Future Directions

There are four principle areas of conclusion related to customer feedback and service quality.

1. **Confirm the use of integrated reporting and systematic decision making.** While the individual processes, such as for customer complaint resolution, are known (e.g., receipt of individual feedback and its handling, including reporting through ResponseTek), it is less clear how information is being integrated across the various avenues for feedback and then systematically used to drive decision making.
2. **Broaden the accountability for addressing customer complaints.** The customer Engagement and Feedback Reports are made available through the [BC Ferry Commission](#) website. If the intent of these reports is to hold BC Ferries accountable to the Commissioner, this practice is sufficient. If the intent of these reports is also to hold BC Ferries publicly accountable, then they should be published and easily accessible on the BC Ferries website as well.
3. **Revisit the setting of the customer satisfaction target.** There are long-standing principles associated with the setting and use of targets in performance measurement, including the ability to judge actual performance relative to what the organization strives to achieve in the future. In recent years, BC Ferries' customer satisfaction target has mirrored past performance, instead of reflecting future aims. The setting of a customer satisfaction target should be revisited, with due consideration of ensuring these targets are meaningful.
4. **Formalize operational issues resolution.** It was stated that BC Ferries is currently working to improve the tracking of issue resolution across all avenues. This process should include the resolution of individual complaints as well as of larger issues. A more formal structure for operational managers to record resolution would deepen the understanding of the responses taken to better the customer service experience.

The four areas are explored in greater detail, below.

CONFIRM THE USE OF INTEGRATED REPORTING AND SYSTEMATIC DECISION MAKING

As many avenues for customer feedback exist, BC Ferries should be consolidating this information into a meaningful format and then ensuring that senior management and executives systematically consider it in

their decision-making as it relates to sustaining (if not improving) customer service quality and experiences. It is apparent that BC Ferries collects a large amount of data from ferry passengers by means of the CST Survey. Added to this is the reporting that takes place through ResponseTek on customer complaints.

What is not apparent, though, is how this information is brought together and then referenced in decision-making on a regular basis to understand not only the trends but also the pain points for customers, the positive circumstances, any related issues, and possible resolutions. For example, there are statistics on the percentage of passengers unable to board their desired sailings, on-time performance, and, passenger ridership, to name just a few.¹⁷⁸ These, among other statistics, should be combined with the insights from handled complaints and as raised through the CST Survey as well as during various committee meetings, then brought forward in keeping with set agendas for the senior management and executive tables.

BROADEN THE ACCOUNTABILITY FOR ADDRESSING CUSTOMER COMPLAINTS

The *Coastal Ferry Act* requires an approved complaints process and report on the number, nature, and disposition of the customer complaints received at regular intervals. The quarterly Feedback and Engagement Reports are provided to the Commissioner and made public on the [BC Ferry Commission](#) website. This provides for accountability to the Commissioner, but the reports are not easily found by customers and other interested individuals who would reasonably be expected to look on the BC Ferries website. BC Ferries should post the quarterly Feedback and Engagement Reports on their website, as they did prior to 2016. Also, to improve accountability, the Feedback and Engagement Reports should offer comparisons to previous quarterly periods and years, further demonstrating if and/or how complaints have been resolved over time.

REVISIT THE SETTING OF THE CUSTOMER SATISFACTION TARGET

The customer satisfaction target is one of several used by BC Ferries to track overall organizational performance. While this target was set at 4.18 for Fiscal 2013, 2014, and 2015, Fiscal 2016 and 2017 had targets of 4.11 and 4.14, respectively, which each match the actual customer satisfaction score achieved the year prior. For the target to be truly meaningful, it should account for the desired levels of performance in keeping with strategic aims and in combination with what BC Ferries can reasonably achieve based on current initiatives and infrastructure.

FORMALIZE OPERATIONAL ISSUES RESOLUTION

In BC Ferries' quarterly customer Feedback and Engagement Reports, a section outlines complaint themes and subsequent explanations for the issue along with actions being taken. However, this type of analysis and reporting is mainly done for larger (common) issues. A mechanism should be put in place to record the improvements made by operational managers and staff to resolve customer complaints and address any related feedback from other sources. This would be valuable from an accountability perspective, as well as to inform improvements across several vessels, routes, terminals, and other customer touch points.

4. INFORMATION TECHNOLOGY

4.1 Setting the Context for the Information Technology Department

BC Ferries is highly dependent on technology to support all aspects of their operations. In addition to the need to maintain a base infrastructure for business operations, BC Ferries currently leverages technology to:

¹⁷⁸ https://www.bcferry.com/current_conditions/Stats.html

- Monitor fleet operations.
- Interact with, and provide services to, customers.
- Collect fares.
- Communicate with the public.
- Support internal business functions.

Effective use of technology has the potential to enhance BC Ferries' operations along with the delivery of excellent customer service. On the other hand, issues with technology services or projects can undermine operations and damage BC Ferries' reputation with the public.

Guiding this review of BC Ferries' technology operations and project delivery capabilities are the following questions:

- Is BC Ferries managing large information technology initiatives in a manner that maximizes value to the organization while minimizing the risk of service impact?
- What is the current state of BC Ferries' two largest information technology projects, the Fare Flexibility and Digital Experience Initiative ("FFDEI") and the Automated Customer Experience ("ACE") Project?
- How is BC Ferries protecting its technology and information assets from cybersecurity risk?
- How is BC Ferries managing the ongoing operations and maintenance of its information technology environment to reduce risk and maximize the value of investments?

4.2 Management of Major Information Technology Projects

BC Ferries hired a new Chief Information Officer ("CIO"), Erwin Martinez, in February 2016. Since joining BC Ferries, the CIO has established a centralized Project Management Office ("PMO") that integrates with similar functions for capital projects within BC Ferries. Added to this is the roll-out of new requirements and standards for the management of all technology projects.

BC Ferries has adopted an approach to solution selection that considers criteria of cost and benefit as well as risk to the organization, rather than one that focuses on using a particular architecture (such as Cloud) or vendor offering.

A review of the PMO framework and associated tools and templates found that there is alignment with the Project Management Institute's Project Management Body of Knowledge¹⁷⁹ ("PMBOK") and in the adoption of current Agile technology project methodologies. It was also found that the prioritization and approval of information technology projects conforms to BC Ferries' existing capital project planning processes.

BC Ferries staff commented that the maturation of their project management practices has resulted in robust and comparative data to assess progress and to aid in anticipating difficulties. BC Ferries also has a plan to ensure continuous improvement in their processes, tools, and templates for project management and related PMO functions.

4.3 Role of the Board of Directors in Major Information Technology Projects

The BC Ferries Board of Directors ("Board") has good visibility into major information technology projects, through the Strategic Projects Committee and the Finance and Audit Committee. Planning of major information technology capital projects follows the same process as other capital projects, the results of which are routinely communicated to the Board.

¹⁷⁹ <https://www.pmi.org/pmbok-guide-standards>

The Board receives regular status reporting for in-progress projects as part of the standard board reporting from BC Ferries. BC Ferries will also engage with the Board outside of regularly scheduled meetings and reporting cycles, should a project issue warrant Board engagement.

The Board has recently formed a Technology Committee, with special responsibility for oversight of their technology. Their responsibilities include:

- Information technology (i.e., governance, strategy, investment, resourcing, risk, disaster recovery, security, and trends).
- Approved information technology related projects.
- Data management.

This committee will begin meeting following the June 2018 board meeting.

BC Ferries leadership report that the Board is engaged and knowledgeable on technology issues and able to ask informed questions regarding BC Ferries' technology projects and operations.

4.4 Current State of Major Information Technology Projects

BC Ferries currently has twenty-two (22) capital information technology projects underway. The two highest profile transformation initiatives (from the perspective of impact on customer service and experience) are the FFDEI and the ACE Project.

FARE FLEXIBILITY AND DIGITAL EXPERIENCE INITIATIVE (FFDEI)

BC Ferries is investing in the implementation of two key business strategies: Fare Flexibility and Revenue Management, and Digital Experience. Together, these will modernize the way BC Ferries sets pricing, sells travel, and manages capacity utilization of sailings. BC Ferries has stated that these strategies will increase customer satisfaction, allow the customer more flexibility in selecting fare products, and enable a more optimal utilization of terminal and vessel capacity, which will, in turn, reduce pressure on future fares.

The Fare Flexibility and Revenue Management Strategy sets out a new revenue management system to deal with fares and improve operational efficiency through better capacity handling. The vision of this strategy involves a change to the current business model on reservable routes so that, in the future, customers will be able to pay the full applicable fare in advance, without a separate reservation fee, and will have access to discounted fares (subject to availability). This strategy will require the implementation of revenue management software ("Decision Support System") to manage fare availability in the booking of a sailing. The table on the following page outlines the schedule followed by the budget for the FFDEI.

Table 18: FFDEI Schedule

	Originally Approved Schedule	Approved Schedule August 2016	Revised Schedule February 2018 (pending approval)
Start Date	May 1, 2014	May 1, 2014	May 1, 2014
System Available for Use Date	Various starting June 30, 2015 to May 31, 2016	Various starting July 2017 to March 2018	Various starting May 2018 to March 2019
End Date	Aug 31, 2016	April 30, 2018	March 31, 2019

Table 19: FFDEI Budget

Time Frame	Event	Budget Milestone
Jan 2014	Detailed business case approved	Approved budget including IDC \$12.7M
May 2014	Project commenced	No change to Approved Budget
Nov 2014	Section 55 approval	No change to Approved Budget
Jun 2015	Business requirements approved	No change to Approved Budget
Sep 2015-July 2016	Negotiated Request for Proposal (NRFP) process	No change to Approved Budget
Aug 2016	Re-planning exercise following NRFP process	Approved budget including IDC \$18.6M
Feb 2018	Change in vendor and re-planning exercise	Budget including IDC

MNP carried out a review of the FFDEI in 2016 for the Commissioner, as part of that office's consideration of a Section 55 Application for the project. Based on the project timeline provided to the Commissioner as part of the Section 55 Application¹⁸⁰ (September 20, 2016), the project is significantly behind schedule, with a projected completion date of March 31, 2019 (whereas the Section 55 Application projected a completion date of April 30, 2018).

From the start, BC Ferries has encountered significant delivery issues with their original system integrator, PwC. PwC had signed a fixed-price contract for implementation of SAP Hybris software but was unable to complete deliverables as per the agreed upon schedule.

PwC did not have significant Hybris expertise and was dependent on a subcontractor to provide these services. Their relationship with the subcontractor appeared to have fallen apart, leaving PwC without the appropriate consultants to complete the work. When PwC was unable to deliver major project artifacts

¹⁸⁰ Under the *Coastal Ferry Act* (2003), the Office of the BC Ferries Commissioner has specific duties to consider capital deployment and expenditures under Section 55. At the time of FFDEI initiation, IT projects with a budget in excess of \$5 million were subject to review by the BC Ferry Commissioner. The request by BC Ferries to the BC Ferry Commissioner is commonly referred to as "a Section 55 Application".

and deliverables, BC Ferries terminated the contractual relationship and, working with SAP, conducted a review of the progress to date. This review resulted in the engagement of Ubique Digital, a firm specializing in Hybris implementations. They began this work in January 2018.

The non-performance of the original system integrator resulted in a reschedule of the project. According to BC Ferries, the project is currently proceeding as per the new schedule. The change of system integrator also impacted the overall project cost by an estimated \$200,000 (up to \$18.8M from \$18.6M). BC Ferries has stated that this additional cost will be covered by existing project contingency and will not require a budget increase.

BC Ferries believes that the implementation of an information technology PMO, as well as governance changes made after the departure of the original system integrator, enabled them to recognize that the project was at risk and allowed them to make the appropriate course corrections in a timely manner.

AUTOMATED CUSTOMER EXPERIENCE (ACE) PROJECT

The objective of the ACE Project is to enable BC Ferries to enhance the overall customer experience through business transformation. The program has adopted a phased-release approach, as outlined below. Each release focuses on replacing aging systems and outdated technology with solutions that will enhance the capabilities of the organization, in alignment with corporate objectives and the overall customer experience.

The ACE Project was initiated in June 2007 with an original projected finish date of June 2015. The schedule has been re-planned several times, with the current completion date projected to be June 2020.

Re-planning exercises have addressed changing priorities and technical challenges. Some of the original scope has been modified to enable BC Ferries to meet specific functional needs, such as variable pricing and full revenue management. This included a decision to not deliver a new E-Dea Point of Sale, or POS, system. Instead, the current PowerBuilder POS will be enhanced to achieve the same functional scope.

MNP followed up on the decision to retain the current POS system and received the following rationale from BC Ferries.

As envisioned and contracted with E-Dea in the early days of the ACE Project, the plan was to have E-Dea build a Point of Sale (POS) commercial-off-the-shelf (COTS) system and to have BC Ferries be the first user of that system. The advantages of having E-Dea develop the POS included: a) E-Dea was strategically interested in having a POS COTS product; b) An E-Dea POS would likely integrate well with the E-Dea eBooking system; and c) E-Dea understands the needs of a ferry business, [which] differ quite a bit from typical retail establishment POS requirements.

There was also interest in replacing the existing POS system (we call it PowerBuilder POS). PowerBuilder POS was developed custom, in-house in 1999 using PowerBuilder, a then widely-used client-server development tool. It has been enhanced and maintained throughout its life by the BC Ferries IT Department and has been very reliable.

In the period of January 2017 through to June 2017, our ACE/FFDEI Steering Committee became concerned with a few related items:

- It was clearly going to be a challenge to maintain even a reasonable project schedule for the E-Dea POS development components of the ACE Project;*
- Initial cost estimates to implement, test and train on the new POS were coming in higher than originally envisioned;*
- E-Dea's POS system was not yet fully built; and*
- E-Dea had not yet lined up any other customers interested in implementing their POS product.*

As a result, we reviewed an analysis, which had been conducted in 2012, on ways to enhance PowerBuilder POS to support ACE. The analysis estimated the work required to support ACE, including supporting multiple fare structures and the ability to handle payment changes when making a change at the point of sale location (i.e., at the terminal vehicle gates and foot passenger counters). We updated the analysis and determined that upgrading the existing PowerBuilder POS would provide a less risky, faster, and lower cost approach than continuing with an E-Dea POS.

A recent ACE Project release (May 24, 2018) resulted in impacts to reservation information availability at terminals, which BC Ferries stated were quickly resolved. The tables below outline the schedule and budget for the ACE Project.

Table 20: Project Schedule

	Originally Approved Schedule	Amended Approved Schedule (Nov 2014)	Current Approved Schedule (Aug 2017)
Start Date	June 20, 2007	June 20, 2007	June 20, 2007
System Available for Use Date	December 30, 2014	<ul style="list-style-type: none"> Vehicle Classification System (VCS) at Horseshoe Bay Terminal: January 30, 2015 – <i>Completed</i> Release 1.0 <ul style="list-style-type: none"> Early CRM: May 11, 2015 – <i>Completed</i> Release 1.1: <ul style="list-style-type: none"> Booking, Ticketing & Check-in (eBooking) + CRM + Integration Services: June 13, 2016 Release 2.0: <ul style="list-style-type: none"> Booking, Ticketing & Check-in (POS Fast Ticketing): August 11, 2017 	<ul style="list-style-type: none"> Release 1.1: <ul style="list-style-type: none"> Booking, Ticketing & Check-in (eBooking) + CRM + Integration Services: September 2016 – <i>Completed</i> Booking, Ticketing & Check-in (eBooking) Bulk Bookings: January 31, 2018 – <i>In Progress</i> Release 2.0: <ul style="list-style-type: none"> Enhanced PowerBuilder POS: February 8, 2018 eBooking Upgrade to Support Revenue Management: November 30, 2018 PowerBuilder POS Further Enhancement (phase for Revenue management): March 31, 2019 PowerBuilder POS Further Enhancement (final phase: full scope): March 31, 2020
End Date	June 30, 2015	July 31, 2019	<ul style="list-style-type: none"> Release 1.1 Booking, Ticketing & Check-in (eBooking) + CRM + Integration services: March 31, 2018 Release 2.0: Booking, Ticketing & Check-in (Fast Ticketing): June 30, 2020

Table 21: ACE Project Budget

Time Frame	Event	Budget Milestone
June 2007	Project commenced	N/A
Oct 2011	Scope Approved	N/A
Nov 2011	Detailed business case approved	Approved budget including interest during construction (IDC) \$39.4M
Dec 2011	Business requirements approved	No change to Approved Budget
May 2012	RFP responses for Booking Ticketing and Check-in system received	No change to Approved Budget
Jan 2013	E-Dea (Reservation System) contract signed	No change to Approved Budget
Jan - Jul 2013	GAP analysis performed with E-Dea	Approved Budget (Aug 2013) including IDC \$56.7M
Mar – Aug 2014	Re-planning exercise Program was broken down into multiple phases (3) and releases	Approved Budget (Nov 2014) including IDC \$72.8M
Mar-Sept 2015	Vendors contracted through an RFP process to implement CRM, integration services and Testing Services	No change to Approved Budget
Jun 2017	Re-planning exercise Change to POS approach, schedule de-risked and integrated with FFDEI.	No change to Approved Budget

The following table and figure provide a summary of the functionality delivered by each ACE project phase:

Table 22: ACE Project Phases

ACE Project Phases

Pilot Phase

- Implement Vehicle Classification System (VCS) at Horseshoe Bay Terminal as a pilot

Phase 1 – Release 1.0: Customer Relationship Management (CRM)

- Deployment of CRM to support Finance tracking Commercial Customer Account transactions

Phase 1 – Release 1.1: Reservations

- Deployment of customer profile and account management functionality (CRM) for Customer Care, Vacations Centre, Northern Terminals
- Reservations (eBooking) to support Customer Care, Vacations Centre, Northern Terminals. Customer Care to book on behalf of Commercial Services Division (CSD)
- Existing website and Interactive Voice Response (IVR) to be modified to support this initiative so that customers can book online or on the phone
- CRM, Travelink, and eBooking integration to support the launch of Travelink and eBooking from CRM
- Tracking of financial transactions completed
- Integration with BC Ferries legacy back office applications, Chief Stewards' website, Trailer Movement, Current Conditions

Phase 1 – Release 2.0: Redemptions

- Updates to the pricing model within eBooking to support the implementation of Revenue Management
- Ticketing/point of sale (POS) software
- Show & Go Ticketing and Reservation Redemption Services/POS – Improved reservation and amenity redemption, arrival check-in, terminal ticketing (integrated with traffic management)
- Mobile reservations redemption
- Drop trailer ticketing including trailer numbers
- Integration with the Payment Service
- Integration with traffic statistics
- Integration with the passenger manifest
- Integration with Kiosks to update booking status and payment information

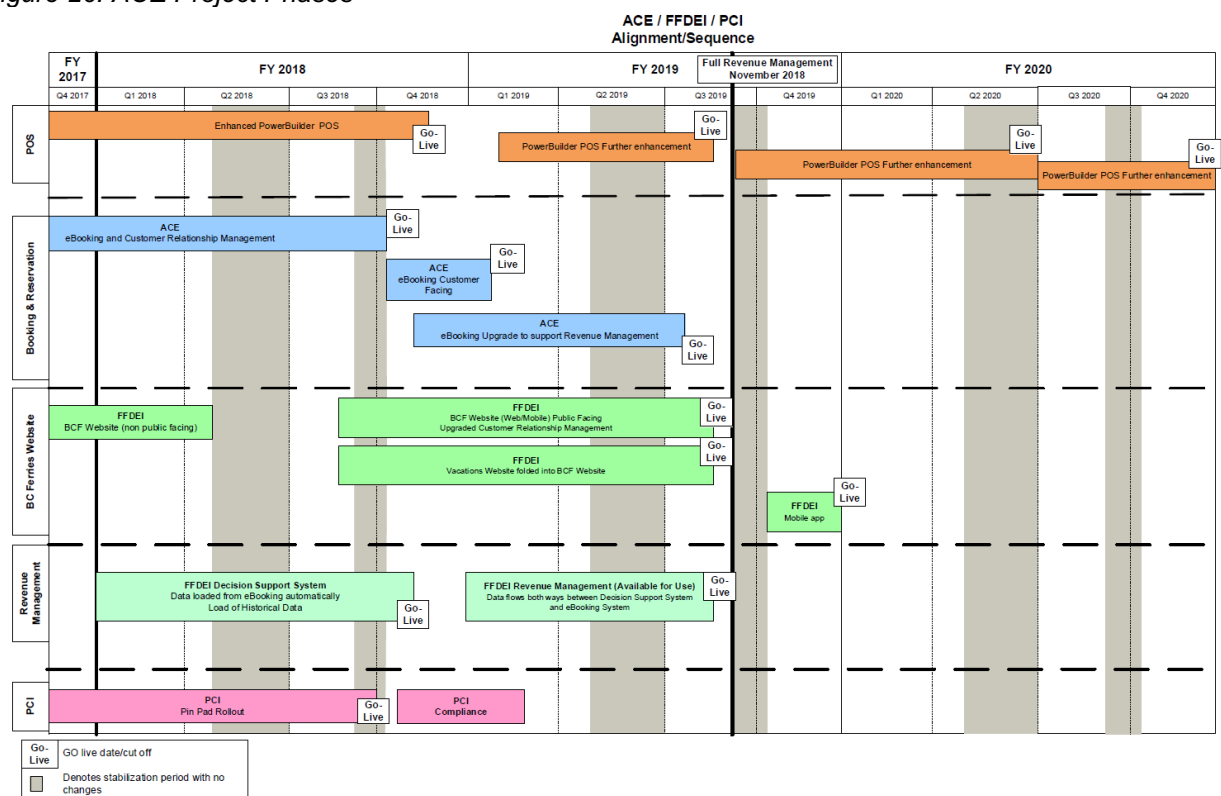
Phase 2 – Extended CRM & Card Services

- Replacement of Smart Media by CRM Card Services
- Replacement of Employee Travel Pass (TPASS) by CRM Card Services
- Internal and third-party gift cards
- Loyalty and rewards programs
- Marketing programs and campaigns

Phase 3 – Terminal Hardware

- Ticketing application for Kiosks, VCS full rollout, baggage tagging, hand-held embarkation, turnstiles
- Handheld POS

Figure 26: ACE Project Phases



Source: BC Ferries presentation – Automated Customer Experience (ACE) Fare Flexibility & Digital Experience Initiative (FFDEI) Scope, Schedule & Budget Timelines

4.5 State of Cyber Security

BC Ferries has a comprehensive cyber security plan, which includes:

- An appropriate strategy for BC Ferries IT environment perimeter protections.
- Standardization of the security architecture for all information technology operations.
- Mature security awareness training for all staff, including those on vessels.
- Segregation of networks supporting vessels, office operations, Internet of Things (IoT), and customers.
- A defined incident response plan.

The cyber security plan is appropriately executed, and BC Ferries actively assesses and manages threats and their defence against them.

4.6 Management of Information Technology Operations and Infrastructure

BC Ferries has adopted several industry-standard methodologies for their information technology sustainment operations, including:

- COBIT 5 to ensure strong information technology governance decisions.
- ITIL to manage service desk operations.

BC Ferries' Information Technology Department has a long-term technology strategy, aligned with the corporation's organizational goals. The team conducts regular operational planning and has targeted plans for cyber security along with business continuity.

The Information Technology Department conducts regular risk reviews that feed into the organization's enterprise risk management. They have also implemented a continual improvement program to actively seek improvements to their information technology operations.

The transition of new applications to operations is managed in a controlled manner with appropriate planning, review, and signoffs.

Overall, the information technology operations appear well planned and are supported by an appropriate structure for an organization of BC Ferries' size and complexity.

4.7 General Conclusions and Future Directions

MANAGEMENT OF MAJOR PROJECTS

MNP was not able to assess BC Ferries' compliance with their project management standards and processes. Broadly, BC Ferries appears to be aligned with best practices for information technology project management, which should serve to reduce risk related to large projects. There is a concern that the improvements seen most recently in the management of information technology projects may be more the result of a very strong and skilled CIO, which puts BC Ferries at risk of losing this rigour in the event of a change in information technology leadership.

BC Ferries has been challenged by large information technology projects, as is illustrated by the sliding timelines of both the ACE Project and FFDEI. It is too early to conclude if the new project management rigour will result in better schedule management.

Despite the impact on the FFDEI project schedule and budget, the change of system integrator is a positive step, providing BC Ferries access to significant Hybris expertise. Hopefully this experience will influence BC Ferries' future selection of system vendors, by focusing selection on the vendor's actual capacity and capabilities rather than their size and reputation.

MNP noted that the ACE Project has de-scoped the replacement of the POS system. The decision to not go ahead with the E-Dea POS seems sound, given the situation with the vendor and the completeness of the solution. However, the decision to stay on PowerBuilder has some inherent risk. Namely, PowerBuilder is not a mainstream platform and skilled development along with sustainment resources are becoming increasingly difficult to come by. BC Ferries does have a comprehensive resourcing plan to retain and develop PowerBuilder resources (both internal and contract), but there remains a resourcing risk that will need to be actively managed for as long as BC Ferries maintains these applications.

MNP currently has limited insight into BC Ferries' quality assurance processes related to new systems. The recent reservation issues with the ACE Project, however, may have been avoidable with additional testing prior to go-live. It was also found that there is no apparent requirement for third-party oversight or regular reviews of large information technology initiatives, an emerging best practice within the provincial public sector.

CYBER SECURITY

BC Ferries has a comprehensive cyber security plan and appears to have an appropriate focus on security awareness training. MNP noted that BC Ferries uses third-party expert reviews of the effectiveness of their cyber security practices. BC Ferries also uses third-party penetration testing of their defenses annually. BC Ferries additionally tests external-facing systems quarterly, in keeping with the Payment Card Industry Data Security Standard ("PCI-DSS") best practice.

INFORMATION TECHNOLOGY OPERATIONS AND INFRASTRUCTURE

MNP was not able to assess BC Ferries' compliance with their operational and service delivery (i.e., COBIT and ITIL) standards and processes. Overall, BC Ferries appears to be aligned with best practices for information technology service management, which should reduce operational risks and enhance service delivery capabilities. Further investigation would be required to evaluate the extent to which these standards and methodologies have been absorbed into the culture of BC Ferries.

5. INNOVATION AND BUSINESS DEVELOPMENT DIVISION: STRUCTURES, PROCESSES, AND ROLES

5.1 Setting the Context for the Innovation and Business Development Division

The Innovation and Business Development (“IBD”) Division was established in the fall of 2017 with Captain Jamie Marshall, former Vice President of Fleet Operations and Vice President of Safety, Security and Environment, at its head.

The impetus for the IBD Division, and essentially the mandate, has been described as enabling strategic business opportunities to grow and diversify the revenues of BC Ferries. Related aims were reported to be the strengthening of customer service, realization of efficiencies, reduced business risk, and encouragement of an organizational culture of innovation. Further setting the backdrop for the IBD Division is BC Ferries’ strategic plan, including the third tier of “Innovation and Opportunity”. Added to this is the latest business plan (March 2018), in which innovation is found in the vision statement as well as being a strategic driver and a means for realizing five of the six goals.¹⁸¹

In considering how innovation will assist in meeting these goals, this was described as involving capital investments along with the programs, and services of BC Ferries. There were many examples provided of what could be an innovation within BC Ferries, such as:

- A Royal Bay to Esquimalt or downtown Victoria ferry route;
- Door-to-door foot passenger service in partnership with ride-share companies;
- Further pursuit of renewable energy sources; and
- Changes in vessel design or crewing.

While there are currently no staff reporting to Captain Jamie Marshall, a recruitment process is underway for a Manager of Business Development and a fall recruitment is planned for a Manager of Innovation. The fiscal 2018/2019 budget for the IBD Division is \$682,085.

5.2 Understanding the Structures, Processes, and Roles

BC Ferries has a well-established approach to preparing and adopting business cases for capital along with major operating projects, covering in part the scope, options, financial implications, budgetary considerations, and timeframes for such investments. Although it was noted that these aspects will be retained in business cases for the IBD Division, the structures, processes, and roles remain in-progress, not being fully established within BC Ferries.

It was also highlighted that research into comparable organizations across Canada and in other jurisdictions, such as Scandinavia, was combined with insights gained from an advanced leadership course at the University of Victoria to guide how BC Ferries is implementing the mandate of the IBD Division.

STRUCTURES FOR INNOVATION

The first envisioned step for BC Ferries in fostering innovation is to form an Incubation Ideas Generator, a process and forum that will facilitate staff (referred to in this sense as “Idea Originators”) sharing their experiences and proposals. These ideas will then be transitioned to an Innovation Incubator, which will

¹⁸¹ The goals for which innovation is referred to as a strategy and tactical step are “Ensure Safe, Reliable and Efficient Operations”, “Deliver a Customer-Focused Travel Experience”, “Foster a Productive, Motivated and Engaged Workforce”, “Be a Leader in Environmental and Social Governance”, and, “Grow and Profitably Diversify Our Revenue Base”.

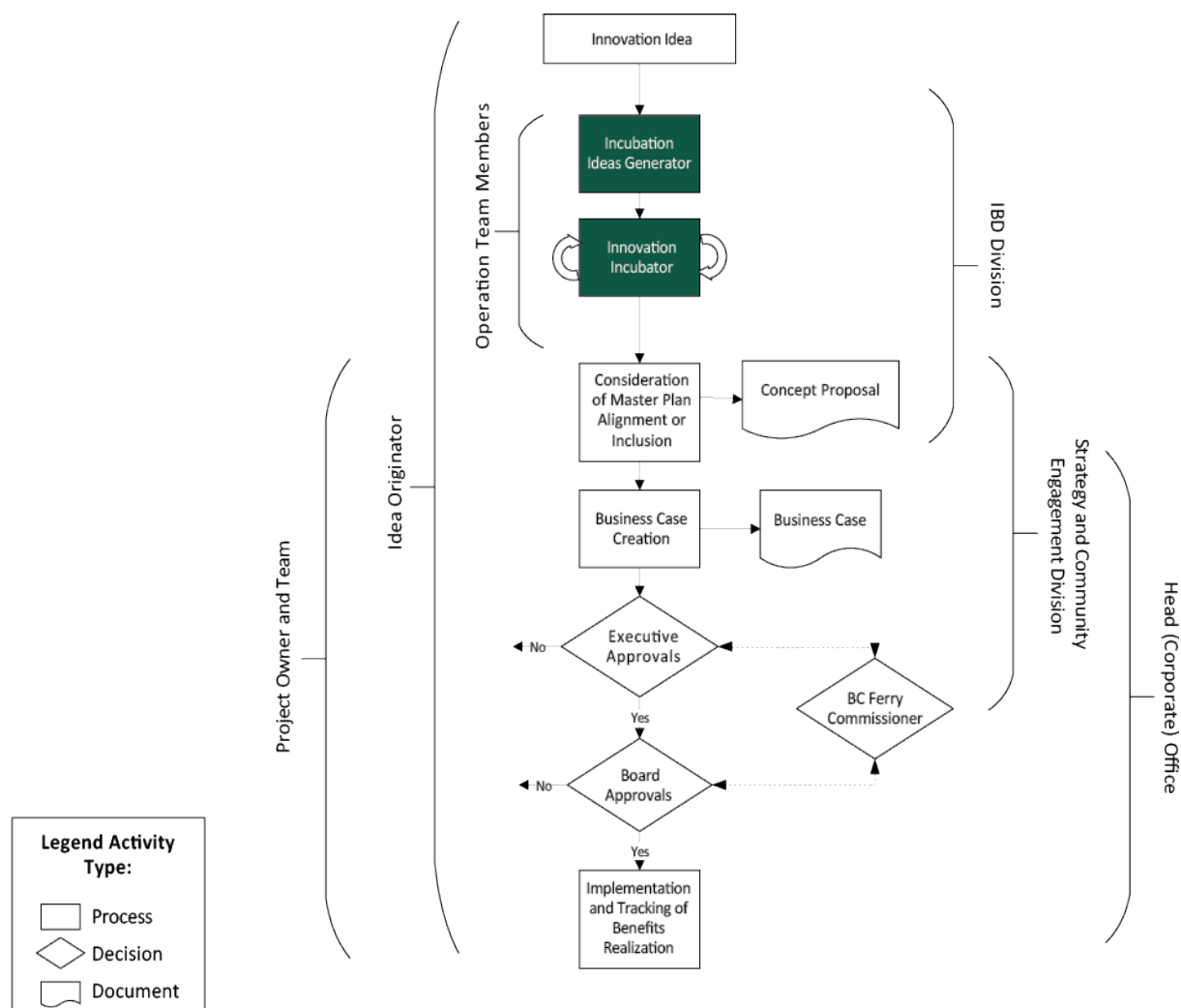
provide staff teams with the space and freedom to ask questions (e.g., is this something that customers want; could it make or save money; and, is it safe?), test the proposals, and consider factors that may drive success as much as failure.

Taken together, these structures of an Incubation Ideas Generator and an Innovation Incubator were described as creating the conditions and means for advancing innovation in BC Ferries.

PROCESSES AND ROLES

The conceptual process is described in Figure 10 below and begins with the expectation of an Idea Originator (i.e., a BC Ferries staff person from any area) remaining involved in the further development and advancement of their proposal. It was also raised that the Idea Originator will have the support of operational staff and the IBD Division as the process transitions from the Incubation Ideas Generator to the Innovation Incubator.

Figure 27: Conceptual Mapping of the Innovation and Business Case Development Process



Following this, the Strategy and Community Engagement Division¹⁸², as well as a Project Owner (i.e., BC Ferries Executive) and Project Team will be engaged to determine if the innovation under consideration

¹⁸² The mandate for this Division includes leading strategic and master planning, community engagement, Ferry Advisory Committee oversight, Indigenous relations, government relations, and corporate social responsibility.

aligns with, or if it should be included in, the corporation's Master Plan. It is at this time that a Concept Proposal, or an equivalent document, may be created to help formalize the innovation and would include any regulatory (e.g., Transport Canada) and resource implications. If taken further, a business case will be developed with expanded detail on the option(s) being advanced, risks and proposed mitigations, financial considerations, and what was described as the "soft benefits". The business case will then be presented to the executive group for approval and subsequently to the BC Ferries Board with due consideration of the requirements of the Commission. Upon final approval, implementation is advanced by the Project Owner with a retained involvement of the Idea Originator.

ROLE	RESPONSIBILITY
Idea Originator	<ul style="list-style-type: none"> Idea generation and guidance through the innovation process, including business case development Involvement in implementation, under the principle of "own the innovation"
Operational Teams	<ul style="list-style-type: none"> Testing and questioning of the proposed innovation
IBD Division	<ul style="list-style-type: none"> Establishment of core structures, processes, and accountabilities. Oversight of the Incubation Ideas Generator and Innovation Incubator
Project Owner/Teams	<ul style="list-style-type: none"> Business case creation, presentation, and implementation
Strategy and Community Engagement Division	<ul style="list-style-type: none"> Guidance on the state of alignment with organizational strategy and the corporation's Master Plan
Corporate Office	<ul style="list-style-type: none"> Approvals Oversight of monitoring of project progress and benefits

When the topic of benefits realization was raised, BC Ferries acknowledged the importance of monitoring not only well-established financial and service indicators, but also the "soft benefits" (e.g., positive impacts on communities) through a combination of performance measures and targets. Added to this was providing the opportunity to recognize the innovations and to gain insight from unexpected learnings that emerge during implementation. However, how this monitoring, reporting, and recognition based on realized benefits will take place remains to be set by BC Ferries. Initial plans indicate that projects and related measures of performance will be grouped as:

- Cost savings.
- Revenue.
- Productivity.
- Customer service.
- Environmental sustainability.

5.3 General Conclusions and Future Directions

There are three main conclusions with recommendations for business casing and related practices of the IBD Division.

1. **Ensure innovation is balanced with the "core business".** BC Ferries is traditionally a risk-adverse organization, so the pursuit of innovation as described in this summary deserves praise. However, as a large ferry operator providing essential connections between coastal communities

and in the movement of people and goods, it will be important to maintain a balance between what can be considered the “core business” of BC Ferries and its pursuit of innovation.

2. **Solidify the organizational processes and roles.** While the processes, roles, and responsibilities have been described in concept by management, these should be formalized promptly to ensure that ideas for innovation and related projects can be advanced effectively.
3. **Establish the means for benefits realization.** BC Ferries has experience with understanding the progress, as much as results, of large capital projects, but less so with the monitoring, reporting, and use of information on what has been termed “soft benefits”. The approaches for, and decision-making based on, benefits realization is unclear.

These three areas are addressed in greater detail, below.

ENSURE INNOVATION IS BALANCED WITH THE “CORE BUSINESS”

As recognized by BC Ferries, staff involved in what has been described as the Incubation Ideas Generator and Innovation Incubator, followed by business case development, will require allowances to reallocate time away from their day-to-day tasks. As well, the dialogues taking place within the Innovation Incubator and, resulting from this, the business cases themselves should allow for critical assessments of the impacts (either positive or negative) on running BC Ferries and on the organization’s operational excellence.

SOLIDIFY THE ORGANIZATIONAL PROCESSES AND ROLES

The process that was described in Figure 10 was prepared by MNP and needs to not only be confirmed but also put into practice by BC Ferries. In addition, the responsibilities and accountabilities of Idea Originators, operational team members, the Project Owner, the Project Team, and divisions in the organization, including the IBD Division, need to be set and then broadly communicated by BC Ferries. In doing so, it will be important to account for how innovation proposals may cross the lines between organizational divisions as well as priorities. The structure for approvals in these situations remains to be defined.

ESTABLISH THE MEANS FOR BENEFITS REALIZATION

Just as innovation will vary in form, so will the descriptions of what is intended to be achieved. Once a proposal has advanced beyond the Innovation Incubator, it will be important for BC Ferries, through the project sponsor and team, the Idea Originator, and the IBD and Strategy and Community Engagement Divisions (jointly), to articulate the desired benefits across different points of view (e.g., regional and provincial communities, as well as by type of benefit, be it economic and financial, social, or environmental). After this, the approach and roles for identifying performance measures, including an assessment of their meaningfulness and practicality in use, should be set. From this, an inventory of performance measures can be built up over time, providing a reference document and way of ensuring consistency in definitions. These statements of desired benefits and performance measures would then be embedded in the business case and subsequent project planning and reporting. Following on this, project achievements should be recognized, and the results should be communicated throughout various levels of BC Ferries.

6. ECONOMIC BENEFITS OF CONSTRUCTING VESSELS IN BC

6.1 Setting the Context for the Economic Benefits of Constructing Vessels in BC

According to its long-term Capital Plan, presented as part of the PT4¹⁸³ submission to the Commissioner, BC Ferries plans to spend \$1.2 billion on the construction of 14 new vessels to replace its existing aging fleet over the course of 12 years (2015 to 2026).

In this section, MNP has presented its review of the potential economic benefits of building the vessels in British Columbia, as well as the capability and capacity required for such construction to occur in the province. To provide a holistic picture, MNP has also reviewed past purchases by BC Ferries. A final summary section explores the construction of vessels in Canada, specifically BC, or outside of Canada.

6.2 Economic Outlook for BC

Between 2011 and 2017, the BC GDP grew by 2.5 percent to 3.1 percent annually.¹⁸⁴ Approximately 30 percent of the growth in GDP between 2011 and 2014 was due to the robust performance of the mining, oil and gas, manufacturing and construction sectors. The remainder was a result of increases in activity across a combination of real estate, transportation and technology related industries. Since 2014, residential construction, manufacturing, real estate, and technology related industries have continued to grow, while mining and oil and gas have declined due to a falling off in the global demand for commodities.

Economic conditions in BC have remained strong in the first part of 2018 but are expected to slow in the latter part of 2018 and into 2019. The key factors behind the anticipated moderation are:

- The Canadian economy is operating at or near capacity and this has led to an expectation that the Bank of Canada will increase interest rates to control inflation.
- There is considerable uncertainty with respect to US trade.
- Tightening of mortgage lending rules and other policy measures are expected to lead to slowing activity in the housing market.
- Employment growth through May 2018 has been flat and the unemployment rate remains below 5 percent¹⁸⁵, which suggests that the labour market is tight, and employers may be having trouble filling vacant positions.

6.3 Economic Benefits of Vessel Construction in BC

BC Ferries operates in the province, uses public dollars, and provides a public service. Many British Columbians therefore consider it a responsibility for BC Ferries to construct its vessels in the province instead of elsewhere.

In 2013, Stokes Economic Consulting undertook an analysis of the economic impacts of constructing three new ferries in British Columbia (the “Stokes Report”).¹⁸⁶ The analysis estimated that the construction of three vessels, at a total cost of \$260 million, would generate \$378.5 million in GDP and result in an increase in overall employment over three years of 1,063 workers. Government tax revenues were estimated to increase by \$66 million federally, and \$36 million provincially.

¹⁸³ Price caps are reset every four years under subsequent performance terms as part of BC Ferries’ regulation. It is currently in the 4th performance term.

¹⁸⁴ Statistics Canada, Table 36-10-0402-01 (formerly CANSIM Table 379-0030).

¹⁸⁵ Statistics Canada, Table 14-10-0287-01 (formerly CANSIM Table 282-0087).

¹⁸⁶ Made in BC Ferries: The Economic Benefits of Local Ship Procurement, January 2014

BC Ferries planned investment for the construction of 14 new vessels is \$1.2 billion. The following table extracted from BC Ferries submission to the Commissioner as part of the Capital Plan under PT4, lists the timing and type of vessel procurement of BC Ferries' new vessel projects.

Table 23: BC Ferries New Vessel Projects

PART 3.1 MAJOR CAPITAL EXPENDITURES NEW VESSEL PROJECTS	Fiscal Year
New Minor Vessel-Cable Ferry	2012
New INTERMEDIATE Vessel	2014
New MINOR Vessel: (NIP)	2016
New MINOR Vessel: (Nimpkish)	2016
New ICF Vessel-Bowen Class	2017
New MAJOR Vessel: Replacement #4 (New West)	2020
New MAJOR Vessel: Replacement #5 (Coquitlam)	2021
New MAJOR Vessel: Replacement #7 (Alberni)	2021
New MAJOR Vessel: Replacement #6 (Cowichan)	2021
New MINOR Vessel: Replacement: (Kwuna)	2024
New INTERMEDIATE Vessel: (Quinsam)	2025
New MINOR Vessel: (Kahloke)	2025
New MINOR Vessel: (Klitsa)	2025
New INTERMEDIATE Vessel: (Quinitsa)	2026

Source: Reproduced from BC Ferries submission to the Commissioner as part of the Capital Plan under Performance Term 4.

To illustrate the potential economic benefits of building the vessels that are listed in the Capital Plan of BC Ferries, the findings of the Stokes Report were applied to the planned capital expenditure of \$1.2 billion. As shown in Table 15, building 14 new vessels in British Columbia at a cost of \$1.2 billion could generate approximately \$1.75 billion in GDP, just over 4,900 jobs, \$330 million in federal taxes, and \$180 million in provincial taxes.¹⁸⁷

¹⁸⁷ This forecast considers no changes to the assumptions under the *Made in BC* report developed by Stokes Economic Consulting and is based on the extrapolation of results to BC Ferries' capital plan of \$1.2 billion. The projections have been adjusted for inflation (except for real GDP).

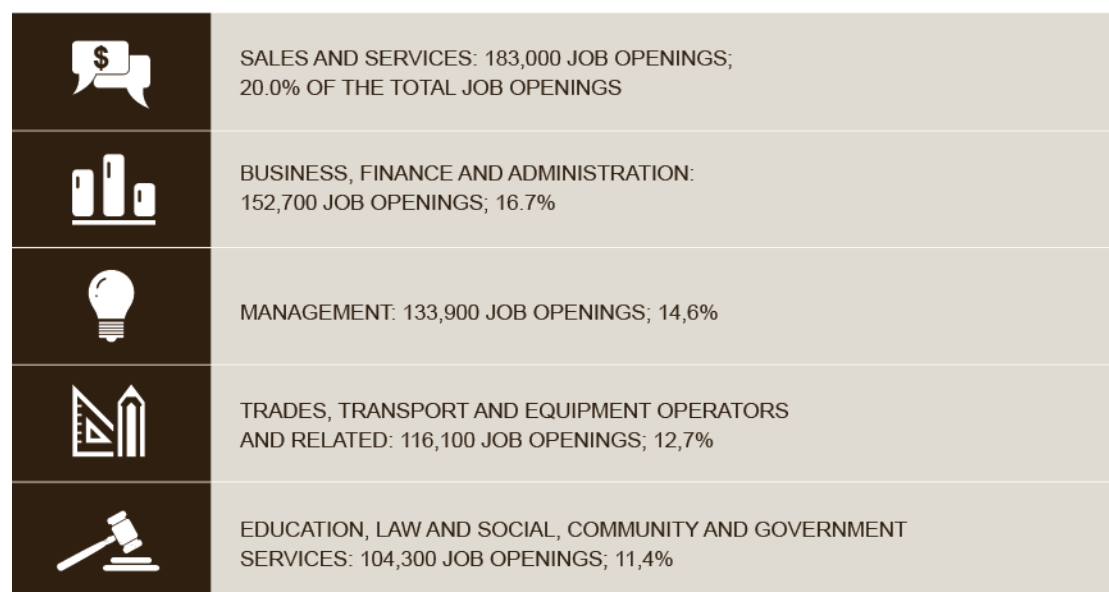
Table 24: Illustrative Economic Benefits of Ferry Construction (14 Vessels, Cost of \$1.2 Billion Over Nine Years)

Estimated Economic Impacts of Ferry Construction	
Real GDP (Cumulative)	\$1.75 billion
Federal Tax (Cumulative)	\$330 million
Provincial Tax (Cumulative)	\$180 million
Job Creation (over the course of project build-out)	4,906

6.4 Labour Market and Gap Analysis

The annual British Columbia Labour Market Outlook, 2017 edition, highlights the top five major occupational groups in BC that are expected to increase over the next ten years.¹⁸⁸ As Figure 11 shows, nearly three quarters of the total job openings are expected to be in the top five occupational groups. Further to this, three occupational groups account for more than half (51 percent) of the projected job openings in British Columbia between 2017 and 2027.

Figure 28: Occupational Outlook, 2017 to 2027

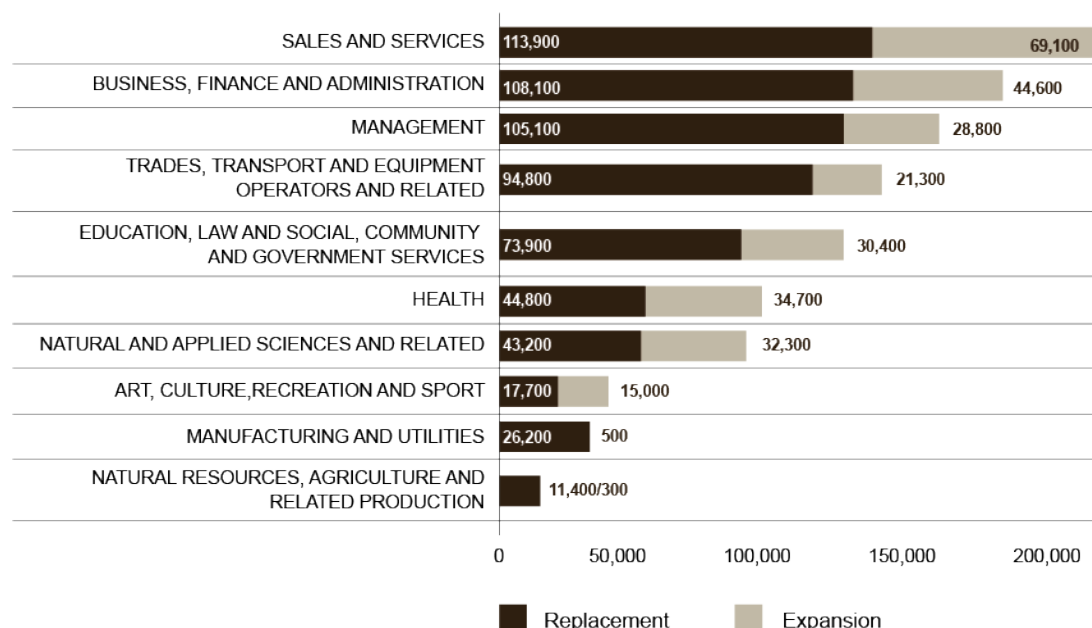


Source: Reproduced from the British Columbia Labor Market Outlook, 2017 Edition, Page 12.

The trades, transport and equipment operators occupational group, which includes trades that work in the shipbuilding sector like millwrights and welders among others, is projected to expand by approximately 21,300 job openings between 2017 and 2027. This is in addition to expected replacements resulting from retirements, death, disability and layoffs (redundancies). Figure 12 is reproduced from the referenced British Columbia Labor Market Outlook and provides a comparison across select occupations in terms of job openings.

¹⁸⁸ https://www.workbc.ca/getmedia/66fd0e7c-734e-4fcb-b1a6-0454862525a6/BC_Labour_Market_Outlook_2017_Edition_Nov_2017.PDF.aspx

Figure 29: Job Openings by Major Occupational Group, 2017 to 2027



Source: Reproduced from the British Columbia Labor Market Outlook, 2017 Edition, Page 13.

Malatest Program Evaluation and Market Research (“Malatest”) conducted an analysis of the shipbuilding and repair workforce in British Columbia. In their reporting, it was highlighted that the shipbuilding and repair sector competes with several other industries for similar workers, and that training support programs do not exist for many occupations, including all marine trades. Post-secondary education and apprenticeship programming is widely used among larger employers, whereas smaller establishments tend to train workers on-the-job.

According to Malatest, maintenance, repair, and retrofits have been the primary activities of BC shipyards since the early 2000’s. While this has contributed to the development of a highly-skilled workforce in these areas of activity, there have been fewer opportunities to sustain a current along with future generation of shipbuilders. The following table reproduced from Malatest highlights some of the training gaps that currently exist.¹⁸⁹

Table 25: Shipbuilding and Repair Workforce Training Gap Analysis – Survey Results

Occupational Category	Presence of Training Gaps (# employers)	Commentary
Management Workers	Yes: 5	<ul style="list-style-type: none"> Knowledge of BC Marine suppliers and risk management lacking Limited knowledge of the marine industry Not enough training for estimators, job planning and scheduling Training specific to marine Would like to see better along with more available project management and time management courses (e.g., BC Construction Association).
	No: 4	<ul style="list-style-type: none"> All employees are university trained In general, managers are taken from the technical ranks, internally

¹⁸⁹ https://www.workbc.ca/getmedia/bc209930-d5b8-46ff-ba22-703a9c7304ab/Industrial-Marine_Labour-Market-Research-Report_Feb14.pdf.aspx

Occupational Category	Presence of Training Gaps (# employers)	Commentary
Professional Engineers, Technologist and Technicians	Yes: 8	<ul style="list-style-type: none"> • Little to no knowledge of marine engineering at the mechanical, hydraulic or controls level • Mechanical Engineers, Naval architects • Would like to see better as well as more available project management and time management courses (e.g., BC Construction Association). • Foreign technicians are more familiar with foreign built ship systems • Training specific to marine
	No: 1	<ul style="list-style-type: none"> • UBC needs a better Naval Architecture program
Critical Function and Support Specialists	Yes: 3	<ul style="list-style-type: none"> • Estimating, planning, quality assurance, quality control • Knowledge of Canadian marine suppliers' base, concept of engineering material substitution, ability to estimate complex jobs • Training specific to marine
	No: 5	<ul style="list-style-type: none"> • Filled internally from tech staff to date
Traditional Trade Workers	Yes: 4	<ul style="list-style-type: none"> • Hard to find experienced people who want to work • Steel fabricators, 'A' level welders, machinist • Trades people not interested in upgrading due to lack of available work
	No: 3	
Marine Trades Workers	Yes: 3	<ul style="list-style-type: none"> • We need a local marine academy that teaches marine mechanics, hydraulics and controls engineering • Training specific to marine
	No: 2	

Source: Reproduced from the BC Shipbuilding and Repair Workforce Table Labour Market Research and Analysis Project, June 21, 2012.

While there are positive economic benefits expected from vessel construction on the overall provincial economy, the analyses suggest that there may be constraints with the availability of skilled labour.

6.5 General Conclusion on the Economic Benefits of Vessel Construction in BC

The construction of vessels in British Columbia could be expected to have positive economic benefits in terms of GDP, employment, and taxes. The findings of the Stokes Report suggest that the construction of all of BC Ferries' planned vessels could generate GDP impacts of approximately \$1.75 billion in British Columbia over the 12 years of the capital plan build out, employment of just over 4,900, and tax revenues of \$0.5 billion.

6.6 Future Directions and Opportunities

MNP has reviewed the benefits of the construction of new BC Ferries vessels in the province and the limitations that currently exist in the shipbuilding sector, leading to the following recommended directions for future consideration.

HIGH VALUE-ADD SERVICES

BC shipyards have an opportunity to develop new and advanced technology for vessel construction. While other countries may offer lower production costs, proprietary technology developed in Canada could create a niche offering for key aspects of vessel construction, such as low emission systems. For

BC, this could also lead to vessel development opportunities from other organizations in Canada and around the world. An example of this is found in Corvus Energy, a designer of battery systems based in British Columbia. The company is becoming known internationally for its battery technology that can power ferries. Sweden-based Stena Line has selected Corvus to supply the battery for its first hybrid-style ferry.¹⁹⁰

DETAILED STUDY OF VESSEL PROCUREMENT

Given that only a few use-cases exist based on BC Ferries' recent procurements from overseas, and especially in light of BC Ferries' long-term capital plan, there is a need to undertake a detailed analysis of the economic impact of procuring BC Ferries vessels within and outside of the province. This detailed study will help inform future directions that the Provincial government (and perhaps the Federal government) could take in support of further developing the shipbuilding and repair industry in British Columbia.

DETAILED STUDY ON LABOR MARKET GAPS FOR SHIPBUILDING

While MNP has provided high-level observations using an analysis conducted by Malatest for the sector, the Province should consider conducting a detailed study to better understand the constraints and opportunities for shipbuilding in British Columbia, with specific considerations for BC Ferries capital plans.

HUMAN RESOURCES DEVELOPMENT IN THE SECTOR

The shipbuilding and repair industry is collectively facing the dual challenge of replacing an aging workforce and meeting future requirements driven by investment. The demand for skills and training has reached a critical point for the industry as alternative sources, such as hiring from other companies and industries, is no longer considered a viable long-term strategy. The shipbuilding and repair industry competes with several other industries for similar workers, including businesses that supply fabricated products. Competition for younger, skilled workers is intense throughout the BC economy, which highlights the importance of recruiting, training, and developing workers from within the industry. Considering these challenges, the advantages of working in the shipbuilding and repair industry should be emphasized, such as the potential for long-term employment.

The Malatest report's observations highlighted the need for a coordinated effort by the Province to support workforce development through the establishment of an industry governance body as well as a human resource strategy for the sector. Elements of such a strategy include:

- **Inform.** Working with industry, education providers, and community partners to inform and raise awareness of the benefits and career opportunities associated with BC's Shipbuilding and Repair industry.
- **Recruit.** Focusing on local sources of new and experienced workers with skills and qualifications applicable to the industry, as well as migrants from other parts of BC, Canada, and the world to fill gaps in higher-demand occupations.
- **Develop.** Developing marine-specific training and upgrading in support of entry-level, marine trades, production management, and critical function occupations.
- **Retain.** Company and industry initiatives that focus on promoting workers from within the industry, and other efforts to retain the existing workforce even during periods of slower economic activity.

Overall, there is an opportunity to prepare the local workforce in anticipation of the construction of advanced technology ships in the coming years in British Columbia.

¹⁹⁰ <http://www.cbc.ca/news/canada/british-columbia/why-bc-ferries-won-t-be-going-all-electric-anytime-soon-1.4663909>

7.3 Coastal Community Profile

The demographics of the coastal regions of British Columbia have been changing over the last five years, as explained in the sections that follow.

POPULATION GROWTH

As shown in Table 17 below, population growth in British Columbia has been increasing steadily at roughly 1.2 percent annually. While Nanaimo has seen its population grow at a rate that is higher than the provincial average, other regions that make up the coastal destinations have not been growing at as consistent a rate. Overall, the coastal regions in this province have been getting bigger in terms of total population.

Table 26: Coastal Community Population Demographics (2013 to 2017)

Population Demographics and Projections for Coastal Communities					
	2013	2014	2015	2016	2017
British Columbia	4,692,953	4,751,612	4,807,794	4,866,947	4,925,605
Percentage Change		1.25%	1.18%	1.23%	1.21%
Nanaimo	150,460	152,422	154,451	158,051	160,942
Percentage Change		1.30%	1.33%	2.33%	1.83%
Sunshine Coast	29,036	29,208	29,232	29,069	29,390
Percentage Change		0.59%	0.08%	-0.56%	1.10%
Vancouver Island/Coast	777,712	784,573	791,851	805,826	815,997
Percentage Change		0.88%	0.93%	1.76%	1.26%
Gulf Islands	15,267	15,432	16,038	16,518	16,749
Percentage Change		1.08%	3.93%	2.99%	1.40%

Source: British Columbia Population Estimates, Municipalities, Regional Districts and Development Regions 2011-2017¹⁹²

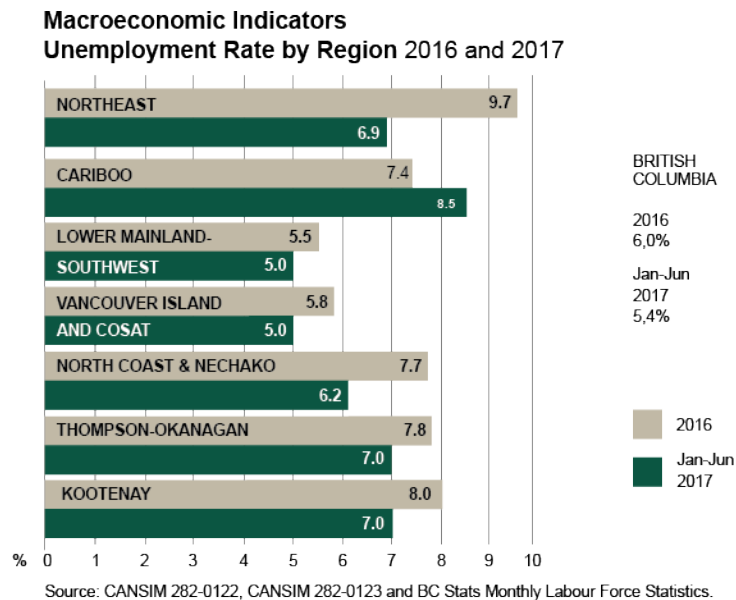
EMPLOYMENT

As of July 2017, the unemployment rate on Vancouver Island was the lowest in British Columbia at 4.6 percent. This suggests that the labour market is tight, and employers are experiencing some difficulty filling vacant positions. Migration patterns and construction activity further indicate that there is likely employment growth in most regions of Vancouver Island. Figure 15 on the following page provides a snapshot of the regional unemployment rate in BC in 2016 and over the first half of 2017.

Turning to the types of industry, Table 18 on the following page demonstrates that for the Vancouver Island and Coastal regions, the service sector is significantly larger than the goods-producing sector. Further to this, the unemployment rate in the goods-producing sector has been approximately 7 percent compared to around 3 percent in the service sector.

¹⁹² <https://www2.gov.bc.ca/gov/content/data/statistics/people-population-community/population/population-estimates>

Figure 31: Full-Time Employment by Region



Source: *State of the Island Economic Report 2017*¹⁹³

Table 27: Vancouver Island/Coast Employment Percent (2013 to 2017)

	2013		2014		2015		2016		2017	
	Employment	Unemployment Rate (%)	Employment	Unemployment Rate (%)	Employment	Unemployment Rate (%)	Employment	Unemployment Rate (%)	Employment	Unemployment Rate (%)
Vancouver Island/Coast (an Economic Region in the Province of British Columbia) All Industries (NAICS -- North American Industrial Classification System)	362.2	6.3	352.0	6.1	57.3	6.3	366.5	5.8	386.6	5.0
Goods-Producing Sector	62.0	7.6	61.9	7.6	62.5	7.5	65.2	7.0	70.5	6.1
Agriculture	4.5	-	3.8	-	2.2	-	3.7	-	3.8	-
Forestry, Fishing, Mining, Oil and Gas	3.8	-	9.4	-	9.0	-	7.7	-	9.9	-
Utilities	-	-	1.7	-	1.5	-	-	-	1.6	-
Construction	32.1	8.3	29.5	8.7	33.3	7.2	35.0	6.9	36.0	7.2
Manufacturing	15.7	-	17.6	-	16.4	-	17.9	-	19.2	-
Durables	9.9	-	9.4	-	9.5	-	10.9	-	11.3	-
Non-durables	5.8	-	8.2	-	6.9	-	7.0	-	7.9	-

¹⁹³ <https://viea.ca/wp-content/uploads/2017/11/2017-VIEA-Economic-Report-WEB.pdf>

	2013		2014		2015		2016		2017	
	Employment	Unemployment Rate (%)	Employment	Unemployment Rate (%)	Employment	Unemployment Rate (%)	Employment	Unemployment Rate (%)	Employment	Unemployment Rate (%)
Service-Producing Sector	300.2	3.3	290.1	3.1	294.8	3.6	301.3	3.2	316.1	2.8
Trade	55.6	4.0	54.0	3.9	52.9	4.0	52.8	4.2	56.0	3.9
Transportation and Warehousing	16.4	-	14.7	-	17.0	-	15.8	-	15.8	-
Finance, Insurance, Real Estate and Leasing	15.4	-	15.9	-	17.3	-	17.0	-	18.3	-
Professional, Scientific and Technical Services	25.6	-	28.4	-	26.8	-	29.4	-	28.1	-
Business, Building and Other Support Services	17.8	-	11.3	-	12.1	-	15.8	-	15.8	-
Educational Services	28.4	-	26.4	-	27.2	-	25.9	-	28.0	-
Health Care and Social Assistance	52.8	-	54.1	-	58.0	-	55.2	-	59.4	-
Information, Culture and Recreation	15.0	-	15.2	-	14.9	-	15.7	-	15.9	-
Accommodation and Food Services	32.6	6.3	29.8	4.8	28.1	6.6	28.7	5.9	31.2	4.9
Other Services	16.5	-	16.7	-	16.4	-	15.8	-	19.2	-
Public Administration	24.3	-	3.5	-	24.0	-	29.1	-	28.5	-
Primary	13.2	-	13.2	-	11.2	-	11.4	-	13.8	-
Secondary	47.7	7.6	47.0	8.0	49.7	6.4	52.9	6.2	55.2	5.5
Tertiary	301.3	3.4	291.8	3.1	296.3	3.7	302.2	3.3	317.7	2.8

Source: Stats Canada, *Employment by Industry, Annual, Provinces and Economic Regions*¹⁹⁴

7.4 The Importance of BC Ferries to Coastal Communities

The importance of BC Ferries' operations to the province's coastal communities is marked by several factors, such as the movement of people, the transportation of goods, the prevalence along with reliance on tourism, job creation, and real estate development. This section discusses some of these factors in detail.

PROVIDING EVERYDAY ACCESS

As mentioned, BC Ferries has 25 routes from the mainland of British Columbia to the coastal communities, such as Vancouver Island. As part of this assessment, MNP researched the importance of BC Ferries providing everyday access for passengers and vehicles to the coastal communities. In fiscal 2017, a little over 21 million passengers used the ferry service in addition to carrying 9.4 million automobile equivalents¹⁹⁵. With many of the coastal communities using BC Ferries as a commuter service, the concept of "connection" is essential, whether it takes the form of passengers transiting to their areas of work or residence, moving goods, or providing access for tourists.

ENABLING THE MOVEMENT OF GOODS TO LOCAL COMMUNITIES

In addition to the steady movement of goods using transports and other smaller trucks, BC Ferries commenced drop trailer services in October 2009. This enables commercial customers to drop off their

¹⁹⁴ <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410009201&pickMembers%5B0%5D=1.73>

¹⁹⁵ The term "automobile equivalents" is BC Ferries standard reference to vehicles.

semi-trailers full of goods at one of the BC Ferries terminals and to pick them up on the other side of the route. This service contrasts with the live trailer service where truckers drive directly onto vessels. Advantages for shippers using the drop trailer service include the cost savings associated with eliminating the need to have truck drivers travel on vessels, and the efficiencies gained from scheduling deliveries and other related aspects of supply chain management. BC Ferries has three storage terminals at Route 1 and 3 (see Figure 1) and provides this service only to the major routes¹⁹⁶.

Seaspan is now BC Ferries' only competitor in the drop trailer market. In 2011, Seaspan acquired the other major competitor in the market, Van Isle Barge Services Ltd. ("VIBS"). Seaspan provides freight-only services to Vancouver Island on a year-round basis. With its acquisition of VIBS, Seaspan expanded its capabilities with three articulated tugs and barges that are designed for the ocean carriage of roll-on/roll-off traffic, including semi-trailers between terminals on the Fraser River in Surrey and Duke Point in Nanaimo.

The Pacific Coast geographic area is very diverse and includes many inlets and islands. Coastal communities located across this complex shoreline rely on domestic tug and barge operations in addition to the drop trailer service. Freight carried within this sector includes general cargo for community re-supply, wood products, gravel and stones, construction materials, and coal.¹⁹⁷

The efficiency of goods moving within BC is critical to the province's economy. The connectivity in networks and the resulting links between cities and communities ensures that goods and services can travel cost-effectively.¹⁹⁸

Short sea shipping is defined as the movement of cargo by water over relatively short distances. For the region, this activity includes both domestic and trans-border (US) traffic. Short sea shipping continues to be a vital segment of maritime commerce in British Columbia. In the Lower Mainland, short sea shipping accounted for almost 35.2 million tonnes of cargo in 2016 (i.e., 29 million tonnes of domestic traffic and 6.2 million tonnes of US traffic).¹⁹⁹ For comparison purposes, that is roughly equal to the Port of Montreal's freight record achieved for the same year. Short sea shipping accounts for 26 percent of the Port of Vancouver's total traffic.

There are two main methods for loading and unloading cargo, namely point-to-point operations and regularly scheduled, predominantly roll-on-roll-off ferry services. Point-to-point service uses tugs and barges to move bulk raw materials (e.g., logs and aggregates) between coastal mills and quarries and the Lower Mainland, primarily on the Fraser River. Manufactured goods (e.g., lumber, veneer pulp, and paper) also use short sea shipping. Roll-on-roll-off vessels and barges specialize in carrying wheeled vehicles (e.g., automobiles, rail cars, etc.) which are loaded and unloaded via a ramp. Regularly scheduled service by roll-on-roll-off ferry operations is provided by BC Ferries and Seaspan Ferries.

Figure 16 on the following page provides a snapshot of the short sea traffic for Metro Vancouver, further highlighting the importance of this type of shipping in domestic trade.

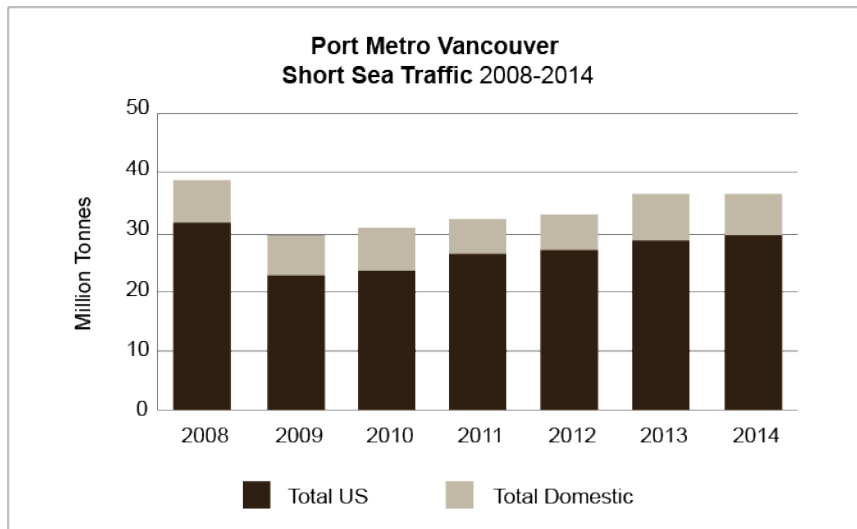
¹⁹⁶ Metro Vancouver with mid and southern Vancouver Island and one regulated route connecting Horseshoe Bay and Langdale

¹⁹⁷ https://www.tc.gc.ca/media/documents/policy/comprehensive_report_2016.pdf

¹⁹⁸ http://www.sauder.ubc.ca/Faculty/Research_Centres/Centre_for_Transportation_Studies/aculty

¹⁹⁹ <http://www.wavepointconsulting.ca/wp-content/uploads/2017/05/BCSN-Jun17-Pg32-33.pdf>

Figure 32: Short Sea Traffic of Metro Vancouver (2008 to 2014)²⁰⁰



As noted earlier, the biggest competitor for BC Ferries in the space of drop trailer operations is Seaspan. The organization provides marine-related services to the Pacific Northwest. The company has three shipyards, an intermodal ferry business, and a tug and barge transportation company, which provides services to both domestic and international markets. In 2017, Seaspan commented that the company was moving more than 500 trailers per day and up to 20,000 automobiles per year. Furthermore, Seaspan has increased its operations in the Lower Mainland and on Vancouver Island. The company has seen annual growth between 2 percent to 2.5 percent in its drop trailer business, and they opened a new \$44 million ferry freight terminal at Duke Point in Nanaimo.²⁰¹ The drop trailer traffic of BC Ferries, by comparison, increased 5.6 percent in 2017.²⁰²

Drop trailer services are a viable alternative for domestic goods to travel across coastal communities and have seen an increase in usage overall in the sector. BC Ferries' drop trailer services, while currently having limited market share, have demonstrated almost double the growth of its competitor and will continue to be an important source of transporting goods for the coastal economies. As the population of the coastal economies continues to grow and tourism flourishes, the drop trailer service provided by BC Ferries is going to become even more essential.

THE TOURISM INDUSTRY IN BC AND THE ROLE OF BC FERRIES

Tourism has always been a key driver of British Columbia's economic growth. In 2013, tourism employed more than 123,900 people, with Vancouver, the Coast and Mountains along with Vancouver Island, and the Thompson Okanagan regions providing for nearly 90 percent of all such employment in the province. Since 2003, tourism employment in British Columbia has grown 17.6 percent and tourism wages and salaries have increased by more than 34.4 percent (\$4.5 billion in 2013).²⁰³ As of 2016, the tourism industry in British Columbia employed 133,100 people²⁰⁴. Specifically, the coastal regions and Vancouver have seen steady growth in the total number of people hired in the tourism sector from 2011 to 2015. While Vancouver Island has not been consistently growing in tourism employment, it still employs nearly 20,000 people. Taken together, these results are indicative of how tourism and recreation contribute to

²⁰⁰ http://www.metrovancouver.org/services/regional-planning/PlanningPublications/Short_Sea_Shipping_Facts_in_Focus.pdf

²⁰¹ <https://canadiansailings.ca/seaspan-ferries-drop-trailer-business-thriving-between-b-c-s-lower-mainland-and-vancouver-island/>

²⁰² BC Ferries Annual Statement 2017

²⁰³ Gaining the Edge: 2015-2018. British Columbia's Tourism Strategy

²⁰⁴ <https://www.destinationbc.ca/getattachment/Research/Industry-Performance/Value-of-Tourism/Value-of-Tourism-in-British-x>

economic stability.²⁰⁵ The following table illustrates the performance of the tourism sector in British Columbia from 2011 to 2015.

Table 28: BC's Tourism Sector Performance (2011 to 2015)

BC Tourism Sector	2011	2012	2013	2014	2015
Revenue (\$ million)	13,178	13,428	13,978	14,871	15,663
Percentage Change	1.0%	1.9%	4.1%	6.4%	5.3%
GDP (\$ million)	6,722	7,066	7,355	7,778	8,301
Percentage Change	1.0%	5.1%	4.1%	5.7%	6.7%
Real GDP (\$2007 million)	6,473	6,631	6,791	7,046	7,442
Percentage Change	0.4%	2.4%	2.4%	3.8%	5.6%
Implicit Price Index (2007 = 100)	103.8	106.6	108.3	110.4	111.5
Percentage Change	0.6%	2.7%	1.6%	1.9%	1.0%
Employment ('000)	119.6	120.1	123.9	126.2	127.7
Percentage Change	– 0.2%	0.4%	3.2%	1.9%	1.2%
Wages and Salaries (\$ million)	3,856	3,936	4,126	4,326	4,499
Percentage Change	0.3%	2.1%	4.8%	4.8%	4.0%
Consumption Taxes (\$ million)	1,389	1,402	1,156	1,126	1,171
Percentage Change	18.7%	0.9%	– 17.5%	– 2.7%	4.1%

Source: Value of Tourism Trends 2005 – 2015 (please refer to footnote 17)

The level along with changes in tourism employment by specific region in British Columbia are summarized in Table 20 on the following page. For example, on Vancouver Island, employment grew from 19,200 in 2011 to 20,600 in 2015, an increase of 7.3 percent over that period.

²⁰⁵ http://www.bucksuzuki.org/images/uploads/The_State_of_Coastal_Communities_in_British_Columbia_2017.pdf

Table 29: Tourism Employment in BC, by Region (2011 to 2015)

Employment by Tourism Region	2011	2012	2013	2014	2015
Vancouver, Coast and Mountains	75,900	77,300	77,000	79,600	80,700
Percentage Change		1.8%	– 0.4%	3.4%	1.4%
Vancouver Island	19,200	17,900	21,300	19,700	20,600
Percentage Change		– 6.8%	19.0%	– 7.5%	4.6%
Thompson Okanagan	13,100	13,500	12,800	14,600	14,200
Percentage Change		3.1%	– 5.2%	14.1%	– 2.7%
Northern BC	5,300	5,200	6,000	6,300	6,500
Percentage Change		– 1.9%	15.4%	5.0%	3.2%
BC Rockies	4,400	4,500	4,800	4,100	4,000
Percentage Change		2.3%	6.7%	– 14.6%	– 2.4%
Cariboo Chilcotin Coast	1,700	1,700	2,000	1,900	1,900
Percentage Change		0.0%	17.6%	– 5.0%	0.0%
Total	119,600	120,100	123,900	126,200	127,700
Percentage Change		0.4%	3.2%	1.9%	1.2%

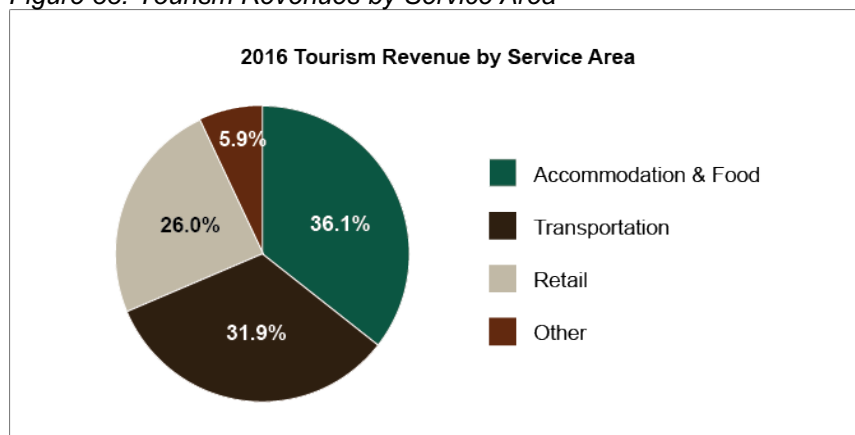
Source Value of Tourism Trends from 2005 - 2015²⁰⁶

In 2016, the tourism industry generated \$17 billion of revenue in British Columbia, which was nearly an 8 percent increase over the previous year. As the following figure shows, the service area of tourism that generated the highest revenue was accommodation and food. Also, there were a total of over 19,000 tourism-related businesses operating in British Columbia, an increase of 1.2 percent from 2015.²⁰⁷ Tourism revenue by service area in 2016 is provided in the following chart.

²⁰⁶ [https://www.destinationbc.ca/getattachment/Research/Industry-Performance/Value-of-Tourism/Value-of-Tourism-in-British-Columbia-\(2015\)/Value-of-Tourism_2015_FINAL.pdf.aspx](https://www.destinationbc.ca/getattachment/Research/Industry-Performance/Value-of-Tourism/Value-of-Tourism-in-British-Columbia-(2015)/Value-of-Tourism_2015_FINAL.pdf.aspx)

²⁰⁷ <http://www.tiabc.ca/advocacy-policy-development/bctourismatters/tourism-by-the-numbers/>

Figure 33: Tourism Revenues by Service Area



Source: Value of Tourism in 2016²⁰⁸

An analysis of BC Ferries' ridership over the last six years shows an increase of nearly one million passengers between 2012 and 2017 (as summarized in the following table). According to the latest customer survey results available (2016), 32 percent of surveyed riders indicated vacation or visiting as their main reason for travel. This helps illustrate how BC Ferries plays a key role in transporting tourists, both local and international, to the coastal communities.

Table 30: Passenger and Vehicle Ridership for BC Ferries (2012 to 2017)

Year	2012	2013	2014	2015	2016	2017
Passengers carried (people)	20,169,977	19,919,098	19,696,710	19,796,022	20,689,087	21,034,756
Vehicles carried (Automobile equivalents or AEQ)	8,861,795	8,769,217	8,675,549	8,735,828	9,152,873	9,437,585

Source: BC Ferries Annual Reports

7.5 BC Ferries' Local Employment Benefits

BC Ferries currently employs 3,291²⁰⁹ people from the coastal communities which includes the North and Central Coast. Auxiliary jobs, including indirect and induced employment, are also created in the coastal communities through BC Ferries' current operations. Indirect jobs are created in companies or roles that service BC Ferries, and induced jobs are created by the local day-to-day spending (e.g., food, housing, entertainment) of BC Ferries and its suppliers' staff. Added to this are the downstream benefits of jobs in terms of government revenues and expenditures.

Quantifying the indirect and induced jobs is subject to many economic variables, and MNP has not done a detailed, customized analysis to account for the variables specific to the ferry industry and coastal economies. To provide for a high-level estimate of the indirect and induced job creation, an assumed multiplier of 1.5 can be used.²¹⁰ Applying this multiplier leads to a total estimate of annual jobs of 4,937 in the coastal economies, making it one of the top employers in some communities. This also assumes that

²⁰⁸ [https://www.destinationbc.ca/getattachment/Research/Industry-Performance/Value-of-Tourism/Value-of-Tourism-in-British-Columbia-A-Snapsho-\(2\)/Value-of-Tourism-2016-Snapshot_FINAL.pdf.aspx](https://www.destinationbc.ca/getattachment/Research/Industry-Performance/Value-of-Tourism/Value-of-Tourism-in-British-Columbia-A-Snapsho-(2)/Value-of-Tourism-2016-Snapshot_FINAL.pdf.aspx)

²⁰⁹ BC Ferries Operational Review Presentation, 2018

²¹⁰ https://www.unbc.ca/assets/community_development_institute/extracting_the_value_draft_1.pdf

for every ten additional BC Ferries direct jobs in coastal communities, at least 5 other indirect and induced jobs could be created.

7.6 Real Estate Development in the Coastal Communities

BC Ferries indicated in their 2018 operational plan that they plan on spending \$1.2 billion on new vessel replacements and \$0.6 billion on terminals over nine years.²¹¹ As ridership continues to increase, it will foster a demand for tourism-related infrastructure like hotels, shops, and restaurants. This will, in turn, lead to more real estate development.

Real estate development has the potential to positively impact the coastal economy in two main ways: by higher appraisal of real estate, and from opportunities for municipalities to generate additional revenue through taxes (i.e., an increase in the tax-base and property values, not the tax rate itself). Additionally, populations have been steadily increasing on the coastal communities. For example, the population of Nanaimo has gone from 150,460 in 2013 to 160,942 in 2017 which drives new community developments in terms of home construction.

7.7 Summary of Findings

There are two principal areas of conclusion on the economic importance of BC Ferries to the coastal economies of the province.

The information collected suggests that BC Ferries' ridership facilitates both the growth and state of economic development in the coastal communities. BC Ferries' ridership increased from 20.17 million in 2012 to 21.03 million in 2017, a compounded annual growth rate of 0.85 percent over that period. Also, vehicles carried (referred to by BC Ferries as "automobile equivalents") rose from approximately 8.87 million in 2012 to 9.44 million in 2017, a compounded annual growth of 1.29 percent. In the first six months of 2017, passenger volumes and vehicle traffic on BC Ferries were up 0.4 percent and 0.9 percent respectively, compared with the same period in 2016. Passenger volumes at regional airports were up 5.2 percent. While passenger traffic has increased, the year-over-year rates of growth are below those in 2015 and 2016.

BC Ferries is also a job creator, employing 3,291 people directly from the coastal communities. As BC Ferries' 2017 annual report illustrates, the organization spent close to \$350 million on wages and salaries, representing 48 percent of the total operating expenses. Furthermore, the company's operations create auxiliary jobs, both for the coastal communities and mainland, from activities such as ferry repairs. Total employment created by BC Ferries in coastal communities is estimated at a high level to be almost 5,000 including direct, indirect and induced jobs. Investments by BC Ferries in terminals and new vessels will undoubtedly have a positive impact on employment along with spending and encourage increases in tourism to further bolster coastal communities.

²¹¹ BC Ferries Business Plan Year Ending March 31, 2018

8. TRENDS IN RIDERSHIP, FARES AND OPERATING COSTS

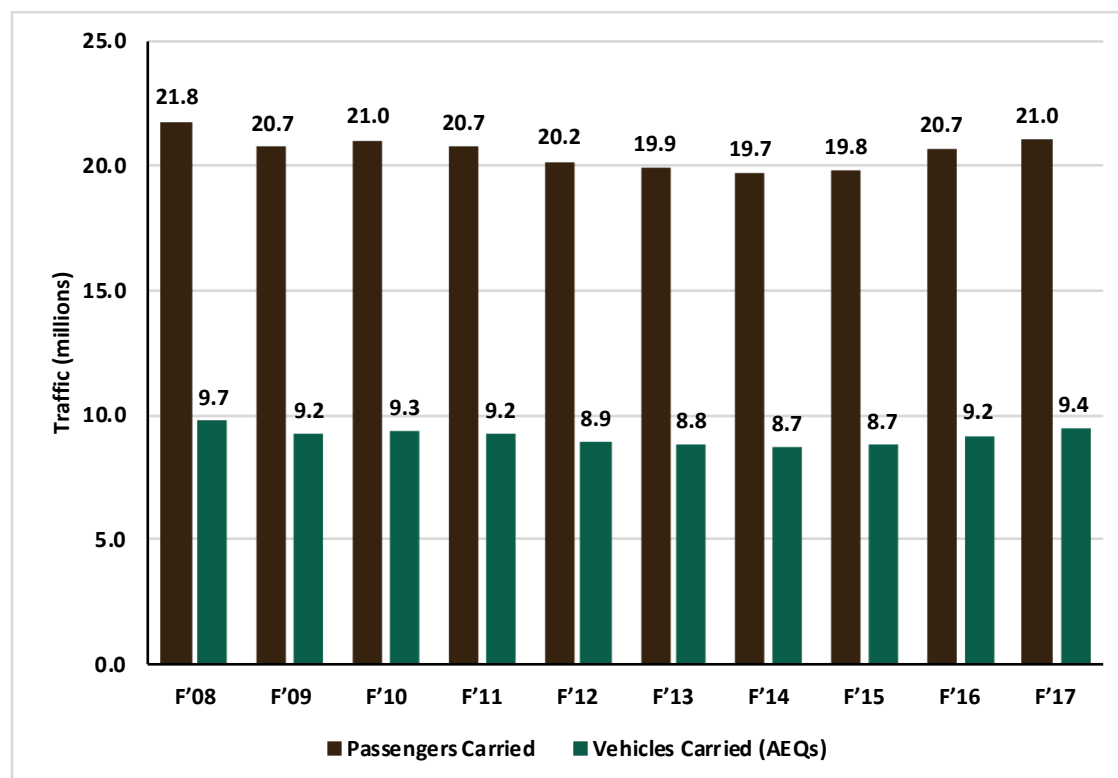
8.1 Setting the Context for the Trends Review

MNP reviewed the specific trends in ridership and earnings as well as operating costs over the last ten years for BC Ferries. The intent of this analysis is to identify key insights that can be helpful for future considerations with BC Ferries' operations and to help inform the Provincial government on strategic directions.

8.2 Ridership Trends

The annual ridership on BC Ferries across all routes is compared against numerous factors throughout this report. To set the backdrop, Figure 18 presents the trend in ridership as a standalone over the last ten years.

Figure 34: Annual Ridership Volumes

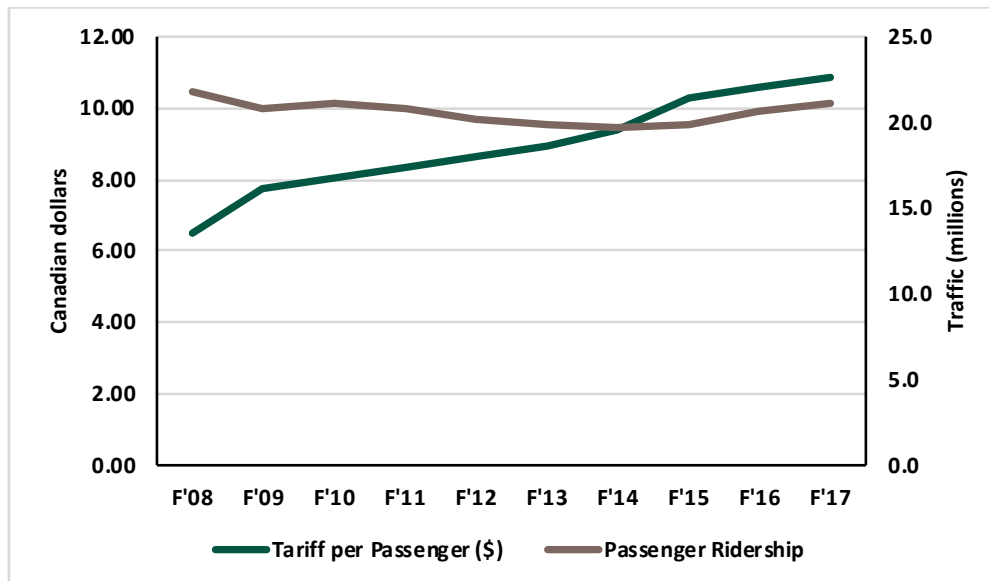


As seen in Figure 18, the ridership on BC Ferries has yet to reach the same level as experienced in fiscal 2008. Passenger ridership declined with a compound annual growth rate, or CAGR, of -1.53 percent from fiscal 2008 through to fiscal 2012. Following this, from fiscal 2013 through to 2017, passenger traffic saw an average annual increase (CAGR) of 1.10 percent. Vehicle traffic closely mirrored these trends.

8.3 Trends in Fares

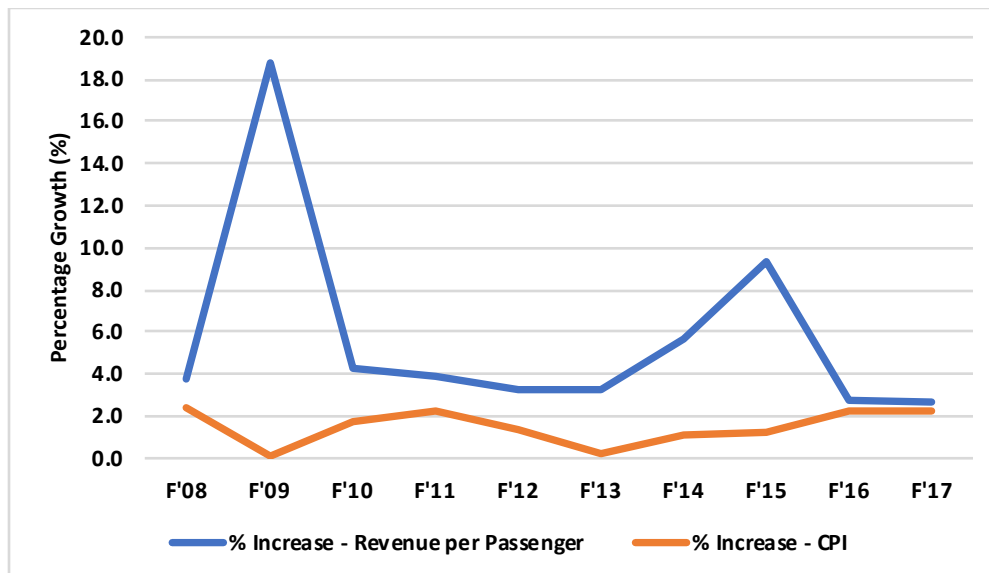
Although controlled by the Commission, the growth in fares over the last ten years has not been linear. This fluctuation warrants a comparison between the average tariff per passenger and annual ridership levels, as provided in Figure 19 on the following page.

Figure 35: Trends in Revenue per Passenger Versus Passenger Ridership



To get a better sense of the relationship between the trends shown in Figure 19, a statistic known as a correlation coefficient was calculated. This correlation coefficient, which considers the changes in both revenue per passenger and in ridership, is -0.61. A value of -0.61 implies a moderate, negative relationship between increases in fares and passenger ridership volumes (i.e., as fares increase, there will tend to be a moderate decrease in ridership, and vice versa, over time). As seen below, a similar comparison can be made with per passenger fare revenue and the Consumer Price Index, or CPI.²¹²

Figure 36: Trends in Fare Revenue per Passenger Versus CPI



In general, the per passenger fare revenue has grown, on average, 3.4 percent more than the CPI each year. Even after removing the outliers of fiscal 2009 and 2015, the average difference is still 2 percent.

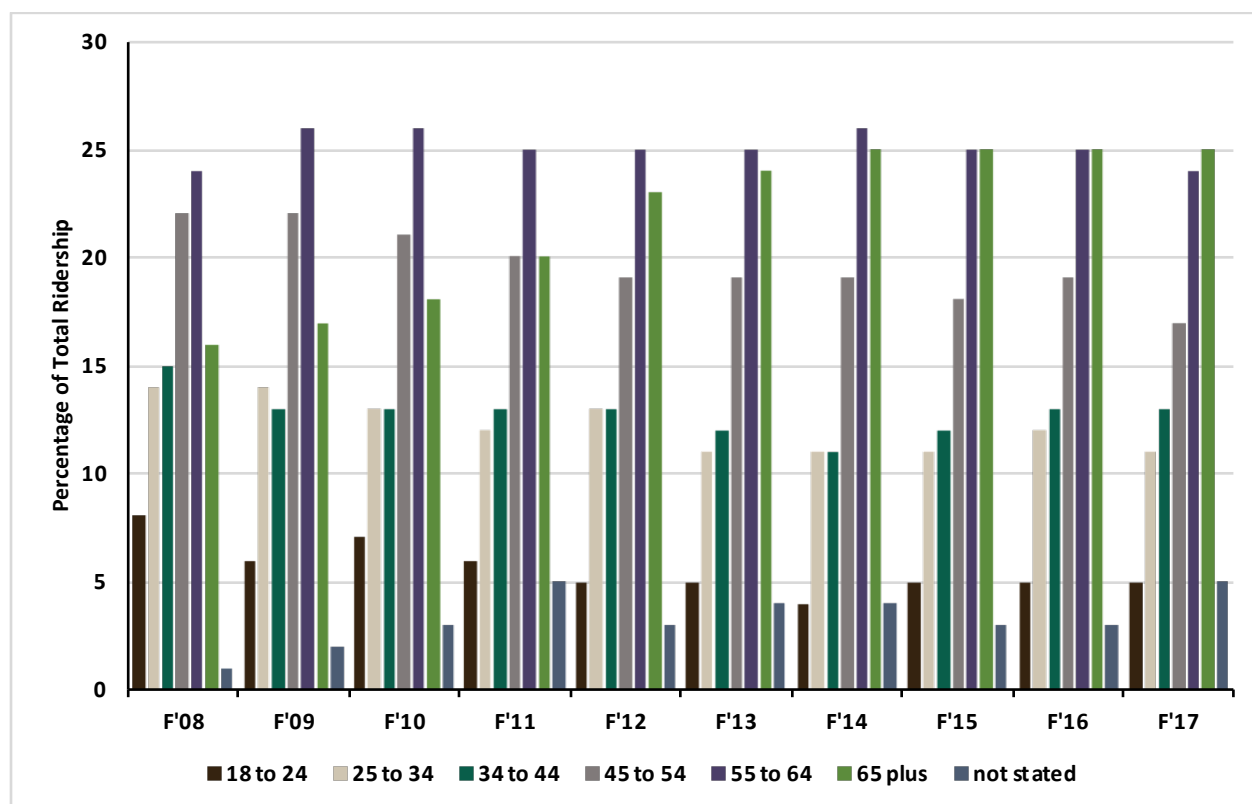
²¹² The CPI represents a weighted average of prices for a defined set of consumer goods and services.

From this, it can be concluded that fares have become steadily more expensive each year. However, ridership has not continued a declining trend over this ten-year period. This suggests that some groups of those using the coastal ferry system may be less responsive to change in prices, daily commuters for instance, while others, like tourists, may ride less often due to higher fares.

AGE DEMOGRAPHICS OF RIDERS

There has been a shift in recent years toward more senior citizen riders. In fiscal 2008, those aged '65 plus' accounted for 16 percent of the ridership population. By fiscal 2017, this demographic increased to represent 25 percent of the ridership population. The '55 to 64' age group was the only one to maintain its proportion of the total ridership at 24 percent, while all other groups saw steady declines. The figure below compares the demographic percentages over 2008 – 2017.

Figure 37: Ridership Age Demographics

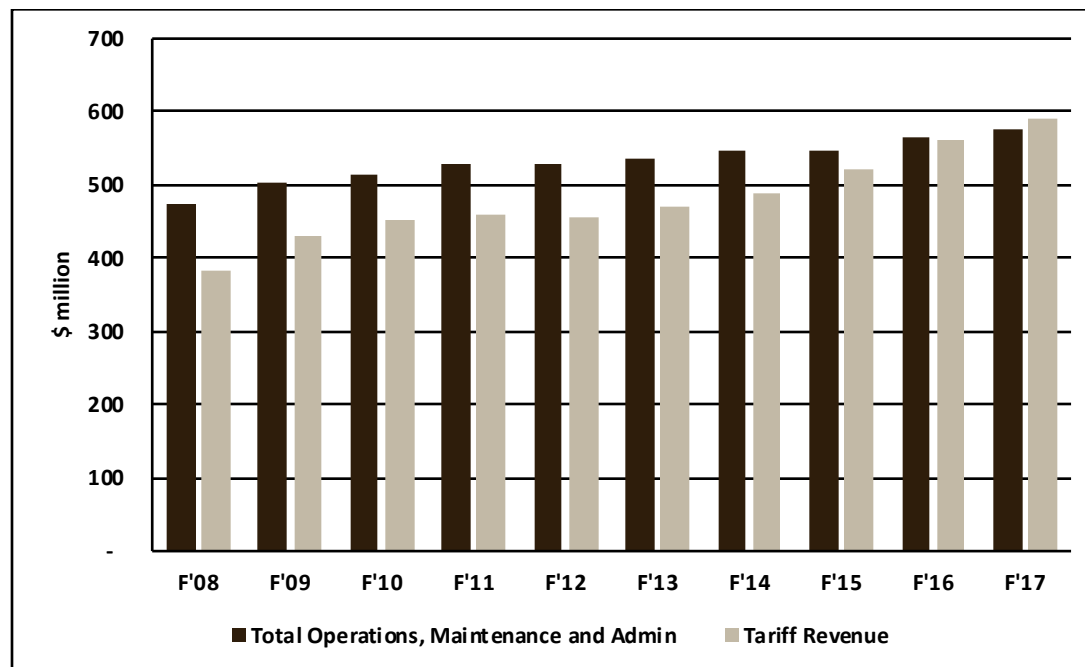


Most of this proportional shift in demographics occurs between fiscal years 2010 and 2014. During this period overall passenger ridership dropped (i.e., by a CAGR of -1.31 percent), services were reduced, and fares increased. However, the fares for seniors were free over Monday to Thursday until 2014, at which point they were increased to 50 percent of the regular fares. This confirms the earlier conclusion that certain riders can be price sensitive. Overall, the loss of youth and middle-aged riders has been somewhat offset by seniors who are still provided with greater incentives to use the coastal ferry system.

FINANCIAL TRENDS AND FAREBOX RECOVERIES

In considering any strategies for minimizing the growth of fare prices as well as the use of discounts and similar incentives to attract more passengers, an analysis is required of operating costs. Figure 22 offers a comparison of tariff revenues to operating costs (i.e., total operations, maintenance and administration as represented on the annual financial statements).

Figure 38: Operating Costs Versus Tariff Revenues



Between fiscal 2013 and 2017, the ratio of tariff revenue to operating costs has increased from 87 percent to 102 percent. During that same period, net earnings grew from \$15.2 million to \$87.9 million. For comparison purposes, a report from PWC on the efficiency of BC Ferries stated, “A farebox recovery of 80 percent is considered good for subsidized routes”²¹³. Also, according to a recent review conducted in 2016, Auckland Transport’s ferry service farebox recovery target is 80 percent²¹⁴.

The surplus tariff revenue and growing profitability of BC Ferries over a period when ridership has been getting higher suggests that the organization has financial leeway. Put another way, BC Ferries has an opportunity to utilize surplus fares and earnings to provide additional incentives or discounts to further grow ridership.

8.4 Tourism in British Columbia and Ridership

MNP carried out an analysis of ridership in comparison to some of the trends in tourism. This analysis is based on research conducted by MNP as well as ridership demographic data as collected through BC Ferries customer satisfaction survey. As noted earlier, over fiscal 2013 through to fiscal 2017, the ridership has grown with a CAGR of 1.10 percent. During the same period, both hotel occupancy rates

²¹³ Refer to: <http://www.bcferrycommission.ca/wp-content/uploads/2011/04/Performance-Review-of-the-Efficiency-of-BC-Ferries-March-2015.pdf>

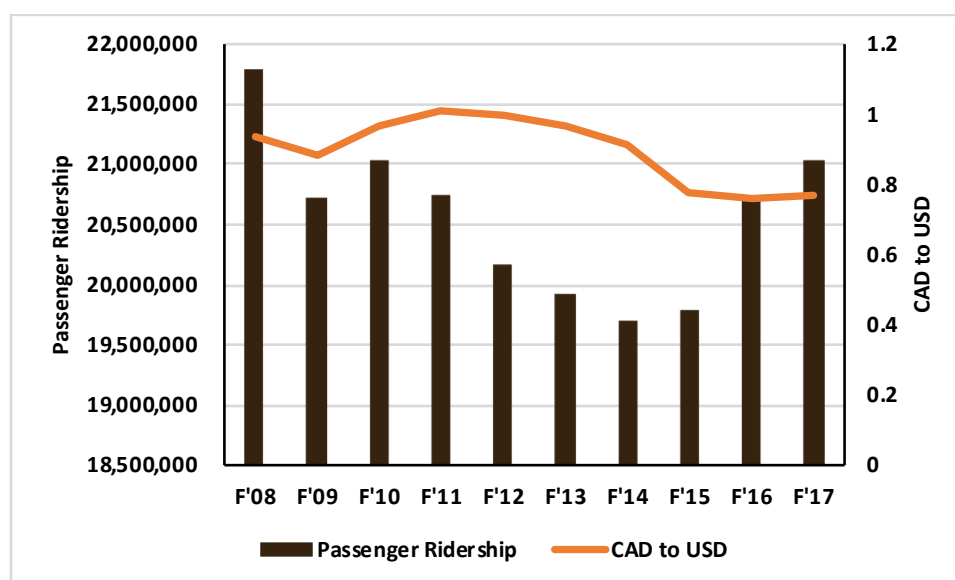
²¹⁴ Refer to: <https://at.govt.nz/media/1642718/item-117-public-transport-annual-fares-review-2016final.pdf>

(CAGR of 2.88 percent) and employment in food and beverage service related occupations (CAGR of 3.23 percent) increased. This suggests that tourism and passenger ridership volumes are positively related. Adding further support is that in fiscal 2016, 32 percent of the surveyed ridership stated vacations, getaways, and recreation as reasons for travel, an increase since 2012 (28 percent of surveyed ridership). Also, around 21 percent of all surveyed customers reside outside of Vancouver Island, the Gulf Islands, and the Lower Mainland (i.e., 18 percent are outside of BC).

THE EFFECTS OF A CANADIAN DOLLAR

The foreign exchange rate does, in general, have an impact on overall ridership with the coastal ferry system. Figure 23 provides a summary of trends in ridership with the CAD to USD exchange rates over the last ten years.

Figure 39: Trends in Ridership Versus the Canadian and US Dollar Exchange Rates



As can be expected from this chart, there is a moderate, negative correlation between ridership and the value of the Canadian dollar in comparison to the US dollar.

8.5 Administrative Costs

MNP conducted an analysis of the administrative costs for BC Ferries. Administrative costs are defined by BC Ferries as:

“the cost of salaries, benefits, and other expenses incurred in connection with the general administration of the company and which are not directly incurred for a specific ‘operations’ or ‘maintenance’ function. They include support services such as accounts payable, payroll, accounting, internal audit, treasury, and corporate human resources and as well as costs for general technology services and application management, telecommunications, BC Ferry Commission fees, audit and legal fees, marketing, and public relations”.

The analysis of BC Ferries administrative costs over the last five years is presented in Table 22 on the following page.

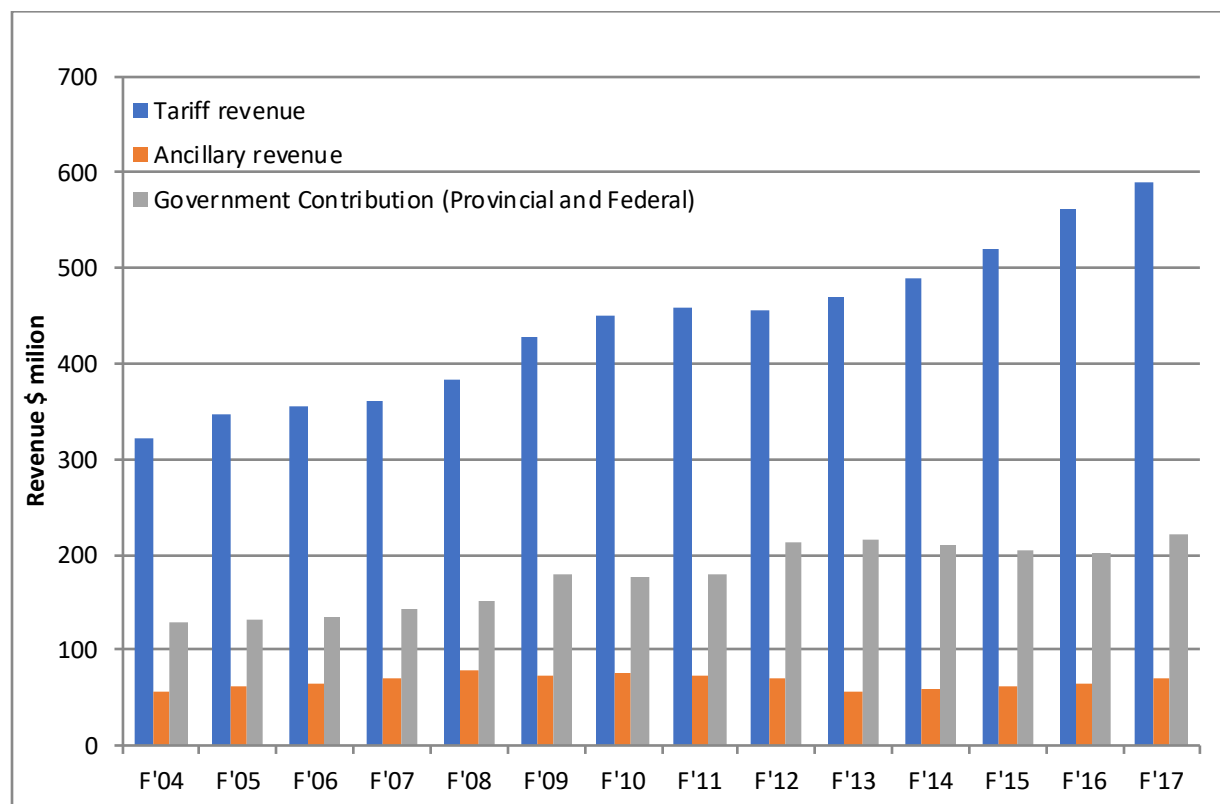
Table 31: Annual Analysis of Administrative Costs at BC Ferries

Time Period	Administrative Costs	Observations
Annual Statement 2016-2017	\$35.8 million (year over year increase of 3.74%)	The total administrative costs in fiscal 2017 were \$35.8 million, compared to \$34.5 million in the prior year. The \$1.3 million increase is reportedly the result of higher computer software licencing costs, training supplies and advertising costs.
Annual Statement 2015-2016	\$34.5 million (year over year increase of 7.78%)	The total administrative costs in fiscal 2016 were \$34.5 million, compared to \$32.0 million in the prior year. The \$2.5 million increase in administration costs is apparently due to higher wages and benefits with the filling of positions vacant in the prior year, computer software licencing costs, contracted services, and \$0.6 million of Input Tax Credits, or ITCs, recoverable for the period of April 2003 through to October 2014 (i.e., reflecting the October 2014 Tax Court of Canada judgement recorded in fiscal 2015).
Annual Statement 2014-2015	\$32.0 million (year over year increase of 1.2%)	The total administrative costs in fiscal 2015 were \$32.0 million, compared to \$31.6 million in the prior year. The \$0.4 million increase in administration costs is mainly due to a \$1.4 million increase in computer software fees, licenses, training supplies and contracted services. This was offset by a \$0.4 million decrease in wages and benefits and \$0.6 million worth of Input Tax Credits, or ITCs, recoverable for the period of April 2003 through to October 2014 (i.e., reflecting the October 2014 Tax Court of Canada judgement).
Annual Statement 2013-2014	\$31.6 million (year over year increase of 6.7%)	The total administrative costs in fiscal 2014 were \$31.6 million, compared to \$29.6 million in the prior year. The \$2.0 million increase in administration costs is reported the result of a \$1.3 million increase in computer software fees, licenses and leases coupled with a \$0.6 million increase in wages and benefits.
Annual Statement 2012-2013	\$29.6 million (year over year decrease of 5.1%)	The total administrative costs in fiscal 2013 were \$29.6 million, compared to \$31.2 million in the prior year. The \$1.6 million decrease in administration expenses is mainly due to lower wages and benefits, including a drop in executive compensation given a reduced number of senior executive positions and a lower average compensation per executive position.

8.6 Government Contributions

MNP reviewed the contribution of the Provincial government to BC Ferries through the Provincial and Federal subsidy program as well as with ferry transportation fees. On April 1, 2003, BC Ferries entered into an agreement with the Province to provide ferry services on specified routes that would not be commercially viable and to administer certain social policy initiatives on behalf of the government. Additionally, the Federal government provides financial assistance to fulfill the obligation of offering ferry services to coastal British Columbia. The chart on the following page identifies the sources of, and trends in, revenue of BC Ferries over the past ten years.

Figure 40: BC Ferries Revenue by Source



As seen in Figure 24, the government contribution per passenger has increased at a CAGR of 4.65 percent from fiscal 2008 through to 2017. This represents a funding per capita (BC population) increase of 3.07 percent over the same period. The operating expenses for BC Ferries (i.e., total operating, maintenance and administration) on a per passenger basis has only grown at a CAGR of 2.64 percent in this timeframe.

APPENDIX A

Glossary of Terms

ACE	Automated Customer Experience
AEQ	Automobile Equivalents
CAGR	The compound annual growth rate (CAGR) is a useful measure of growth over multiple time periods. It can be thought of as the growth rate that gets you from the initial investment value to the ending investment value if you assume that there has been compounding over time.
Capital Markets	A capital market is a financial market in which long-term debt (over a year) or equity-backed securities are bought and sold.
CEFTA	Canadian-European Free Trade Agreement
CIO	Chief Information Officer
Correlation Coefficient	A correlation coefficient is a statistical measure of the degree to which changes to the value of one variable predict change to the value of another. In positively correlated variables, the value increases or decreases in tandem. In negatively correlated variables, the value of one increases as the value of the other decreases.
Cost of Service Regulation	The “cost of service”—that reflects the total amount that must be collected in rates for the utility to recover its costs and earn a reasonable return.
COTS	Commercial off the Shelf
CRM	Customer Relationship Management
CPI	Consumer Price Index
CSD	Commercial Services Division
CSSR	Customer Service Sales Representative
CST	Customer Satisfaction Tracking
Deemed Capital	Target capital structure mandated by a regulator.
Direct Impact	The Direct Economic Impact is a measure of the total amount of additional expenditure, job creation etc. within a defined geographical area, which can be directly attributed to the economic activity.
DSCR	The Debt-Service Coverage Ratio (DSCR) is a measure of the cash flow available to pay current debt obligations. DSCR = Net Operating Income / Total Debt Service
DWT	Dead Weight Tonnage - the amount of weight a ship can carry.
EBITDA	Earnings before interest, tax, depreciation and amortization (EBITDA) is a measure of a company's operating performance.
Equity	A stock or any other security representing an ownership interest. On a company's balance sheet, the amount of the funds contributed by the owners or shareholders plus the retained earnings (or losses).
Farebox Recovery	The farebox recovery ratio of a passenger transportation system is the fraction of operating expenses which are met by the fares paid by passengers. It is computed by dividing the system's total fare revenue by its total operating expenses.
GDP	Gross Domestic Product - Refers to the additional value of a good or service over the cost of inputs used to produce it from the previous stage of production. Thus, GDP is equal to the unduplicated value of goods and services produced.
Indirect impacts	Indirect impacts are the changes in sales, income or jobs in sectors within the region that supply goods and services to a particular sector,

	for instance the tourism sector.
Induced impacts	Induced impacts are the increased sales within the region from household spending of the income earned in a particular sector, for instance increased household spending from income earned in the tourism sector.
IoT	Internet of Things
IVR	Interactive Voice Response
KfW	The KfW, formerly KfW Bankengruppe, is a German government-owned development bank, based in Frankfurt. Its name originally comes from Kreditanstalt für Wiederaufbau.
Multipliers	Multipliers capture the size of the secondary effects, usually as a ratio of total effects to direct effects. Total effects are direct effects plus the secondary (indirect plus induced) effects. A sales multiplier of 2.0, for example, means that for every dollar received directly from a visitor, another dollar in sales is created within the region through indirect or induced effects.
NAICS	North American Industry Classification System
NSPS	National Shipbuilding Procurement Strategy
NSS	National Shipbuilding Strategy
OOSV	Offshore Oceanographic Science Vessel
PCI-DSS	Payment Card Industry Data Security Standard
PMBOK	Project Management Body of Knowledge
PMO	Project Management Office
POS	Point of Sale
ROE	Return on equity (ROE) is a measure of profitability that calculates how many dollars of profit a company generates with each dollar of shareholders' equity. The formula for ROE is: $ROE = \text{Net Income} / \text{Shareholders' Equity}$. ROE is sometimes called "return on net worth."
TPASS	Employee Travel Pass
VCS	Vehicle Classification System

9.5 | ACKNOWLEDGEMENTS

Thanks are due to a number of people who assisted with the preparation of this report:

- Staff of the Transportation Policy and Programs Division of the Ministry of Transportation and Infrastructure provided valuable background information and assistance. Special thanks to Assistant Deputy Minister Deborah Bowman for her leadership and support, as well as Kirk Handrahan, Lynda Petruzelli and Kitty Kwok of the Marine Branch, Lori Gilmour, Tammy Donison-McKay, Heather Weir, and copy editor Sara Haskett.
- The Executive Committee and staff of BC Ferries were welcoming and helpful. Particular thanks to Corporate Secretary Cynthia Lukaitis, Jason Eamer-Goult and Sheila Brown of the Corporate Affairs Department for arranging Executive presentations and assisting with numerous queries.
- Yuri Fulmer, Chair of the BC Ferry Authority and Donald Hayes, Chair of British Columbia Ferry Services Inc. both arranged for meetings with their respective Boards and made time to provide their own perspectives.
- Former BC Ferries Commissioner Gord Macatee and current Commissioner Sheldon Stoilen provided helpful context and advice about the regulatory process and the coastal ferry system in general.
- Chris Rathbone and Lindsay Coburn of the Public Sector Employers' Council Secretariat, Jeff Rafuse, Christine Little, and Angelo Cocco of the Ministry of Jobs, Trade and Technology, Doug Foster of the Ministry of Finance, and Maria D'Archangelo of the Ministry of the Attorney General all assisted with various aspects of the report.
- Consulting firms Ken Cameron Inc., Ecopath Planning, and MNP LLP delivered useful reports within tight timelines.
- Maria Lobanova of M Grafika is responsible for the graphic design and layout of the final report.
- Finally, Ministry of Transportation and Infrastructure Policy Analyst Anna Vorobyova provided valuable help with the research and drafting of the final report. Her diligence and research skills are much appreciated.



