MADE-IN-BC FERRIES

THE ECONOMIC BENEFITS OF LOCAL SHIP PROCUREMENT

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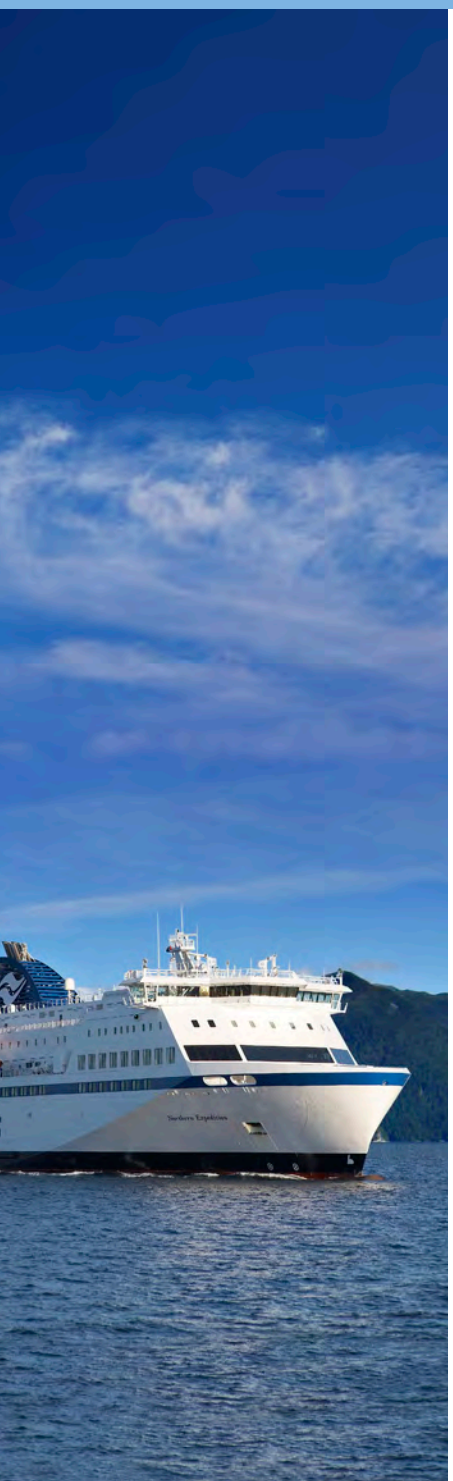
Columbia INSTITUTE

PART 1

Introduction



Institutional procurement is a powerful, and often underutilized, economic development strategy that can positively impact "value added" economic sectors. How and where procurement dollars are spent can have important economic effects.[1]

Beyond the service sector, British Columbia's economy relies significantly on natural resources, with 7.5 per cent of provincial GDP and 3.1 per cent of provincial employment in those sectors. BC's value added sector – primary processing beyond hewing wood and drawing water – represents an additional 4.1 per cent of GDP and 3.6 per cent of employment. While 2012 manufacturing GDP was 7.2 per cent of total GDP and manufacturing employment was 7.7 per cent of total employment, BC Statistics tables show overall manufacturing trending downward 12 per cent since 2007.[2]

In July 2013, BC Ferries announced it will put three new intermediate class ferries into service by 2016/2017. The corporation is seeking a fixed price design/build contract for the three new ferries and hopes to use liquefied natural gas to fuel the new vessels.[3]

BC Ferries has an opportunity to contribute to BC's economic development through its procurement choices. As an institution providing a public service, with public dollars, it can be argued that BC Ferries has an additional responsibility to consider the economic development impact of its procurement spending.

Analysis by Stokes Economic Consulting, using the Centre for Spatial Economics provincial economic model, shows the economic advantage of building these ferries in BC: for every 100 jobs created in a BC shipyard or repair industry,

1 Tony Pringle and Robert Duffy, *Buying Local: Purchasing Tools for Forward Thinking Institutions*, Columbia Institute, 2013.

2 GDP 2012 (BC Stats, BC GDP by NAICS code), Employment 2012 (BC Stats – BC Employment by Industry). Natural resources includes agriculture, forestry, fishing, mining, and oil & gas; primary value added sector includes food manufacturing, beverage and tobacco manufacturing, wood product manufacturing, paper manufacturing, non-metallic mineral product manufacturing, and metal manufacturing.

3 BC Ferries news release, July 23, 2013 (13-018), *BC Ferries Commissioner Approves Major Capital Expenditure for Three Intermediate Class Vessels,* bcferries.com/bcferries/faces/attachments?id=815054

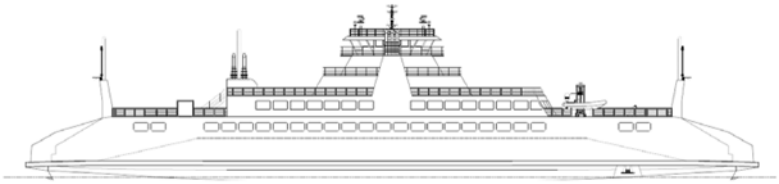
there would be an additional 135 jobs created in the province. The average increase in employment over three years would be 1,063 workers annually. Notably, building the ferries in BC would also increase government tax revenues by $66 million federally and $36 million provincially.

One of the first questions that come to many British Columbians on hearing about the new ferries is: "*Will they build the new ferries overseas again or will they build them here in BC?*" That's because when BC Ferries last decided to procure new vessels – in 2004 – BC Ferry Services Inc. contracted with Flensburger Schiffbau-Gesellschaft to build three new Coastal class ("Super C") ferries in Flensburg, Germany rather than at a BC shipyard.

It was a controversial decision. The mayors of North Vancouver, West Vancouver, and the District of North Vancouver issued a joint plea to BC Ferries to consider local shipbuilders for construction of the ferries. According to the mayors of the day, "The North Vancouver shipyards are considerable economic generators within the local communities, contributing in excess of $1 million in property taxes to the local municipal revenue base. It is calculated that for every $1 of capital investment there is a genuine economic spin-off of $3 to the British Columbia economy."[4] Some 400 shipyard workers turned up at BC Ferries headquarters in Victoria to protest the loss of jobs. The government MLA for North Vancouver–Seymour Dan Jarvis joined the call for the three ferries to be built in BC. "To me it doesn't make sense and would be blatantly stupid" he wrote in a July 2004 letter to the North Shore News. "There are no valid reasons to indicate that BC shipyards are not capable."

OVERVIEW

> For every 100 jobs created in a BC shipyard or repair industry, there would be an additional 135 jobs created in the province.



> The average increase in employment over three years would be 1,063 workers annually.

> Notably, building the ferries in BC would also increase government tax revenue by $66 million federally and $36 million provincially.

ILLUSTRATION: CONCEPT DESIGN FROM BC FERRIES ("subject to change under a design/build request for proposal") FROM BCFERRIES.COM

PHOTOS ABOVE AND OPPOSITE COURTESY BC FERRIES

4 Quoted in David Schreck, "More Heat on Offshore Ferry Purchase," Strategic Thoughts (website), August 4, 2004, http://www.strategicthoughts.com/record2004/ferrycommission.html

> Coastal class and northern ferries construction and procurement

As noted above, when BC Ferries last procured new vessels in 2004, it contracted with Flensburger Schiffbau-Gesellschaft to build three new Coastal class ("Super C") ferries in Germany rather than at a BC shipyard. BC Ferries also contracted with FSG to build the Northern Expedition to replace the Queen of the North and purchased an existing Greek vessel (the M.V. Sonia, now the Northern Adventure) to replace the Queen of Prince Rupert. Five new vessels, none built in BC.

The approved contract price for the three Coastal class ferries was $325 million, but the overall budget (including project management costs, financing, and taxes) was $542 million.[5] When all three Coastal ferries came into service in 2008, the company said they were completed at $26 million under budget,[6] but this was partly due to an unanticipated rise in the value of the Canadian dollar versus the euro, to the advantage of BC Ferries. The cost of the construction contract for the Northern Expedition was $133 million,[7] with a total budget of $200 million. The total budget for the Northern Adventure was $103 million[8] ($50.6 million to purchase and $18 million to retrofit, plus financing and project management costs). In total, BC Ferries spent about a half a billion dollars for construction and purchase contracts and more than $800 million in total to build and purchase the Coastal and Northern class vessels overseas – amounts which, if spent in BC instead, could have contributed greatly to job creation and economic development here at home.

BC's three new Coastal class ferries were built in Germany. In total, BC purchased five new vessels, none built in BC.

ARRIVAL OF THE "SUPER C" COASTAL CELEBRATION IN 2008, PHOTO COURTESY KAM ABBOTT/WIKIMEDIA COMMONS

In 2006, federal taxpayers also bore public costs associated with non-BC procurement when the Canadian government agreed to waive a 25 per cent federal import duty for the Northern Adventure. This tax break cost the federal government $13 million.[9] This decision negated the purpose of the import duty, which is to encourage the construction of ships in Canada rather than abroad.

The federal government compounded this revenue loss in 2010, when it agreed to a total remission of duties on all four ferries that were built offshore. In total, decisions to remit import duties on ships purchased by BC ferries cost federal taxpayers $119.4 million.[10] It is largely based on this federal expenditure of $119.4 million that BC Ferries publicized construction of the four ferries as "$150 million under budget."[11] This history of remitting import duties likely acts as a precedent and further incentive for BC Ferries to build vessels outside of Canada.

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5 BC Ferries news release, "BC Ferries Board Approves $325 million in Contracts," September 17, 2004 (04-07), bcferries.com/news_archive/files/04-071-super_c_vessels.pdf

6 BC Ferry Services Inc. and BC Ferry Authority, "2008/09 Annual Reports," bcferries.com/files/AboutBCF/AR/BCF_Annual_Report_2008-2009.pdf

7 BC Ferries news release, "BC Ferries Signs Contract to Build New Northern Vessel," August 18, 2006 (06-049), bcferries.com/news_archive/files/06-049contracttobuildnewnorthernvessel.pdf

8 BC Ferries news release, "BC Ferries Releases Third Quarter Results," February 27, 2007 (07-018), bcferries.com/news_archive/files/07-018bcferriesreleasesthirdqresults.pdf

9 "Ottawa lets BC Ferries off hook for $13 million," *Globe and Mail*, June 22, 2007, theglobeandmail.com/news/national/ottawa-lets-bc-ferries-off-hook-for-13-million/article1087696/

10 BC Ferries news release, "BC Ferries Granted $119.4 Million Duty Remission," October 1, 2010 (10-052), bcferries.com/bcferries/faces/attachments?id=312664

11 Between 2005 and 2011, BC Ferries received an additional $23.7 million in federal funding support for ship construction and repair (including $6.31 million for the Island Sky) through the Structured Financing Facility of Industry Canada. This program is no longer funded and being wound down. http://www.ic.gc.ca/eic/site/sim-cnmi.nsf/eng/uv00033.html

PART 2

Economic benefits to British Columbia of ferry construction in BC shipyards

What are the social and economic benefits to British Columbia of ferry construction in BC shipyards? Economic modeling by Stokes Economic Consulting shows they are significant. Consultation with experts in the field of ferry design and construction, coupled with economic analysis of large vessel construction costs in BC shipyards, and calculation of the provincial economic impact of construction of the three new intermediate class vessels, demonstrates the tremendous impact of building these new ships in BC. Building new ferries in BC shipyards would also contribute to the successful implementation of new federal and provincial industrial development strategies for revival of the shipbuilding and repair industry on Canada's West Coast.

Economic modeling for this report involved feeding information obtained from an analysis of ferry construction input costs supplied by industry experts through a provincial multi-sector, dynamic equilibrium economic model supplied by the Centre for Spatial Economics.[12] The results showed the following direct, indirect, and induced impacts of BC shipyard construction of the three ferries:[13]

- A cumulative increase in provincial real gross domestic product (GDP) of $378.5 million (2013 dollars);
- A $200 million increase in consumer expenditure;
- An average annual increase in employment of 1,063 workers over three years;
- A $249.7 million increase in personal disposable income;
- An increase in government tax revenue of $66 million at the federal level and $36 million at the provincial level; and
- For every 100 jobs created in the BC shipyard and repair industry, an additional 135 jobs are created in the province.

Building new ferries in BC shipyards would also contribute to the successful implementation of new federal and provincial industrial development strategies for revival of the shipbuilding and repair industry on Canada's West Coast.

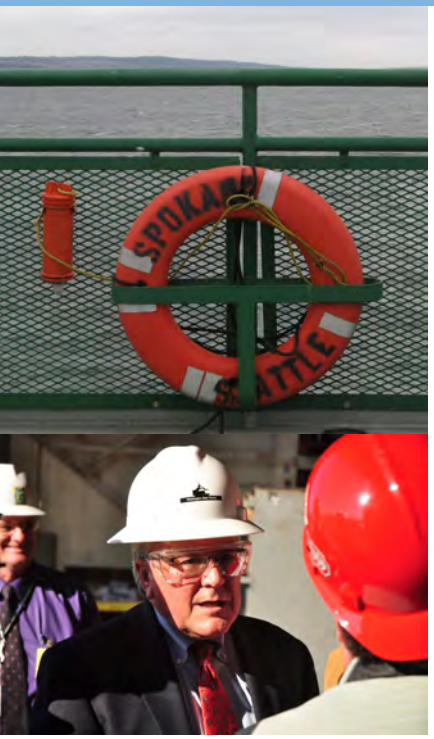
PHOTO COURTESY DAVID ALLEN BARKER VIA FLICKR

12 Modeling is based on the assumptions that: (i) the total value of the three new ferries to be procured by BC Ferries in 2014 is $260 million; and (ii) that these vessels will be uniformly produced from the start of 2015 to the end of 2017.

13 For more detail, see the appended report of Stokes Economic Consulting, *The Economic Impacts of Ferry Construction at the Vancouver Shipyards,* November 2013.

PART 3

Washington State ferries



The local economic advantage of building in-house is well understood by our neighbours to the south. PHOTO COURTESY WSDOT

The local economic advantage of building in-house is well understood by our neighbours to the south. It is unusual, both in the Pacific coast region and in Canada as a whole, for BC to export shipbuilding jobs to offshore jurisdictions. Shipbuilding procurement is managed in nearby Washington State (and by the Canadian federal government) in quite a different manner.

Washington State Ferries (the Washington State Department of Transportation Ferries Division) is the largest ferry system in North America, transporting more than 23 million passengers annually.[14] Since 1997, Washington State Ferries has procured eight new vessels and all of them were built in Washington State. This is because of a series of state laws and regulations known as "Build in Washington" that require that all new ferries be built in Washington shipyards.[15] The stated purpose of these laws is to "employ people, help develop a capable workforce, and create a positive economic benefit."

The "Build in Washington" laws for state ferries are consistent with general practice in the United States since the passage in the 1920s of the so-called Jones Act (formally the *Merchant Marine Act of 1920*), which covers "cabotage" (i.e. coastal shipping) and requires that all goods transported by water between U.S. ports be carried on U.S. flag ships, constructed in the United States, owned by U.S. citizens, and crewed by U.S. citizens and/or U.S. permanent residents.[16] The Jones Act was most recently updated in 2006 and has been supported strongly by U.S. presidents as varied as Ronald Reagan and Barrack Obama. Although criticized by some as protectionist, Jones Act requirements have been a popular cornerstone of U.S. economic and security policy for many decades. It is not going away anytime soon.

14 Washington State Department of Transportation Ferries Division, *Final Long Range Plan*, June 30, 2009, www.wsdot.wa.gov/NR/rdonlyres/41834A0B-DABC-48FA-9700-DF0298AA65B4/58554/FinalLRPCompleteDocument1.pdf

15 Brian Sonntag, *Washington State Ferries: Vessel Construction Costs*, State Auditor's Office Performance Audit Report No. 100884, January 3, 2013, page 8, www.sao.wa.gov/auditreports/auditreportfiles/ar1008884.pdf. A summary of the laws can be found at page 71 in Appendix D of the report.

16 For further background on the Jones Act, see the website of the American Maritime Partnership, http://www.americanmaritimepartnership.com/jones_act.html

Under a series of state laws and regulations known as "Build in Washington," all new ferries built for Washington State's 23 million annual passengers must be built in Washington shipyards.

PHOTO COURTESY WSDOT

In January 2013, Washington State Auditor Brian Sonntag released a performance audit[17] that reviewed the cost of ferry construction in Washington and made recommendations for change. The state auditor found that the policy that new ferries must be built in Washington is more costly than permitting new ferries to be built out of state. He was not convinced the employment and economic benefits of requiring in-state construction outweighed the additional costs he identified.

Although critical of local procurement and apprenticeship requirements, the state auditor did an important analysis of the economic benefits of local ferry construction. The results are useful for consideration of the potential economic benefits of building new ferries in BC.

The auditor also examined requirements in the Washington State *Apprenticeship Act* (2007) stipulating that 15 per cent of all work on Department of Transportation public works projects worth more than $2 million, and other state agency public works projects worth more than $1 million, must be performed by workers enrolled in state-approved apprenticeship programs. This requirement means that to bid on a Washington State Ferries construction contract a shipyard must have a state approved program in place.

Using the input/output model of the Washington State Office of Financial Management, the state auditor estimated the impact of hypothetically spending $150 million to build two ferries over the fiscal years of 2013 and 2014. The auditor's report shows that doing so in Washington State would support an average of 322 jobs and $28 million in wages in the shipbuilding industry over each of the two fiscal years. The report further found that the total economic impact of such spending in all sectors of the state economy would support 1,335 jobs and $90 million in wages over each of the two fiscal years.[18]

The state auditor's criticism of "Build in Washington" and apprenticeship requirements is at least informed by an understanding of what those requirements mean for the state economy. In British Columbia, by contrast, there has been no such public evaluation of the economic implications of building new ships out of province. This Washington State example of how to evaluate policy options and inform public debate offers a "best practice" for British Columbia to consider.

17 Supra note 15, Washington State Auditor Brian Sonntag.

18 Supra note 15, Washington State Auditor Brian Sonntag.

PART 4

Canada's national shipbuilding procurement strategy

Like the U.S. and Washington State governments, the Government of Canada considers in its procurement decisions the economic benefits of shipbuilding and – in particular – supporting Canadian shipyards when Canadian tax dollars are invested in new ships. This is substantively reflected in the National Shipbuilding Procurement Strategy (NSPS) that was first announced in 2010.[19]

In brief, the NSPS will direct an investment of more than $38 billion in federal funds to Canadian shipyards for the construction of new ships required by the Navy and the Coast Guard.

For construction of large ships (valued at $36.6 billion), the federal government chose two Canadian shipyards in 2011 after an open competition and has designated them as the sources of future supply. Irving Shipbuilding in Halifax will build new combat vessels, including Arctic and offshore patrol ships and surface combatants, while Seaspan Marine Corporation's Vancouver Shipyards will build non-combat vessels, including a polar icebreaker, four science vessels, and two joint support ships.

Smaller ship construction (estimated at $2 billion) is to be awarded to Canadian shipyards other than Irving Shipbuilding and Vancouver Shipyards, after competitive processes. Further requests for proposals will be sought for an estimated $500–$600 million per year for ship repair, maintenance, and refit.

The federal government cites Canadian Association of Defence and Security Industries estimates that the decision to build these ships here in Canada will generate approximately 15,000 jobs and $2.4 billion in annual economic benefits over the next 30 years.[20]

19 Public Works and Government Services Canada, *Backgrounder on the National Shipbuilding Procurement Strategy (NSPS) – Year 2: A Status Update*, November 2013, www.tpsgc-pwgsc.gc.ca/app-acq/sam-mps/ddi-bkgr-10-eng.html

20 CADSI Marine Industries Working Group, *Sovereignty, Security and Prosperity: Government Ships – Designed, Built and Supported by Canadian Industry*, Canadian Association of Defence and Security Industries, May 2009, www.defenceandsecurity.ca/UserFiles/File/pubs/cadsi-mir.pdf

A key part of the NSPS is investment by Irving Shipbuilding and Vancouver Shipyards in significant upgrading of their shipyards, dubbed by the federal government as "the value proposition." In BC, Seaspan is investing more than $200 million in modernization of its North Vancouver and Victoria shipyards.[21] The modernization project will see four new fabrication buildings, a shipbuilding gantry, and a load-out pier in North Vancouver, as well as a new building in Victoria for commissioning and testing of new ships.

Seaspan projects that by 2015 the federal contracts and modernization project together will result in the addition of 1,000 new workers to its 2012 workforce of 2,400 employees.

Given that the federal government has decided to spend such significant public sums on new oceangoing vessels, it makes sense to ensure the economic benefits of that investment accrue to Canadian businesses and workers. The federal procurement program is not only ensuring thousands of new jobs for Canadian shipbuilders, but is spurring shipyards to modernize and upgrade their facilities.

For BC Ferries, the investment by Seaspan in upgraded facilities means that expanded and up to date shipyard facilities are more readily available here in British Columbia if a decision is made to construct new intermediate class ferries here at home.

The federal procurement program is not only ensuring thousands of new jobs for Canadian shipbuilders, but is spurring shipyards to modernize and upgrade their facilities.

PHOTO COURTESY CANADIAN COAST GUARD (TOP)TTCOPLEY VIA FLICKR (BOTTOM)

OPPOSITE PAGE: PHOTOS COURTESY MARKUS BRINKMANN / FLICKR

21 Seaspan news release, *Groundbreaking Ceremony Marks Start of $200 Million Modernization Project,* October 19, 2012, seaspan.com/docs/PressReleases/PRESS%20RELEASE%20-%20Groundbreaking%20Ceremony%20Marks%20Official%20Start%20of%20200M%20Shipyard%20Modernization%20Project.pdf

PART 5

Industrial and training strategies for BC shipbuilding

The renewal of a skilled shipbuilding and repair labour force is also integral to the BC government's new industrial strategy to rebuild a once burgeoning marine manufacturing sector in BC.

Over the past three or four years, both the federal government and the BC government have adopted new industrial development strategies aimed at renewal of the BC shipbuilding and repair industry and its skilled workforce. Construction of new BC Ferries vessels can be viewed as integral to the successful implementation of those strategies, to ensure both levels of government see returns on the significant public expenditures that are being made.

In June and July of 2011, Premier Christy Clark announced a pledge of $550,000 for a shipbuilding training program at Camosun College, the potential for $35 million in new provincial labour tax credits for training in the shipbuilding and repair industry over the 30 year life of federal government contracts for the NSPS, and a $5 million investment to support the productivity and long term viability of the broader marine sector in BC.

Commenting on the BC government's projected investment of $40 million in training and tax credits if BC shipyards succeeded in winning one of the federal shipbuilding contracts, then Minister of Jobs, Tourism and Innovation Pat Bell stated the BC government was investing in BC's human capital "...by supporting the creation of marine industry jobs for years to come."[22] BC's Shipbuilding and Ship Repair Industry Tax Credit program was formally established in May 2012.[23]

At the same time as the 2011 provincial government announcements, BC Ferries promised to spend $20 million to build BC's ship repair capacity, and then-CEO of BC Ferries David Hahn was quoted as saying: "A strong shipbuilding and repair sector in BC is important for us to receive competitive pricing as we maintain and upgrade our fleet in the future."[24]

22 BC Ministry of Jobs, Tourism and Innovation news release, "Seaspan Shipbuilding Bid Gets Boost to Land Jobs in BC," July 25, 2011, http://www2.news.gov.bc.ca/news_releases_2009-2013/2011JTI0097-000924.htm

23 BC Business webpage, "Shipbuilding and Ship Repair Industry Tax Credit," http://www2.gov.bc.ca/gov/topic.page?id=4F08637DC34349EFB0EEF540C6CEEAB9

24 Supra note 22, Ministry of Jobs, Tourism and Innovation news release.

PHOTO COURTESY PHOTO COURTESY WSDOT

Seaspan announced its $200 million shipyard modernization project in October 2012. At the time, Seaspan CEO Jonathan Whitworth said that:

> *When you don't build large, complex vessels in British Columbia for 30 years, a lot of that professional skilled labour has either passed on, retired, or no longer lives here. So for positions like engineers, project managers, naval architects, those jobs are currently unfilled here because we don't have Canadians capable of filling them.*[25]

The renewal of a skilled shipbuilding and repair labour force is also integral to the BC government's new industrial strategy to rebuild a once burgeoning marine manufacturing sector in BC. Following the October 2011 announcement that Seaspan had been awarded one of the two major NSPS contracts – and as part of the BC Jobs Plan – Premier Christy Clark created the BC Shipbuilding and Repair Workforce Table to bring together industry participants to capitalize on the NSPS contracts and several other major anticipated shipbuilding and repair projects in BC. The objective was to ensure that the shipbuilding and repair sector has the right numbers of workers, with the right skills, in the right places, and at the right time to enable expansion and competitiveness of the entire sector.[26] It seems likely that the anticipated major shipbuilding and repair projects for which this provincial workforce strategy was designed did include the anticipated construction of new vessels for BC Ferries.

As previously noted, the Washington State Apprenticeship Act (2007) stipulates that 15 percent of all work on Department of Transportation public works projects worth more than $2 million and other state agency projects worth more than $1 million, including the construction of ferries for Washington State Ferries, must be performed by workers enrolled in state-approved apprenticeship programs. If legislation of this nature were in place in British Columbia, based on the estimated 453 shipyard jobs per year that construction of the three new ferries would create in BC shipyards, 68 new apprenticeship training positions would be created for this projects.

25 Gordon Hamilton, "Seaspan launches $200M upgrade at North Vancouver shipyard," *Vancouver Sun*, October 19, 2012, vancouversun.com/Seaspan+launches+200M+upgrade+North+Vancouver+shipyard/7416610/story.html

26 BC Shipbuilding & Repair Workforce Table, *Towards 2020: A BC Shipbuilding & Repair Industry Workforce Strategy*, July 2012, rtobc.com/Assets/RTO+Assets/Towards+2020+BC+SHR+Idustry+Workforce+Strategy.pdf

PART 6

Making ferry construction procurement part of a long term economic strategy

Shipbuilding and metal fabrication jobs are the type of high-quality jobs a resource dependent province like BC could encourage in order to expand and diversify the province's economic base.

BC Ferries has reported that the three new intermediate class vessels, the Coastal class vessels, new Northern vessels, and the Island Sky (a $45.5 million, Vancouver Shipyards-built intermediate class vessel that began service in February 2009) are all part of a long term "New Build" program for ship replacement.[27] In 2011, BC Ferries Vice-President for Fleet Operations and Training Captain Jamie Marshall said that BC Ferries will need to replace 26 vessels over the next 15 years, with predicted expenditures of $2.5 billion or more for new vessels and terminals.[28]

Those are big dollar amounts and they represent a lot of potential construction. Such spending could make a very significant difference in building up a value-added manufacturing industry for British Columbia that sustains strong employment growth over decades. Shipbuilding and metal fabrication jobs are the type of high-quality jobs a resource dependent province like BC could encourage in order to expand and diversify the province's economic base.

If BC Ferries decides once again to build the new intermediate class vessels offshore, it is likely to the detriment of that long term vision. Building these vessels overseas may undermine the future ability of BC shipyards to bid on the 23 other vessels that Captain Marshall says will be put into service over the next 15 years, as the opportunity to develop and maintain specialized capacity for ferries may be lost.

As we are seeing with the Seaspan modernization program spurred by the federal contracts, major shipbuilding contracts from public agencies help shipyards to improve their technological and other capacities to prepare for additional opportunities.

As one example of the opportunities that could be lost, BC Ferries has said it hopes to fuel the three new intermediate class vessels with liquefied natural gas (LNG). Making this happen will likely require research and development into the specialized technology necessary to efficiently utilize this new fuel source. Benefits of this technological innovation could be accruing to BC shipyards

27 BC Ferries website, New Build Program, bcferries.com/about/newbuild/newbuildprogram.html

28 BC Ferries presentation to the Baltic and Maritime International Council (BIMCO), *BC Ferries Fleet Renewal Program and Related Environmental Policies: Captain Jamie Marshall*, June 6, 2011, p. 4, www.cosbc.ca/index.php?option=com_docman&task=doc_download&gid=157&Itemid=72

rather than shipyards out of province. This seems especially pertinent, given the emphasis the BC government has placed on LNG development.

A provincial government version of the National Shipbuilding Procurement Strategy would make sense for BC. A first step (commonly used in public sector procurement throughout the United States) could be to stipulate a local procurement preference percentage as part of procurement documents. Such local preference procurement does not mandate that projects must necessarily be procured locally, but does provide extra points and consideration for local bids.[29] Shipbuilding is specifically excluded from trade agreement thresholds currently being negotiated by the federal government in Comprehensive Economic Trade Agreement (CETA) discussions.[30]

As part of such a long term strategy, BC could pace the construction of new vessels in order to support the long term sustainability of the BC shipbuilding industry. One option would be to pursue a more gradual fleet renewal strategy that extends the service life of existing vessels in order to appropriately time new construction when capacity is best available in local shipyards.

The maintenance implications for BC shipyards and related supply chains would all be considerations of an alternative capital strategy for BC Ferries that takes into account the economic implications for the province of ferry procurement decisions. As well, local maintenance, retrofit and repair of vessels are likely to be more effective if vessels are constructed in BC.

However it is done, the BC government and BC Ferries have an opportunity to take active steps to ensure that investments made in ferry construction benefit BC businesses, BC workers, and the provincial economy.

One option would be to pursue a more gradual fleet renewal strategy that extends the service life of existing vessels in order to appropriately time new construction when capacity is best available in local shipyards.

PHOTO COURTESY WSDOT/FLICKR

29 For detail on state and municipal preference policies in the U.S., see *Local Purchasing Preferences,* Institute for Local Self-Reliance, December 1, 2008, http://www.ilsr.org/rule/local-purchasing-preferences/

30 Government of Canada, *Technical Summary of Final Negotiated Outcomes, Canada-European Union Comprehensive Economic and Trade Agreement*, October 2013, http://www.actionplan.gc.ca/sites/default/files/pdfs/ceta-technicalsummary.pdf

PART 7

Conclusion

Just as the federal government has done with National Defence and Coast Guard procurement, and just as is done by law in Washington State and across the U.S., the BC government and its entity BC Ferries can ensure British Columbians benefit from the good quality manufacturing jobs that come with the building of new ferries.

This report has shown that decisions about the procurement of three new intermediate class vessels by BC Ferries are vital not only for employment and economic opportunities today, but for the future of the BC shipbuilding industry.

The findings of the Centre for Spatial Economics show that a decision to build the three new ferries in BC would result in an average annual increase of more than 1,000 jobs over the three years of projected construction, a cumulative increase in provincial economic growth of $378.5 million, nearly $250 million increased personal disposable earning, and significant reductions in federal and provincial debts. For every 100 jobs created in the shipbuilding and repair industry, an additional 135 jobs will be created in the province.

These are significant benefits in building BC's ferries in BC. The province has identified shipbuilding as an important part of the BC Jobs Plan. Integrating that plan with concrete action on ferry construction offers significant economic development advantages for the province.

The provincial government has a role in relation to the policies and practices of the ferry corporation, and there is nothing in trade agreements stopping BC from including 'local preferences' in shipbuilding contracts. BC Ferries operates based on a binding 60 year service contract with the provincial government.The BC government provides a subsidy to BC Ferries that costs nearly $200 million per year and holds all the preferred shares of BC Ferries.

Just as the federal government has done with National Defence and Coast Guard procurement, and just as is done by law in Washington State and across the U.S., the BC government and its entity BC Ferries can ensure British Columbians benefit from the good quality manufacturing jobs that come with the building of new ferries.

Stokes
ECONOMIC CONSULTING INC.

The Economic Impacts of Ferry Boat Construction at the Vancouver Shipyards

Prepared for the Columbia Institute, November 2013

Introduction

The purpose of this study is to determine the economic impact that would result from British Columbia Ferry Services Inc. constructing three new ferries within British Columbia. The following results were produced using the Centre for Spatial Economics' provincial economic model, Statistics Canada's input/output tables and information provided by research consultants Blair Redlin and David Fairey.

Key Assumptions

- The total value of the ferries is $260 million, with two 145 vehicle ferries at a cost of $90 million each and one 125 vehicle ferry at $80 million
- Production of these vessels will be uniformly distributed from the start of 2015 to the end of 2017
- The BC shipbuilding industry already has the capacity to manufacturing the ferries – i.e. it does not require investment to improve facilities.
    - Although industry sources indicated that shipyard improvement investment would occur in the event of BC shipyards being awarded the contracts, the value was indeterminate at the time. Therefore, the findings of this analysis should be regarded as conservative.
- 30% of materials and supplies will be sourced externally (imported).
    - This percentage is based on consultations with Vancouver based industry experts.
- Given the total labour costs, average annual hours worked and average hourly labour cost, direct employment averages 453 persons per year

Methodology

The approach adopted to estimate the direct economic impact of constructing the three ferries within BC is to conduct two projections of the British Columbia economy and compare the results of these projections. The first projection, called the 'base case', is one in which no ferries are constructed. The second projection is the one in which the construction takes place. A comparison of the results of the latter projection against the base case projection for selected key economic indicators provides estimates of the impacts of the project on the provincial economy.

Statistics Canada's input/output tables were used to calculate the inputs of the C4SE Provincial Economic Model. Specifically, the "ship and boat building" vector from the 2007 detailed input-output table for Canada. The 2007 table was used because the provincial models have 2007 as their base year. The input/output tables allowed us to determine the ship building industry's demand for other industry goods and services. Using this information, the gross output by industry was calculated and used as inputs in the C4SE provincial model. Imports were calculated and inputted with respect to the 30% material and supplies import share assumption, with all imports occurring in the manufacturing industry. Direct employment was also used as an input and was calculated using total labour costs, average annual hours worked and average hourly labour cost.

Once the inputs were determined, the model was run to calculate the overall impact of constructing the ferries. The "Technical Appendix" section summarizes how the provincial models work and helps explain how these inputs influence the outcome.

Key Findings of Our Study

- The GDP impact of constructing the three ferries in BC from 2015 to 2017 is a total of $378.5 million*
- The results suggest that for every $1 spent on the ferries, an additional $0.50 is created for the economy (production multiplier of 1.5)
- The construction of the ferries will reduce federal government debt by $66 million and provincial government debt by $36 million

Table 1: **Economic Impacts of Ferry Construction** ***(2013 dollar millions unless otherwise stated)***	Average Annual Differences	Cumulative Differences
Real GDP	126.2	378.5*
Consumer Expenditure	66.7	200.0
Residential Investment	35.9	107.8
Business Non-Residential Investment	13.7	41.0
Employment (000's)	1.063	NA
Population (000's)	0.585	NA
Personal Disposable Income	83.2	249.7
Federal Budget Balance ($Millions)	22.0	66.0
Provincial Budget Balance ($Millions)	12.0	36.0

* The impacts on GDP are different in Table 1 and 2 because of different measurements – GDP at market prices in Table 1 and GDP at basic prices in Table 2. Market prices are larger because they include indirect taxes and subsidies while basic prices do not.

Table 2: Industry Impacts of Ferry Construction *(GDP at 2013 basic prices)*	Average Annual Differences	Cumulative differences
Total**	115.3	346*
Agriculture	0.3	0.8
Mining & Forestry	2.3	7.0
Manufacturing	44.2	132.6
Utilities	1.9	5.8
Construction	17.6	52.7
Wholesale & Retail Trade	11.8	35.4
Transportation & Warehousing	3.4	10.2
Finance, Insurance, & Real Estate	11.8	35.4
Professional, Scientific, & Management Services	8.7	26.2
Accommodation & Food Services	1.8	5.4
Other Services	5.4	16.2
Eduation, Health & Government Services	3.7	11.2

- Average annual employment will be higher by 1063 workers over the period. This suggests that for every 100 direct jobs, an additional 135 jobs will be created
- The manufacturing industry experiences the largest impact as it contains the shipbuilding industry and the majority of the material inputs come from other manufacturing industries
- Despite the assumption that the province already has the capability to build the ferries, the construction industry experiences the second largest impact. This is the result of residential investment increases and secondary industries increasing investment as a result of their increased output

Technical Appendix

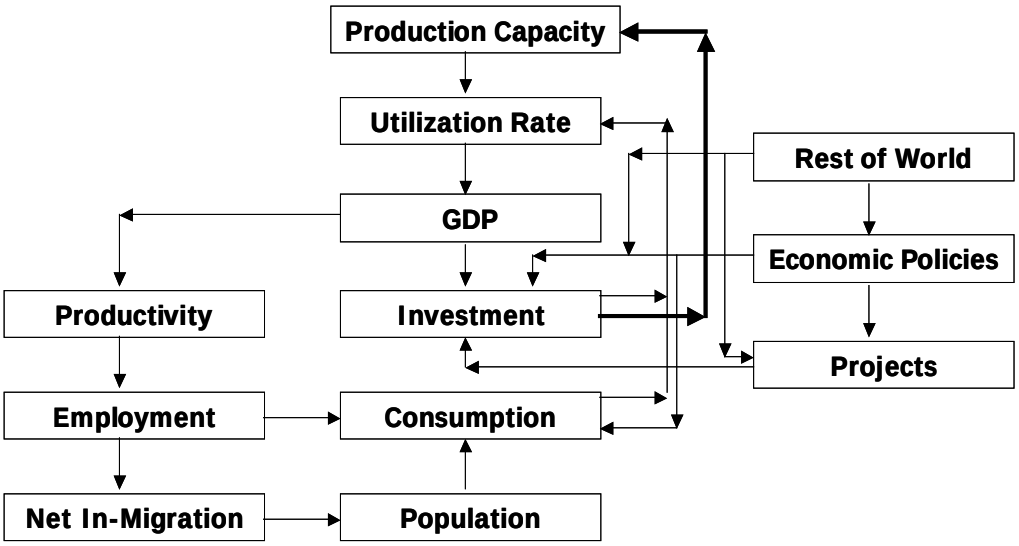
Stokes Economic Consulting maintains the C4SE multi-sector provincial economic models. The purpose of these models is to produce medium to long-term economic projections and conduct impact studies. The provincial models are specifically designed to incorporate information on major projects such as the construction of ferry boats at the Vancouver Shipyards. To include the projects, assumptions must be set for production output, direct employment and imports. It should be noted that the models are in 2007 base year prices. A base year must be chosen in order to adjust for inflation and determine the "real" growth of the economy.

The provincial models can be characterized as multi-sector (industry) dynamic general equilibrium models. They are KLEM models – capital (K), labour (L), energy (E), and materials (M) are combined to produce gross output in each industry sector. Materials are used in fixed proportion to output while substitution is allowed among capital, labour, and energy. Natural gas and electricity are energy inputs to production. Changes in the relative factor cost of capital, labour and energy bring about the substitution. The production function is Cobb-Douglas for each industry sector.

The main outside forces driving the economy are the influences of the rest of the world and economic policies. These two sets of influences shape the views of local decision makers including

the decision to undertake major projects. Real GDP growth, inflation, and interest rates in the rest of the world drive local economic growth through their influence on exports, local inflation, and the cost of credit. Economic policies such as government tax rates and expenditures also impact local growth.

The basic workings can be seen from the figure shown below.



Given the external forces and the production capacity of the various sectors in the economy, firms set capacity utilization rates based on expected sales thereby determining real output.

Once real output for each industry is determined, employment for all industries is set through the productivity of labour. Employment combined with wages, other income, and consumer prices then determines private consumption. Employment when compared with labour force then drives net in-migration, which in turn sets population growth.

Population growth combined with personal income then determines private consumption. Population also impacts government consumption, as a change in population leads to a change in the demand for government services. Both government consumption and investment are affected.

The increase in real output combined with changes in consumption then changes private investment decisions. The changes in consumption and investment decisions, in turn, lead to changes in capacity utilization rates and output. This type of cycle continues until the one-year solution of the model is obtained.

In the long term, the key determinants of changes in overall economic activity in the model are growth in fixed investment expenditures and productivity growth. The rate of productivity growth is determined by changes in technology and modifications to the way in which business is conducted. Productivity is an exogenous variable – is set outside of the model.

> About the authors and researchers

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Ernie Stokes is the Managing Partner of the Centre for Spatial Economics, with over 35 years of professional experience as an economist. He is highly regarded in the economics community for his expertise in model building and economic forecasting. During his career he held senior positions at Finance Canada and at the Conference Board of Canada. Prior to forming C4SE he held the position of Chief Economist at WEFA Canada. Ernie earned a PhD in economics from Queen's University at Kingston in 1979.

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