Seaspan Shipyards
Economic Impacts of Expanded Shipbuilding Operations in BC

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1. EXECUTIVE SUMMARY

The activities of Seaspan's shipbuilding and ship repair operations impact the BC economy through direct expenditures on goods and services, the employment of workers and the generation of tax revenues for local, provincial and federal governments. The impacts of Seaspan's current shipbuilding and ship repair operations are presented in the table below.

Total value added generated by current Seaspan shipbuilding and ship repair operations in BC is estimated to be $125.5 million. The shipbuilding and ship repair operations of Seaspan are also estimated to generate employment of 1,730 full-time equivalents (FTE). Seaspan's operations and its impacts through the economy also contribute $17.9 million annually in government revenues to the federal government and $11.8 million to the provincial and municipal governments.

Current Seaspan Shipbuilding and Repair Operations

Impact	Direct ($)	Indirect & Induced ($)	Total ($)
Output	95,416,531	75,289,988	170,706,519
GDP	76,634,598	48,859,550	125,494,148
Federal Taxes	13,324,367	4,533,840	17,858,207
Provincial Taxes	6,551,314	3,287,393	9,838,707
Municipal Taxes	1,197,555	799,888	1,997,442
Impact	**Direct (FTE)**	**Indirect & Induced (FTE)**	**Total (FTE)**
Employment	1,058	672	1,730

Should Seaspan be awarded the contract for the National Shipbuilding Procurement Strategy (NSPS), there will be a significant increase in its shipbuilding activity levels.[1] This increase will have a major impact on the economy in BC. The table below provides a summary of the estimated total average annual economic impacts of Seaspan's current operations, as well as the impacts of the anticipated future operations assuming Seaspan is a successful proponent for the implementation of the NSPS program.

Seaspan Impact with NSPS Contract

	Estimated Total Average Annual Impacts ($)			
Impact	2010	2013-2022	2023-2032	2033-2041
Output	170,706,519	373,645,035	744,768,526	498,985,359
GDP	125,494,148	283,219,795	693,655,333	380,669,943
Federal Taxes	17,858,207	28,366,715	70,516,962	34,880,017
Provincial Taxes	9,838,707	14,037,898	23,876,605	16,643,718
Municipal Taxes	1,997,442	2,623,660	4,157,177	3,009,951

	Estimated Total Average Annual Impacts (FTE)			
Impact	2010	2013-2022	2023-2032	2033-2041
Employment	1,730	3,683	8,465	4,888

[1] Data for the economic impact modelling were obtained directly from Seaspan representatives. Our work did not include evaluating the support for the data or the underlying assumptions. Accordingly, we do not express an opinion or any other form of assurance on the projections or assumptions. Estimates of economics impacts are derived from a combination of BC Stats and Statistics Canada's input/output models based on current and projected operational and capital spending of Seaspan shipyards.

The increase in Seaspan's operations would constitute a major economic stimulus for BC. The following comparison can be made between the economic impacts of Seaspan's future operations under the program and other activities in the province:

- The first two to three years of Seaspan Shipyard's future operations under the program would create roughly the same GDP impact as the construction attributable to the 2010 Olympic and Paralympic Games.[2]
- The first seven to nine years of Seaspan Shipyard's future operations under the program would be roughly equivalent to the total GDP impact of the 2010 Olympic and Paralympic Games.[3]
- Seaspan's projected annual contribution to GDP over the period from 2013 to 2022 would be about the same or higher than the GDP generated by the film and television industry in BC.[4]
- For the first ten years of the program, the provincial and federal annual tax contributions generated by Seaspan Shipyards would be roughly equivalent to the tax revenues generated from the annual construction of 250 to 300 new homes in BC. During this period, employment generated by Seaspan Shipyard's operations would be roughly equivalent to the employment generated by the annual construction of 600 to 700 new homes in the province.[5]
- For the 2023-2032 period, the provincial and federal annual tax contributions generated by the shipbuilding and repair operations of Seaspan would be roughly equivalent to the tax revenues generated from the annual construction of 500 to 700 new homes in BC. The employment generated would be roughly equivalent to the employment created by the annual construction of 1,400 to 1,500 new homes.[6]
- During the last phase of the program, Seaspan Shipyards' annual contribution to federal and provincial government revenues would be roughly equivalent to the tax revenue that would be generated from the annual construction of 300 to 400 new homes in BC. The employment created by Seaspan's operations in the final phase of the program would be comparable to the employment generated by the annual construction of 800 to 900 new homes.[7]

[2] Report 6: Economic Impact of the 2010 Olympic and Paralympic Winter Games on British Columbia and Canada: 2010, PricewaterhouseCoopers
[3] Ibid.
[4] Opportunity BC 2020: Creative Sector, PricewaterhouseCoopers
[5] Economic and Fiscal Impacts of Residential Construction, British Columbia, Will Dunning Inc.
[6] Ibid.
[7] Ibid.

2. BACKGROUND AND STUDY PURPOSE

2.1 BACKGROUND

In June 2010, the Government of Canada announced the National Shipbuilding Procurement Strategy (NSPS), a long-term plan that will support the Canadian marine industry, revitalize Canadian shipyards and build ships for the Navy and Coast Guard. The Strategy is intended to bring predictability to federal ship procurement and eliminate cycles of boom and bust, thereby providing benefits to the entire marine industry. The Strategy is expected to create jobs and stimulate the Canadian economy.

The Strategy is comprised of two programs: combat ships and non-combat ships. The Federal government will select and establish long-term strategic relationships with two Canadian shipyards to execute the two programs. The selection of the two shipyards is to be done in a competitive, fair and transparent manner with a fairness monitor and independent third party experts participating in the process. The selection process will be executed in two stages. The first is a qualification phase where shipyards must demonstrate the ability to build ships of greater than 1,000 tonnes lightship displacement. The next phase involves the preparation of a response to a request for proposal where the criteria are expected to be based upon best value. The federal government intends to have the two shipyards selected and be in negotiations by 2011 leading to construction in 2012-2013.

Significant and extensive economic benefits would be realized for the province from participating in these programs. These impacts are direct in terms of the funds flowing into the shipyard to build the vessels and indirect as a result of the support to be provided from local industry and service professionals supporting these contracts.

2.2 ABOUT SEASPAN SHIPBULIDING IN BC

Seaspan Marine Corporation originated in 1898 as a small coastal company servicing BC’s coastal communities. Over the years, Seaspan Marine Corporation has evolved into a major marine transportation company serving the west coast of North America. Seaspan also provides ship docking services to the Port of Vancouver, Victoria Esquimalt and other BC out ports. Seaspan is committed to the highest standards for quality, safety and customer services and are certified to ISO 9001:2000 for quality, OHSAS 18001 for safety and ISO 14001 for environmental standards.

Seaspan Marine Corporation owns and operates three shipyards: Vancouver Drydock Company Ltd., Vancouver Shipyards Co Ltd., and Victoria Shipyards Co. Ltd. at the federally owned Esquimalt Graving Dock. In 2011, these three shipyards employed 725 people.

Strategically located on the Canada's West Coast, Vancouver Shipyards' and Vancouver Drydock's modern, well-equipped facilities are located on the north shore of the sheltered, deep water port of Vancouver. Vessel maintenance and repair services are centered around two floating drydocks and a Syncrolift marine elevator. These facilities, coupled with large machine shop capability and craneage, enable the yards to handle vessels up to 85,000 deadweight tonnage (DWT). New construction facilities include a major steel forming shop and a large fabrication and assembly hall. The fabrication hall is environmentally controlled, allowing major fabrication of steel or aluminum, regardless of weather conditions.

Along with the abundance of experienced tradespeople, Seaspan Shipyards maintain a technical office staffed by highly skilled naval architects, draftsmen and marine engineers.

Victoria Shipyards is the largest ship repair company on Canada’s Pacific coast, handling vessels up to 100,000 DWT. Strategically located in the heart of the busy shipping lanes of the Pacific Northwest, the shipyard’s highly trained and experienced employees perform virtually every kind of ship construction, repair and conversion.

Seaspan shipyards are experienced in new construction, conversion, repair, and maintenance projects, including cruise ship conversions, work for the Canadian Navy, repair and maintenance work on deep sea vessels and containerships as well as new construction and repair work on ferries, tugs, fishing vessels, Arctic Class and research vessels, barges and yachts of various sizes.[8]

2.3 STUDY PURPOSE

In this report we examine the economic impact that would result from an increase in the activities of Seaspan shipbuilding in British Columbia. In particular, we contrast the economic impacts of Seaspan's current operations with those that could be realized from an increase in activity should Seaspan Shipyards be awarded the contract for the NSPS.

2.4 DATA COLLECTION, AVAILABILITY AND RELIABILITY

Data for the economic impact modelling were obtained directly from Seaspan representatives. Our work did not include evaluating the support for the data or the underlying assumptions. Accordingly, we do not express an opinion or any other form of assurance on the projections or assumptions. Estimates of economic impacts are derived from a combination of BC Stats and Statistics Canada's input/output models based on current and projected operational and capital spending of Seaspan shipyards. For the purposes of this study, we have used 2010 as a base year for measuring the economic impacts of current Seaspan operations as all required data for that year have been reported. When estimating future operational and capital spending, assumptions and approaches were selected in cooperation with Seaspan representatives. Additional material was collected through the review of publically available statistics, articles and reports.

2.5 ORGANIZATION OF THE REPORT

The remaining sections of the report are organized as follows:

- Section 3 provides an overview of the Canadian shipbuilding industry.
- Section 4 provides a description of economic impact methodology and provides the aggregate results for the economic impact of the value chain and other economic benefits.
- Section 5 provides a description of the social contributions made by Seaspan shipbuilding operations in British Columbia.
- Section 6 summarizes our findings.

2.6 REPORT LIMITATIONS

This report is not intended for general circulation, nor is it to be published in whole or in part without the prior written consent of Meyers Norris Penny LLP (MNP). The report is provided for information purposes and is intended for general guidance only. It should not be regarded as comprehensive or a substitute for personalized, professional advice.

We have relied upon the completeness, accuracy and fair presentation of all information and data obtained from Seaspan and public sources, believed to be reliable. The accuracy and reliability of the findings and opinions expressed in the presentation are conditional upon the completeness, accuracy and fair presentation of the information underlying them. As a result, we caution readers not to rely upon any findings or opinions expressed as accurate or complete and disclaim any liability to any party who relies upon them as such.

[8] Seaspan Marine Corporation

Additionally, the findings and opinions expressed in the presentation constitute judgments as of the date of the presentation, and are subject to change without notice. MNP is under no obligation to advise you of any change brought to its attention which would alter those findings or opinions.

Finally, the reader must understand that our analysis is based upon projections, founded on past events giving an expectation of certain future events. Future events are not guaranteed to follow past patterns and results may vary, even significantly. Accordingly, we express no assurance as to whether the projections underlying the economic and financial analysis will be achieved.

3. INDUSTRY OVERVIEW

3.1 HISTORY

Canada's shipbuilding and repairing industry is made up of 203 establishments (employer and non-employer), including approximately 30 shipyards that are located predominantly in the Atlantic Provinces, Quebec, Ontario and British Columbia.[9] The industry consists of establishments primarily engaged in operations of a shipyard. Shipyards are fixed facilities with dry docks and fabrication equipment capable of building a ship. Activities undertaken at shipyards include the construction and repair of ships, conversation and alteration, production of prefabricated ship and barge sections as well as specialized services.[10]

Canada has a long history in shipbuilding, with its origins dating back to pre-Confederation times. Since World War II, the ships of the Canadian navy have predominantly been built in Canada. In the years between naval programs, the industry did quite well competing in the commercial industry, building vessels such as icebreakers and oil rigs. Canada's shipbuilders, like shipbuilders in other regions, were receiving direct subsidies which also contributed to their competitiveness. This changed in 1986, when the Government of Canada rationalized the shipbuilding industry, thereby reducing its capacity by about 40%. Subsidies were also cancelled in anticipation of an Organisation for Economic Cooperation and Development (OECD) agreement on the elimination of subsidies globally. Subsequently, the industry was guided by a three-pronged policy which is still in effect today. The policy stipulated that: Canadian owners who qualified and built their vessels in Canada were allowed accelerated capital cost allowances; owners who wished to flag their ships as Canadian and participate in the Canadian domestic trade were subject to a 25% duty on vessels imported into Canada; and federal government fleets were to be constructed, converted, refitted, and repaired in Canada.[11]

Ultimately, the OECD initiative to eliminate subsidies was never ratified, leaving Canada's shipbuilders to compete in a highly-subsidized global shipping industry. The signing of the NAFTA Agreement in 1994 exacerbated the problems faced by the Canadian shipbuilding industry. The Agreement did not address the protectionist measures supporting the marine industry in the United Stated (i.e. the Jones Act which ensures that ships used in US domestic trade are owned, crewed, constructed and repaired in the United States) and, as a result, effectively closed the US market to shipbuilders in Canada.[12]

In the 1990s, the Canadian industry witnessed declining demand and a corresponding decrease in output and employment, attributable to a variety of factors including the completion of several military projects, defence cutbacks, market conditions and restrictive trade practices by competitive countries. Despite these conditions, the shipbuilding industry as a whole demonstrated periods of high profitability, likely due to increased exports, ship repair work and spin-off benefits from offshore oil & gas developments. Productivity of the industry has varied over the years, with productivity rising in the 1990s to 1996, and then declining sharply from 1996 to 2000. Fluctuations in productivity arise from the long cycle time involved in completing projects and the inclination for the industry to hoard skilled labour when production is decreasing.[13]

In the early 2000s committees were established to find ways for the Canadian shipbuilding industry to become self-sustaining and competitive, promote innovation, skills and productivity, and to suggest practical enhancements to existing federal programs. Only some of these recommendations have been addressed to date.[14]

[9] Rajotte, James. *Manufacturing: Moving Forward – Rising to the Challenge*, Report of the Standing Committee on Industry, Science and Technology, February 2007, 39th Parliament, 1st Season.
[10] Canadian Industry Statistics (CIS), Industry Canada
[11] *Shipbuilding and Industrial Preparedness*, Canadian Naval Review – Volume 2, Number 3 (Fall 2006)
[12] Ibid.
[13] White, Kenneth. *Economic Study of Canada's Marine and Ocean Industries*, Acton White & Associates, 2001.
[14] *Shipbuilding and Industrial Preparedness*, Canadian Naval Review – Volume 2, Number 3 (Fall 2006)

3.2 OVERVIEW OF THE CANADIAN SHIPBUILDING INDUSTRY

There are 100 firms included in Statistic's Canada's business registry in the ship and boat building industry yet the sector is dominated by a small number of firms. Some of the key companies and their location are highlighted below.

The employer establishments in the shipbuilding and repairing industry in Canada vary in terms of their employment size, as indicated in the table below.

Table 1:
Number of Employer Establishments in Canada by Employment Size Category and Region: December 2009

Province or Territory	Employment Size Category (Number of employees)			
	Micro 1-4	Small 5-99	Medium 100-499	Large 500+
Alberta	0	0	0	0
British Columbia	14	27	3	0
Manitoba	0	1	0	0
New Brunswick	2	1	0	0
Newfoundland and Labrador	2	5	1	0
Northwest Territories	0	0	0	0
Nova Scotia	2	8	2	1
Nunavut	0	0	0	0
Ontario	9	7	2	0
Prince Edward Island	1	1	1	0
Quebec	1	6	2	1
Saskatchewan	0	0	0	0
Yukon Territory	0	0	0	0
CANADA	31	56	11	2
Percent Distribution	31.0%	56.0%	11.0%	2.0%

**Source: Statistics Canada, Canadian Business Patterns Database, December 2009*

The breakdown of employer establishments in the shipbuilding and repairing national industry in 2009 was as follows: micro firms accounted for 31.0% of all establishments, employing less than 5 employees. Small establishments accounted for 56.0% and medium sized establishments accounted for an additional 11.0% of the total number of establishments. Large establishments (employing more than 500 persons on payroll) accounted for 2.0% of all establishments in the industry.[15]

BC has the largest number of shipbuilding and repairing establishments in Canada, including 14 micro, 27 small and 3 medium-sized employer establishments. BC's shipbuilding and repair industry continues to play an important role in the provincial economy by designing, building, repairing, maintaining and refitting ships for the marine transportation system. Furthermore, the provincial industry supports the Government of Canada's naval and coast guard fleets on the west coast.[16]

[15] Canadian Industry Statistics (CIS), Industry Canada
[16] Skelly, Michelle. *BC's Shipbuilding and Repair Industry Launches Major Review of Training Priorities*, Resource Training Organization, 2008.

The total number of employees in the Canadian shipbuilding and repairing industry decreased from 6,122 workers in 1999 to 3,566 workers in 2008, as indicated in Table 2 below. This represents an average annual decrease of 5.3%. It should be noted, however, that there was an increase of 3.2% in employment between 2007 and 2008. Breaking employment into its two principal components, the number of production employees declined from 5,156 workers in 1999 to 3,045 in 2008, an average decrease of 5.1% per year. At the same time, the number of administrative employees declined from 966 workers in 1999 to 521 in 2008, an average decrease of 6.0% per year. Both of these employee groups saw increases in the number of employees between 2007 and 2008; the number of production workers increased by 2.6% and the number of administrative employees increased by 7.2%.[17]

Table 2: Employment by Type of Employee for the Canadian Shipbuilding and Repair Industry 1999-2008

Type of Employee	Number of Employees		% of Total 2008	Compound Annual Growth Rate (CAGR) 1999-2008	% Change 2007-2008
	1999	2008			
Production	5,156	3,045	85.4%	-5.1%	2.6%
Administration	966	521	14.6%	-6.0%	7.2%
Total	6,122	3,566	100.0%	-5.3%	3.2%

**Source: Statistics Canada, special tabulation, unpublished data, Annual Survey of Manufacturers, 1998-2003 Annual Survey of Manufactures and Logging, 2004 to 2008.*

Aside from cyclical economic fluctuations, several factors may contribute to changes in the composition of the industry's workforce. The administrative component of the workforce (e.g. business administrators, managers, and professionals) may be growing in significance as a result of the increasingly knowledge-based nature of the economy. Advances in technology may result in lower demand for production workers, which could have a proportional impact on the requirement for managers and support staff. Furthermore, the increasing trend towards outsourcing could have an impact on employment levels for both production and administrative staff.[18]

[17] Canadian Industry Statistics (CIS), Industry Canada
[18] Ibid.

In the shipbuilding and repair industry, total salaries and wages paid to employees have decreased from $265.1 million in 1999 to $187.4 million in 2008, as indicated in Table 3 below. This represents an average annual decrease of 3.4%. This decrease in total salaries and wages is attributable to the decline in the number of workers given that average annual salaries rose at an average rate of 2.0% a year during this same time period. The average annual salary for employees in the industry rose from $43,402 in 1999 to $52,565 in 2008.[19]

Table 3:
Wages and Salaries Paid by Type of Employee in the Canadian Shipbuilding and Repair Industry 1999-2008

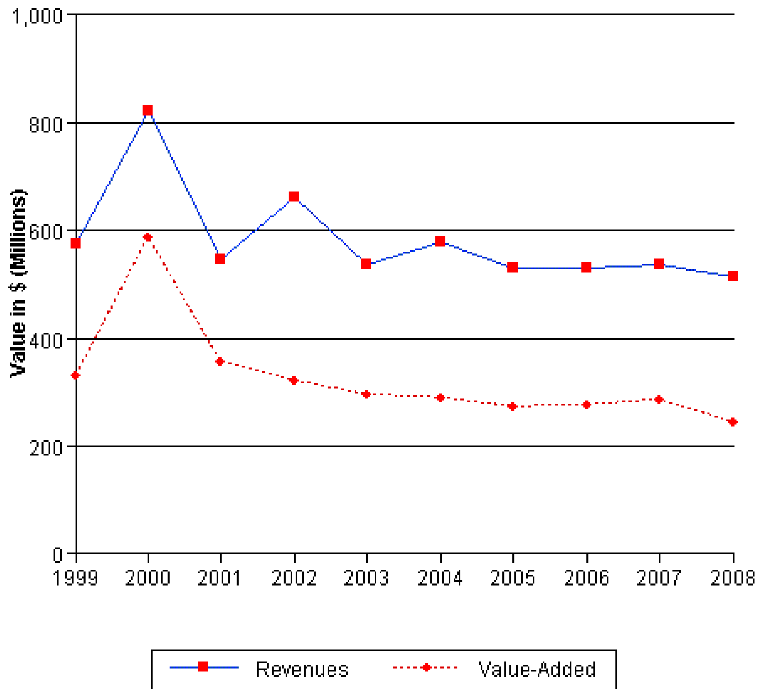
Type of Employee	Value in $ millions		% of Total 2008	CAGR 1999-2008	% Change 2007-2008
	1999	2008			
Production	214.6	159.5	85.1%	-2.9%	8.4%
Administration	50.5	27.9	14.9%	-5.8%	12.1%
Total	265.1	187.4	100.0%	-3.4%	9.0%

**Source: Statistics Canada, special tabulation, unpublished data, Annual Survey of Manufacturers, 1998-2003; Annual Survey of Manufactures and Logging, 2004 to 2008.*

The production in Canada is measured by the total value of manufacturing revenues of the industry. This is the value of good produced by the industry's establishments, including custom and repair work, as well as goods made under contract. As indicated in the chart below, manufacturing revenues for the Canadian shipbuilding and repairing industry declined from $573.8 million in 1999 to $514.9 million in 2008, an average annual decrease of 1.1%.

[19] Canadian Industry Statistics (CIS), Industry Canada

Chart 1: Manufacturing Revenues for the Canadian Shipbuilding and Repair Industry



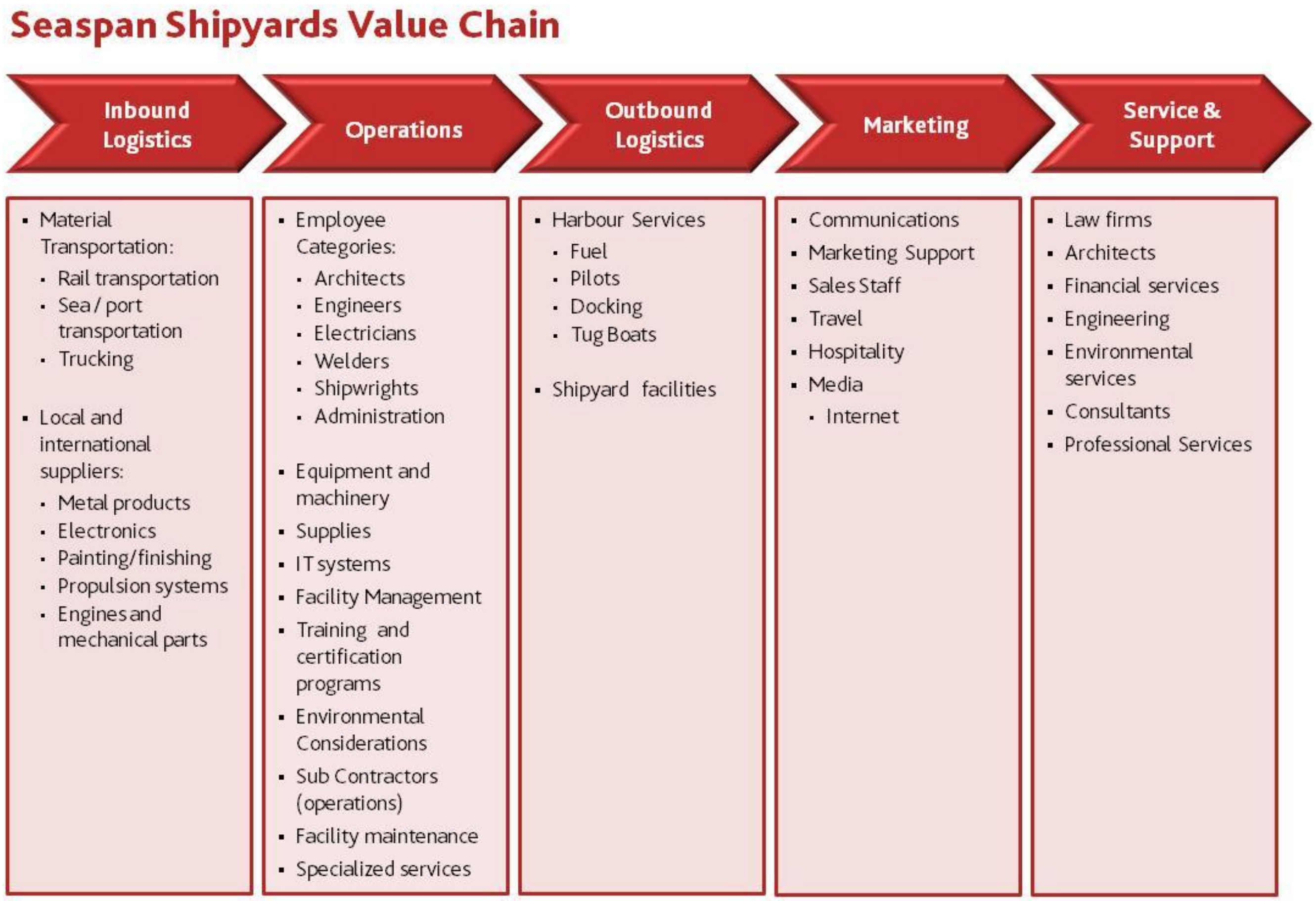
Source: Statistics Canada, special tabulation, unpublished data, Annual Survey of Manufactures, 1998 to 2003; Annual Survey of Manufactures and Logging, 2004 to 2008.

During this time, manufacturing value-added for the Canadian industry declined at an average annual rate of 3.0%, decreasing from $332.5 million in 1999 to $245.4 million in 2008.[20]

3.3 INTERACTIONS WITH OTHER BUSINESS

The value chain framework is a model that helps to analyze specific activities through which firms can create value and competitive advantage. The model illustrates the chain of activities for a firm operating in a specific industry. Products pass through all activities of the chain and with each activity the product gains some value. This chain of activity creates products with more added value than the sum of the independent activity's value. Highlighted on the next page is the value chain for Seaspan Shipyards.

[20] Canadian Industry Statistics (CIS), Industry Canada



As indicated in the diagram above, the value chain for shipbuilding is divided into a number of important primary activities. Inbound logistics involves the receiving, warehousing, and inventory control of input materials and includes activities such as transportation of materials to the shipyard and storing materials received. Operations are comprised of the value-creating activities that transform the inputs into the final product.[21] The operations of a shipyard employ various types of labour with a wide range of backgrounds (e.g. architects, engineers, welders, etc.) and various processes (e.g. steel cutting, keel laying, maintenance of facilities and machinery, sub-contracting production of parts etc.). Outbound logistics are the activities required to get the finished product to the customer and, in the case of shipbuilding, involves the delivery of the ship to the customer through the use of harbour services. Marketing and sales involves activities associated with getting buyers to purchase the product such as initial contact and contract signing. Service and support can happen both before and after production takes place. For instance, finance personnel structure the terms of the deal and contract administrators and legal counsel develop terms of the commercial arrangement between parties at the beginning whereas after service may involve engaging consultants to evaluate processes.

[21]The Value Chain Model/Michael Porter Value Chain Model Framework <http://drypen.in/featured-articles/the-value-chain-model-michael-porter-value-chain-model-framework.html>

4. ECONOMIC IMPACT ANALYSIS

4.1 METHODOLOGY

To estimate the economic impacts of Seaspan Shipyard's current and future operations, MNP utilized an input-output methodology using economic multipliers published by Statistics Canada and BC Stats. Input-output modeling is a widely-used and widely-accepted approach, making it recognizable by many different stakeholders and audiences. The structure of the approach also facilitates easy comparisons between reported results for different projects and facilities.

In general, economic impacts are viewed as being restricted to quantitative, well-established measures of economic activity. The most commonly used of these measures are output, GDP, government tax revenue and employment:

- **Output** is the total gross value of goods and services produced by a given company or industry measured by the price paid to the producer. This is the broadest measure of economic activity.
- **Gross Domestic Product (GDP)**, or value added 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 net output, or the difference between revenues and expenses on intermediate inputs. It is the incremental value created through labour or mechanical processing. Total GDP is a more meaningful measure of economic impact, as it avoids double counting during each round of impacts.
- **Government Tax Revenues** arise from personal income taxes, indirect taxes less subsidies (e.g. HST), corporate income taxes and natural resource royalties.
- **Employment** is the number of additional jobs created. Employment is measured in terms of full-time equivalents (FTE).

Economic impacts may be estimated at the direct, indirect, and induced levels.

- **Direct impacts** are changes that occur in "front-end" businesses that would initially receive expenditures and operating revenue as a direct consequence of the operations and activities of a facility.
- **Indirect impacts** arise from changes in activity for suppliers of the "front-end" businesses.
- **Induced impacts** arise from shifts in spending on goods and services as a consequence of changes to the payroll of the directly and indirectly affected businesses.

In contrast to economic impacts, economic benefits include measures that may be broader in scope, and may include both activity-based and outcome-based measures. These benefits may also describe long-term or downstream activity that would not normally be captured in economic impacts. While economic impacts utilize standard measures that can be estimated for nearly any type of project, economic benefits and their accompanying measures may vary greatly from project to project. Economic benefits may include:

- Creation of business partnerships
- Opportunities for trainees or interns
- Development of technological innovation
- Attraction/retention of qualified workforces

Social or community benefits may be quantitative or qualitative in nature and may address contributions made to local communities and general social development. Social benefits may include:

- Contributions to community groups
- Area revitalization
- Stronger and more cohesive communities
- Reduced reliance on social safety net programs

4.2 IMPACTS COMPARISON

The results of this analysis are intended to highlight the change in economic impacts that Seaspan Shipyards would contribute to the BC economy if successful in its bid to implement the NSPS. To demonstrate this change MNP modelled the economic impacts of both Seaspan's 2010 shipbuilding and repair operations and the estimated impacts of the future operations, assuming Seaspan is one of the two successful proponents in the NSPS program bid process.

Seaspan's future operations were modelled assuming that the organization is awarded the combat ship portion of the NSPS program. Seaspan average revenue from this program is estimated at $197.0 million per year between 2013 and 2022, $703.6 million per year between 2023 and 2032 and $318.7 million per year for the final nine years of the program. The allocation of this revenue to operational expenses, overhead expenses and profit margin was estimated based on industry knowledge and past project data from Seaspan's operations.

Also included in this analysis is the estimated marginal economic impact that will be realized as a result of the activities from Seaspan making significant capital investment in its Victoria and Vancouver shipyards.

4.3 CAPITAL INVESTMENT PHASE IMPACTS

As part of its bid to participate in the NSPS program, Seaspan has proposed making significant capital investment to its shipyards in Victoria and Vancouver over a two to three year period. The proposed capital upgrades will increase the efficiency of Seaspan's shipyards, improving productivity to a world class level. Additionally, these capital improvements will provide positive economic impacts to the BC economy through the construction, and related down stream activities required to complete the upgrades.

In 2010, Seaspan's capital investment in its shipyards was negligible in comparison to the investment required to complete the proposed facility upgrades. Completion of the upgrades is, however, dependent on Seaspan being selected by the federal government to implement the NSPS program. The economic impacts of the capital upgrades are therefore additional to Seaspan's current capital spending.

The total estimated economic impact of the capital improvements to the Victoria and Vancouver Shipyards are presented in Table 4. It is estimated that capital investment phase impacts will contribute $78.3 million in direct, indirect and induced GDP to the BC economy. Additionally, it is estimated that the construction related activities will generate $16.8 million in taxes at the federal, provincial and municipal levels.

The capital investment phase is also expected to result in additional employment impacts. It is estimated that approximately 1,290 direct, indirect and induced FTE opportunities will result from the capital spending at Seaspan's two shipyards over two to three years. Of these opportunities, it is projected that 737 FTE will result directly from Seaspan's capital spending.

Table 4: Projected Total Capital Investment Phase Impacts

Impact	Direct ($)	Indirect & Induced ($)	Total ($)
Output	109,268,410	77,961,536	187,229,946
GDP	40,959,696	37,320,832	78,280,528
Federal Taxes	3,260,706	3,862,396	7,123,101
Provincial Taxes	5,084,502	3,217,160	8,301,662
Municipal Taxes	674,196	670,125	1,344,321
Impact	**Direct (FTE)**	**Indirect & Induced (FTE)**	**Total (FTE)**
Employment	737	553	1,290

Appendix 1 provides a breakdown of the estimated economic impacts from the capital investment phase between Vancouver and Victoria. For the purpose of this study, all spending on Vancouver Island was assumed to have an impact in Victoria, while all spending in the rest of the province (primarily the Lower Mainland) was assumed to have an impact in Vancouver.

4.4 OPERATIONS PHASE IMPACTS

The operational phase economic impacts are those that result from Seaspan's ongoing shipbuilding and repair operations. The scale of the operations in Vancouver and Victoria is expected to increase if Seaspan is awarded a portion of the NSPS program. This increase in operation size would result in additional economic impacts in the province. The estimated total economic impacts of Seaspan's 2010 operations are presented in Table 5.

Table 5: Current Total Annual Operations Phase Impacts

Impact	Direct ($)	Indirect & Induced ($)	Total ($)
Output	95,416,531	75,289,988	170,706,519
GDP	76,634,598	48,859,550	125,494,148
Federal Taxes	13,324,367	4,533,840	17,858,207
Provincial Taxes	6,551,314	3,287,393	9,838,707
Municipal Taxes	1,197,555	799,888	1,997,442
Impact	**Direct (FTE)**	**Indirect & Induced (FTE)**	**Total (FTE)**
Employment	1,058	672	1,730

The results of this study are based on the assumption that Seaspan will be awarded the combat ship portion of the NSPS program. Under this scenario, it is estimated that Seaspan will collect average revenues of $197.0 million per year for the first 10 years of the program, $703.6 million per year for the next 10 years and $318.7 million per year for the final nine years of the contract. Tables 6, 7 and 8 present the estimated total average annual economic impacts of Seaspan's Vancouver and Victoria operations from 2013 to 2022, 2023 to 2032, and 2033 to 2041, respectively.

Table 6: Projected Total Average Annual Operations Phase Impacts – 2013-2022

Impact	Direct ($)	Indirect & Induced ($)	Total ($)
Output	206,736,009	166,909,026	373,645,035
GDP	173,323,731	109,896,065	283,219,795
Federal Taxes	22,427,831	5,938,884	28,366,715
Provincial Taxes	9,480,502	4,557,396	14,037,898
Municipal Taxes	1,553,550	1,070,110	2,623,660
Impact	**Direct (FTE)**	**Indirect & Induced (FTE)**	**Total (FTE)**
Employment	2,187	1,496	3,683

Table 7: Projected Total Average Annual Operations Phase Impacts – 2023-2032

Impact	Direct ($)	Indirect & Induced ($)	Total ($)
Output	531,131,610	213,636,916	744,768,526
GDP	434,289,606	259,365,726	693,655,333
Federal Taxes	49,558,523	20,958,439	70,516,962
Provincial Taxes	26,289,657	14,028,195	40,317,852
Municipal Taxes	2,425,333	1,731,844	4,157,177
Impact	**Direct (FTE)**	**Indirect & Induced (FTE)**	**Total (FTE)**
Employment	4,951	3,514	8,465

Table 8: Projected Total Average Annual Operations Phase Impacts – 2033-2041

Impact	Direct ($)	Indirect & Induced ($)	Total ($)
Output	275,559,875	223,425,484	498,985,359
GDP	233,122,668	147,547,275	380,669,943
Federal Taxes	28,074,412	6,805,605	34,880,017
Provincial Taxes	11,302,904	5,340,814	16,643,718
Municipal Taxes	1,773,151	1,236,800	3,009,951
Impact	**Direct (FTE)**	**Indirect & Induced (FTE)**	**Total (FTE)**
Employment	2,883	2,004	4,888

It is estimated that Seaspan's contribution to direct GDP, through its operations and direct spending, will increase from the $76.6 million estimated for 2010 to an average of $173.3 million per year for the first 10 years of the NSPS program. Over the next 10 years of the program this contribution is projected to increase to an average of $434.3 million year before declining to an average of $233.1 for the final nine years.

In 2010, Seaspan Shipyard's total tax impact for all levels of government was estimated to be $29.7 million. If successful in its bid, it is estimated that the annual average tax impacts will increase to $45.0 million from 2013 to 2019, $115.0 million from 2023 to 2032 and $54.5 million from 2033 to 2041. These estimated values include the tax generated from Seaspan's operations and direct spending as well as the indirect and induced taxes that will be created from down stream activities and wage and salary spending.

Should Seaspan be awarded the contract, it is anticipated that the NSPS program will provide BC with a number of employment opportunities. It is estimated that Seaspan's shipbuilding operations supported 1,058 direct FTE and 672 indirect and induced FTE in BC in 2010. The direct FTE include the employment opportunities created directly within the organization as well as those created from Seaspan's direct spending. The total direct employment impacts are projected to increase to an average of 2,187 FTE per year for the first 10 years, 4,951 FTE for the subsequent 10 year period and 2,883 FTE per year for the final nine years. The total indirect employment impacts are expected to increase to an average of 1,496 FTE, 3,514 FTE and 2,004 FTE over the same time periods.

Appendices 2 and 3 present separate estimated annual operations phase economic impacts for both Victoria and Vancouver.

Table 9 summarizes the projected total annual economic impacts for 2010, 2013 to 2022, 2023 to 2032 and 2033 to 2041.

Table 9: Projected Total Average Annual Economic Impact of Seaspan Shipyards Operations

	Estimated Total Average Annual Impacts ($)			
Impact	2010	2013-2022	2023-2032	2033-2041
Output	170,706,519	373,645,035	744,768,526	498,985,359
GDP	125,494,148	283,219,795	693,655,333	380,669,943
Federal Taxes	17,858,207	28,366,715	70,516,962	34,880,017
Provincial Taxes	9,838,707	14,037,898	23,876,605	16,643,718
Municipal Taxes	1,997,442	2,623,660	4,157,177	3,009,951

	Estimated Total Average Annual Impacts (FTE)			
Impact	2010	2013-2022	2023-2032	2033-2041
Employment	1,730	3,683	8,465	4,888

To provide some perspective, there is value in comparing the economic impacts generated by Seaspan's future shipbuilding and repair operations to the contributions of other industries. For the 2013 to 2022 period, the annual provincial and federal tax impacts generated by Seaspan Shipyards would be roughly equivalent to the tax revenues generated from the annual construction of 250 to 300 new homes in BC. The employment created by Seaspan's operations would be roughly equivalent to the employment generated by the annual construction of 600 to 700 new homes in BC.[22]

For the 2023-2032 period, the provincial and federal annual tax contributions generated by the shipbuilding and repair operations of Seaspan would be roughly equivalent to the tax revenues generated from the annual construction of 500 to 700 new homes in BC. The employment generated would be roughly equivalent to the employment created by the annual construction of 1,400 to 1,500 new homes.[23]

During the final phase of the program, Seaspan Shipyards is expected to contribute approximately $51.5 million annually in federal and provincial government revenues, which would be roughly equivalent to the tax revenue that would be generated from the annual construction of 300 to 400 new homes in the province. The employment created by Seaspan's operations in each of the years between 2033 and 2041 would be comparable to the employment created by the annual construction of 800 to 900 new homes.[24]

The annual GDP impacts estimated to be generated by Seaspan Shipyards over the period from 2013 to 2022 are also comparable to the contributions of the film and television industry to provincial GDP. Seaspan Shipyards is expected to contribute $283.2 million in GDP on an annual basis for the first ten years of the program, which is higher than the $276.0 million generated by the film and television industry in BC in 2007.[25]

The first two to three years of Seaspan's future operations under the program would create roughly the same GDP impact as the construction attributable to the 2010 Olympic and Paralympic Winter Games, which has been estimated to be between $630 and $820 million in GDP. The first seven to nine years of Seaspan's future operations under the program would be roughly equivalent to the total GDP impact of the Olympics, which has been estimated to be between $2.0 and $2.5 billion.[26]

[22] Economic and Fiscal Impacts of Residential Construction, British Columbia, Will Dunning Inc.
[23] Ibid.
[24] Ibid.
[25] Opportunity BC 2020: Creative Sector, PricewaterhouseCoopers
[26] Report 6: Economic Impact of the 2010 Olympic and Paralympic Winter Games on British Columbia and Canada: 2010, PricewaterhouseCoopers

5. SOCIAL CONTRIBUTIONS OF SEASPAN SHIPBUILDING

5.1 SUMMARY

Benefits generated from Seaspan shipbuilding and repair operations also include contributions to social development. Social contributions are not easily quantified, but may have far reaching impacts on individuals, communities and the environment.

Seaspan is committed to contributing to humanitarian causes in the community and makes corporate responsibility a top priority. The company strives to be a positive role model for business, and has the vision and courage to take risks and be a catalyst for change. Seaspan makes investments in people and youth to help them improve the quality of their lives. The company is also committed to ensuring the long term conservation of Canadians Oceans and the environment. The company provides leadership within the business community, the marine community, and the community at large.

5.2 INVOLVEMENT THE COMMUNITY

Seaspan has selected two primary charitable organizations to support, which demonstrates its dedication to the organizations commitments and values. In July 2007, Seaspan began an unparalleled 5-year partnership with the World Wildlife Fund (WWF) Canada, a leading globally conservation body working to stop the degradation of the natural environment. Seaspan is the only marine transportation in Canada, and the second marine company globally, to have such a partnership. Through its partnership with the WWF, Seaspan helps to raise the profile and standard of environmental management within its industry and the community. Seaspan understands the need to protect the natural environment within which it works in order for its business to be sustainable. WWF provides expert advice to Seaspan on numerous environmental and conservation initiatives. Furthermore, WWF provides input to, and analysis of Seaspan's environmental objectives and helps them work towards more sustainable operations.

Seaspan has also been a long-term supporter of the United Way, an organization which provides reliable support to the communities in which Seaspan operates and aligns with the company's core values.[27]

5.3 COMMITMENT TO THE ENVIRONMENT

Seaspan operates in environmentally sensitive and populated areas and, as such, aims to respond to public environmental concerns in an effective manner. Seaspan has undertaken a number of environmental stewardship and awareness initiatives over the years. For instance, Seaspan participated in the Great Canadian Shoreline Clean Up on two local BC shorelines. Some environmental awareness initiatives Seaspan has been involved in include:

- Employee Earth Day and Earth Hour events
- Bike to Work week
- Port Metro Vancouver Idle-Free Zone signage posted in Seaspan shipyards and marine terminals
- Working with Lynn Canyon Ecology Center and Fisheries and Oceans Canada (DFO) to pilot a storm drain marking program using fish stencils on Seaspan shipyards in an effort to promote awareness and prevent deleterious substance release to the marine environment.
- ISO 14001 certification and recognition in the Green Marine initiative

Seaspan has received recognition from the local community for its environmental efforts, including the 2010 Environmental Stewardship award from the City of North Vancouver for their diversion and habitat restoration project on Lower Mackay Creek.

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[27] www.seaspan.com

6. CONCLUSION

The analysis presented in this study has shown that Seaspan's shipbuilding and repair operations will produce significant economic impacts for the British Columbia economy should it be awarded the contract for the NSPS strategy.

Significant and extensive economic impacts would be realized for the province should Seaspan Shipyards participate in the NSPS program. The economic impacts across the entire value chain are estimated to average $328.2 million annually between 2013 and 2022, $792.2 million annually between 2023 and 2032 and $435.2 million annually between 2033 and 2041. The future economic activities of Seaspan's shipbuilding operations are also expected to be responsible for the annual employment of, on average, 3,683 FTE for the first 10 years of the program, 8,465 FTE for the second 10 years and 4,888 FTE for the final nine years. Seaspan's shipbuilding operations are also expected to contribute significantly to tax revenues of various levels of government. More specifically, total contributions to federal tax revenues are estimated to average $28.4 million annually between 2013 and 2022, $70.5 million annually between 2023 and 2032 and $34.9 million between 2033 and 2041. Provincial and municipal tax revenues are estimated to average $16.7 million, $28.0 million and $19.7 million annually over the same time frame.

In addition to the economic benefits that would be realized for BC, securing the program under the NSPS strategy is crucial in developing a competitive shipbuilding and repair industry in BC. The current level of shipbuilding activity in BC is not high enough to sustain a competitive shipbuilding and repair industry. Furthermore, without the contract, the province will miss the opportunity to realize various economic benefits, such as training opportunities, the attraction and retention of qualified workers, the creation of business partnerships and advances in technological innovation.

7. ABOUT MNP

MNP is the fastest growing chartered accountancy and business advisory firm in Canada. Founded in 1945, MNP has grown from a single office in Manitoba to more than 50 offices and 2,600 team members across Canada. In British Columbia MNP has more than 450 staff located in 15 offices across the province.

MNP is a member of Praxity AISBL, a global alliance of independent firms, which enables us to access a broad range of industry specific expertise worldwide.

At MNP, our professionals are the driving force behind our success. They continue to demonstrate our culture and values which is integral to the way we conduct business, both internally and externally. As such, MNP is proud to be recognized for the third year in a row as one of the *50 Best Employers in Canada* by *Report On Business* magazine.

MNP provides a wide range of accounting, finance and business advisory services to clients. These include:

- Assurance
- Corporate Finance
- Enterprise Risk Services
- Consulting
- Succession
- Taxation
- Mergers and Acquisitions
- Forensic Accounting
- Insolvency and Corporate Recovery
- Valuations and Litigation Support

APPENDIX 1: CAPITAL INVESTMENT PHASE IMPACTS FOR VICTORIA AND VANCOUVER

The tables below provide a breakdown of the estimated economic impacts of Seaspan's proposed capital investment in the Victoria and Vancouver Shipyards.

Victoria Shipyard Capital Investment Phase Impacts

Impact	Direct ($)	Indirect & Induced ($)	Total ($)
Output	42,507,610	30,315,268	72,822,878
GDP	15,525,016	14,479,560	30,004,576
Federal Taxes	1,238,765	1,498,556	2,737,320
Provincial Taxes	1,991,814	1,248,905	3,240,718
Municipal Taxes	249,651	260,440	510,091
Impact	**Direct (FTE)**	**Indirect & Induced (FTE)**	**Total (FTE)**
Employment	287	214	501

Vancouver Shipyard Capital Investment Phase Impacts

Impact	Direct ($)	Indirect & Induced ($)	Total ($)
Output	66,760,800	47,646,268	114,407,068
GDP	25,434,680	22,841,272	48,275,952
Federal Taxes	2,021,941	2,363,840	4,385,781
Provincial Taxes	3,092,688	1,968,255	5,060,944
Municipal Taxes	424,545	409,685	834,230
Impact	**Direct (FTE)**	**Indirect & Induced (FTE)**	**Total (FTE)**
Employment	450	339	789

APPENDIX 2: AVERAGE ANNUAL OPERATIONS PHASE IMPACTS FROM THE VICTORIA SHIPYARD

The tables below provide a breakdown of the estimated total average annual economic impacts from Seaspan's ongoing operations at the Victoria Shipyard.

Current State Total Annual Operations Phase Impacts – Victoria

Impact	Direct ($)	Indirect & Induced ($)	Total ($)
Output	77,519,595	58,967,095	136,486,690
GDP	60,948,058	37,632,408	98,580,466
Federal Taxes	10,464,908	3,516,400	13,981,308
Provincial Taxes	5,230,709	2,661,768	7,892,477
Municipal Taxes	627,172	229,505	856,677
Impact	**Direct (FTE)**	**Indirect & Induced (FTE)**	**Total (FTE)**
Employment	772	521	1,292

Future State Total Average Annual Operations Phase Impacts – Victoria Shipyard: 2013-2022

Impact	Direct ($)	Indirect & Induced ($)	Total ($)
Output	93,380,879	76,765,290	170,146,169
GDP	80,057,057	49,621,661	129,678,718
Federal Taxes	11,487,652	3,763,064	15,250,715
Provincial Taxes	5,771,958	2,883,830	8,655,788
Municipal Taxes	690,369	275,421	965,790
Impact	**Direct (FTE)**	**Indirect & Induced (FTE)**	**Total (FTE)**
Employment	988	681	1,669

Future State Total Average Annual Operations Phase Impacts – Victoria Shipyard: 2023-2032

Impact	Direct ($)	Indirect & Induced ($)	Total ($)
Output	164,662,611	120,350,514	285,013,125
GDP	131,689,866	78,981,619	210,671,485
Federal Taxes	14,959,727	4,367,107	19,326,834
Provincial Taxes	7,581,161	3,427,628	11,008,790
Municipal Taxes	845,128	387,863	1,232,991
Impact	**Direct (FTE)**	**Indirect & Induced (FTE)**	**Total (FTE)**
Employment	1,518	1,075	2,593

Future State Total Average Annual Operations Phase Impacts – Victoria Shipyard: 2033-2041

Impact	Direct ($)	Indirect & Induced ($)	Total ($)
Output	103,196,114	87,744,350	190,940,464
GDP	91,875,689	57,017,396	148,893,085
Federal Taxes	12,124,742	3,915,221	16,039,963
Provincial Taxes	6,108,934	3,020,812	9,129,746
Municipal Taxes	729,352	303,745	1,033,098
Impact	**Direct (FTE)**	**Indirect & Induced (FTE)**	**Total (FTE)**
Employment	1,121	781	1,902

APPENDIX 3: AVERAGE ANNUAL OPERATIONS PHASE IMPACTS FROM THE VANCOUVER SHIPYARD

The tables below provide a breakdown of the estimated total average annual economic impacts from Seaspan's ongoing operations at the Vancouver Shipyard.

Current State Total Annual Operations Phase Impacts – Vancouver Shipyard

Impact	Direct ($)	Indirect & Induced ($)	Total ($)
Output	17,896,936	16,322,894	34,219,829
GDP	15,686,540	11,227,142	26,913,682
Federal Taxes	2,859,459	1,017,439	3,876,898
Provincial Taxes	1,320,605	625,625	1,946,230
Municipal Taxes	570,383	570,383	1,140,765
Impact	**Direct (FTE)**	**Indirect & Induced (FTE)**	**Total (FTE)**
Employment	287	151	438

Future State Total Average Annual Operations Phase Impacts – Vancouver Shipyard: 2013-2022

Impact	Direct ($)	Indirect & Induced ($)	Total ($)
Output	113,355,129	90,143,737	203,498,866
GDP	93,266,673	60,274,404	153,541,077
Federal Taxes	10,940,180	2,175,820	13,116,000
Provincial Taxes	3,708,544	1,673,565	5,382,109
Municipal Taxes	863,182	794,688	1,657,870
Impact	**Direct (FTE)**	**Indirect & Induced (FTE)**	**Total (FTE)**
Employment	1,199	814	2,014

Future State Total Average Annual Operations Phase Impacts – Vancouver Shipyard: 2023-2032

Impact	Direct ($)	Indirect & Induced ($)	Total ($)
Output	366,468,999	93,286,402	459,755,401
GDP	302,599,740	180,384,107	482,983,847
Federal Taxes	34,598,797	16,591,332	51,190,129
Provincial Taxes	18,708,495	10,600,567	29,309,062
Municipal Taxes	1,580,206	1,343,981	2,924,186
Impact	**Direct (FTE)**	**Indirect & Induced (FTE)**	**Total (FTE)**
Employment	3,433	2,439	5,872

Future State Total Average Annual Operations Phase Impacts – Vancouver Shipyard: 2032-2041

Impact	Direct ($)	Indirect & Induced ($)	Total ($)
Output	172,363,761	135,681,134	308,044,896
GDP	141,246,979	90,529,879	231,776,858
Federal Taxes	15,949,671	2,890,384	18,840,054
Provincial Taxes	5,193,971	2,320,002	7,513,972
Municipal Taxes	1,043,799	933,054	1,976,853
Impact	**Direct (FTE)**	**Indirect & Induced (FTE)**	**Total (FTE)**
Employment	1,762	1,224	2,986