

Socio-economic Contribution Study of Seaspan Shipyards Shipbuilding Activities and Repair, Refit and Maintenance Activities

Prepared for Seaspan Shipyards

Note to Reader

This report has been provided to Seaspan Shipyards (“Seaspan”) for the purpose of updating and extending the economic contribution analysis completed by Deloitte in 2021. It is intended to provide estimates of the economic contribution to Canada, British Columbia and the rest of the Canadian provinces arising from Seaspan Shipyards operations and capital investments associated with the National Shipbuilding Strategy (“NSS”) program-related activities, as well as Seaspan’s repair, refit and maintenance activities over the 2012 – 2022 period. It should be noted that in previous years’ studies impacts to the rest of the provinces were not calculated. As a result, provincial leakages from British Columbia were not captured and may cause small discrepancies in previous year’s results.

This study does not represent a cost-benefit analysis for Seaspan Shipyards or any other stakeholder and does not represent a comparison of the potential economic impact of Seaspan Shipyards activities to the potential impact of an alternative use of resources. In particular, the study does not examine the costs of pursuing the activities in scope of the study, including the opportunity costs for Seaspan Shipyards and other stakeholders.

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This analysis has been made only for the purpose stated and shall not be used for any other purpose.

The analysis is provided as of June 2nd 2023, and we disclaim any undertaking or obligation to advise any person of any change in any fact or matter affecting this analysis, which may come or be brought to our attention after the date hereof. Seaspan Shipyards work under the NSS program and repair, refit, and maintenance activities economic contribution reflect Seaspan Shipyards financials up to December 31, 2022 (forecasted for 2022). Without limiting the foregoing, in the event that there is any material change in any fact or matter affecting the analyses after the date hereof, we reserve the right to change, modify or withdraw the analysis.

Observations are made on the basis of economic, industrial, competitive and general business conditions prevailing as at the date hereof. In the analyses, we may have made assumptions with respect to the industry performance, general business, and economic conditions and other matters, many of which are beyond our control, including government and industry regulation.

No opinion, counsel, or interpretation is intended in matters that require legal or other appropriate professional advice. It is assumed that such opinion, counsel, or interpretations have been, or will be, obtained from the appropriate professional sources. To the extent that there are legal issues relating to compliance with applicable laws, regulations, and policies, we assume no responsibility therefore.

We believe that our analyses must be considered as a whole and that selecting portions of the analyses or the factors considered by it, without considering all factors and analyses together, could create a misleading view of the issues related to the report. Amendment of any of the assumptions identified throughout this report could have a material impact on our analysis contained herein. Should any of the major assumptions not be accurate or should any of the information provided to us not be factual or correct, our analyses, as expressed in this report, could be significantly different.

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Executive Summary



Foreword

Deloitte was engaged by Seaspan Shipyards to assess the economic contribution of its shipbuilding activities related to the National Shipbuilding Strategy (NSS) program, and separately, of Seaspan's repair, refit and maintenance activities in Canada.

The headline numbers are a contribution of \$3.9 billion to Canadian GDP over the past 11 years from Seaspan's shipbuilding activities under the NSS, sustaining/creating approximately 5,321 jobs annually, and contributing \$967 million to federal, provincial and municipal government revenues. Seaspan's repair, refit and maintenance activities are estimated to have contributed an additional \$1.8 billion to Canadian GDP over the past 11 years, sustained/created approximately 2,009 jobs annually and added \$461 million to government revenue over the period.

Additionally, over the next 12 years, Seaspan's shipbuilding activities under the NSS are forecasted to contribute \$16.5 billion to Canadian GDP, \$10.6 billion to labour income, \$4.3 billion to federal, provincial and municipal government revenues, and sustain/create approximately 9,042 jobs. Seaspan's repair, refit and maintenance activities are forecasted to contribute \$4.2 billion to Canadian GDP, \$2.6 billion to labour income, \$1.6 billion to federal, provincial and municipal government revenues, and sustain/create approximately 1,896 jobs.

Big numbers, but what do they really mean and why are they important? Let's take a step back and consider the importance of shipbuilding to our country.

Canada is a maritime country, with large bodies of water to the east, west and north, the longest coastline in the world and major rivers and large navigable lakes. Naturally, shipbuilding and repair was bound to develop. Canada has been building seagoing vessels since at the late 1600s, making shipbuilding and ship repair one of the country's oldest industries.

However, the history of shipbuilding has been extremely volatile. For example, the industry flourished in the late 1800s when Canada became the fourth-largest ship-owning nation in the world. There were also the periods of war – both the Great War and the Second World War – when shipbuilding in Canada played a critical role in producing ships to defend freedom and kept essential goods flowing to allies. However, there have also been periods of decline where shipbuilding decreased as a share of the economy. While demobilization of navies after WWII played a part, the far bigger challenge has been globalization that created intense competitive pressures. Regardless, shipbuilding remains an important industry for Canada.

Seaspan Shipyards Today

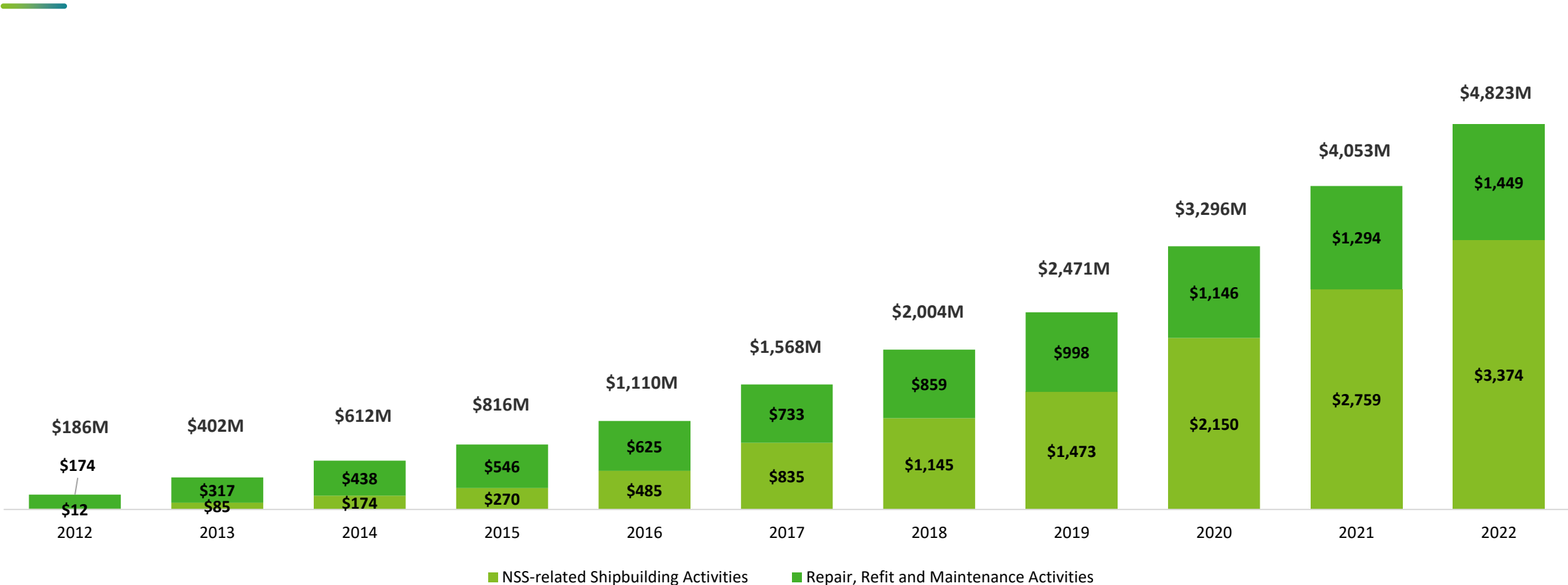
Key statistics of Seaspan Shipyards (“Seaspan”), including Vancouver Shipyards, Vancouver Drydock, and Victoria Shipyards, in Canada’s marine industry



Seaspan Shipyards' NSS Shipbuilding Investments & Maintenance, Repair and Refit Work Expenses

Since the inception of the National Shipbuilding Strategy, Seaspan has spent over \$3.4B on shipbuilding operations, modernization of shipyard infrastructure, integration of advanced shipbuilding technologies, and development of skilled workers. Additionally, \$1.4B has been spent on maintenance, repair and refit work across the 2012-2022 timeline.

NSS-related & maintenance, repair and refit cumulative operating expenditures and capital investment, 2012-2022 in \$M

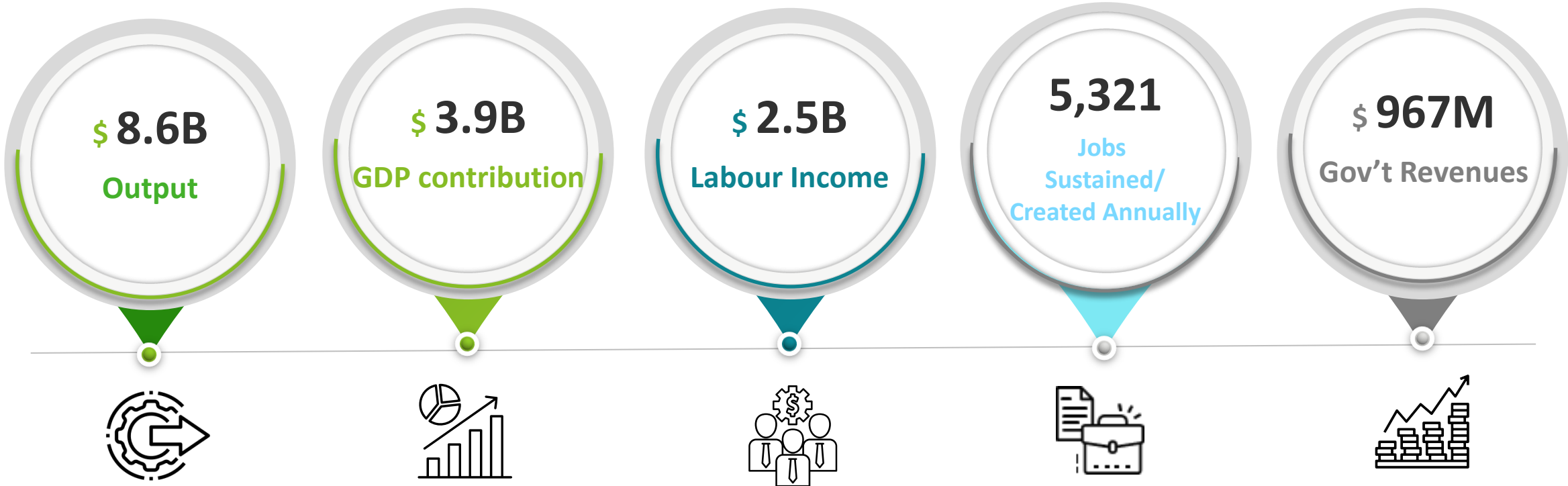


f: forecast
Source: Deloitte LLP. Socio-economic Contribution Study of Seaspan Shipyards Operations and NSS program-related Activities, Prepared for Seaspan Shipyards, October, 2021
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Economic Contributions from Seaspan Shipyards' NSS Shipbuilding Activities

Seaspan's NSS program-related shipbuilding activities drive significant economic contributions to Canada's GDP, employment and government revenue

Economic contribution of NSS program-related shipbuilding activities in Canada, direct, indirect and induced, from 2012 to 2022,



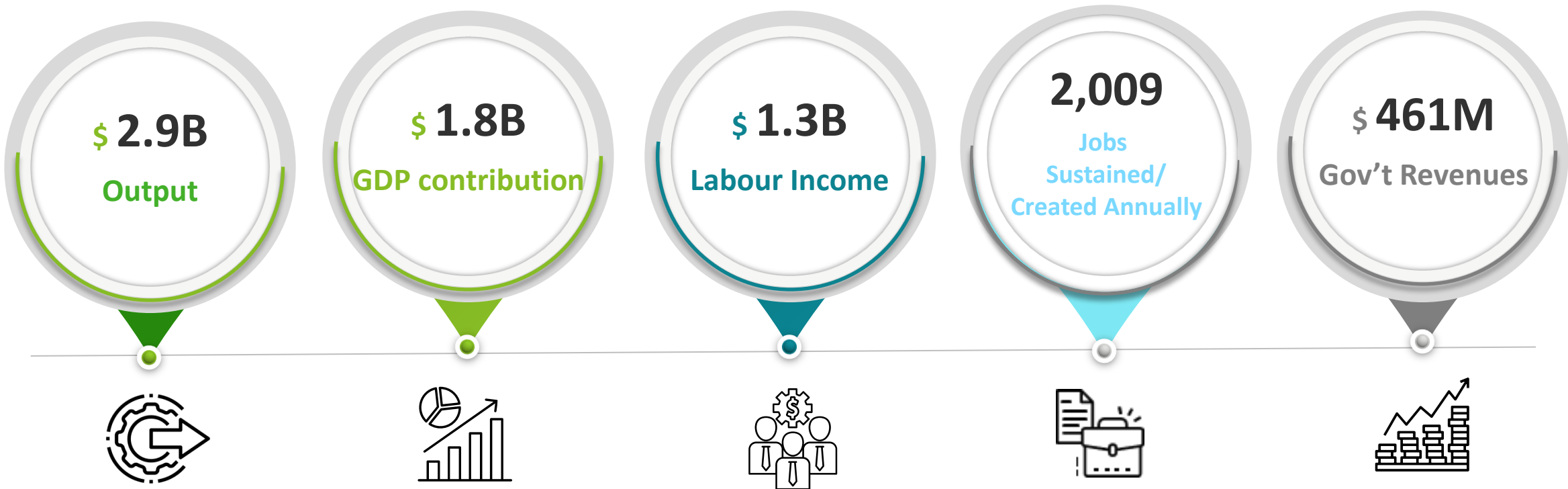
For every **\$1 spent** on NSS-related activities, Seaspan added **\$1.15** to Canadian GDP, when direct, indirect, and induced impacts are included.

For every **\$1 spent** on NSS-related activities, Seaspan added **\$2.55** to Canadian Output, when direct, indirect, and induced impacts are included.

Economic Contributions from Seaspan Shipyards' Repair, Refit and Maintenance Activities

In addition to the economic contribution to Canada from NSS-related ship-building activity highlighted on the previous slide, Seaspan contributes to the Canadian economy through its repair, refit and maintenance activities at its Victoria Shipyards and Vancouver Drydock locations

Economic contribution of Repair, Refit and Maintenance activities in Canada, direct, indirect and induced, from 2012 to 2022,









For every \$1 spent on repair, refit and maintenance activities, Seaspan added \$1.22 to Canadian GDP, when direct, indirect, and induced impacts are included.

For every \$1 spent on repair, refit and maintenance activities, Seaspan added \$2.04 to Canadian Output, when direct, indirect, and induced impacts are included.

Summary of Seaspan Shipyards’ Economic Contribution to Canada

Accounting for direct, indirect and induced contribution, Seaspan’s NSS-related shipbuilding activities together with repair, refit and maintenance activities have contributed \$5.7B to GDP, 7,330 annual jobs and \$1.4B in government revenues in Canada over the 2012-2022_f period

Summary of direct, indirect and induced economic contribution to Canada

		NSS-related Shipbuilding Activities ^{1,2} (2012-2022 _f)				Repair, Refit and Maintenance Activities ² (2012-2022 _f)				Total Economic Contribution
		Direct ¹	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
	Expenditure	\$3.4B				\$1.5B				
	Gross Output³	\$3.6B in Output	\$3.9B in Output	\$1.1B in Output	\$8.6B in Output	\$1.6B in Output	\$919M in Output	\$434M in Output	\$2.9B in Output	\$11.5B in Output
	GDP	\$1.3B in GDP	\$1.9B in GDP	\$691M in GDP	\$3.9B in GDP	\$1.0B in GDP	\$473M in GDP	\$275M in GDP	\$1.8B in GDP	\$5.7B in GDP
	Labour Income	\$969M in labour income	\$1.2B in labour income	\$293M in labour income	\$2.5B in labour income	\$885M in labour income	\$307M in labour income	\$114M in labour income	\$1.3B in labour income	\$3.8B in labour income
	Employment⁴	1,931 jobs created or sustained annually	2,420 jobs created or sustained annually	970 jobs created or sustained annually	5,321 jobs created or sustained annually	1,396 jobs created or sustained annually	378 jobs created or sustained annually	236 jobs created or sustained annually	2,009 jobs created or sustained annually	7,330 jobs created or sustained annually
	Gov’t Revenues	\$288M in federal, provincial and municipal taxes	\$419M in federal, provincial and municipal taxes	\$260M in federal, provincial and municipal taxes	\$967M in federal, provincial and municipal taxes	\$253M in federal, provincial and municipal taxes	\$104M in federal, provincial and municipal taxes	\$104M in federal, provincial and municipal taxes	\$461M in federal, provincial and municipal taxes	\$1.4B in federal, provincial and municipal taxes

1. Seaspan capital expenditures were provided separately for each year, then deflated to 2019 dollars and summed up across years to produce estimates of cumulative impacts. Please refer to appendix for additional methodology details.

2. All activities in the Vancouver Shipyard are assumed to be NSS program related.







3. Gross output (GO) is the value of the goods and services produced by the Canadian economy. It is principally measured using industry sales or receipts, including sales to final users (GDP) and sales to other industries (intermediate inputs). GDP is defined as the total unduplicated value of goods and services produced in the economic territory of a country or a region during a given period.

4. Based on 2022 NSS-related shipbuilding and repair, refit and maintenance activities..

Summary of Seaspan Shipyards’ Economic Contribution to British Columbia

Accounting for direct, indirect and induced contribution, Seaspan’s NSS-related shipbuilding activities together with repair, refit and maintenance activities have contributed \$4.3B to GDP, 5,712 annual jobs and \$499M in government revenues in BC over the 2012-2022_f period

Summary of direct, indirect and induced economic contribution to British Columbia³

		NSS-related Shipbuilding Activities ^{1,2} (2012-2022 _f)				Repair, Refit and Maintenance Activities ² (2012-2022 _f)				Total Economic Contribution
		Direct ¹	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
	Expenditure	\$2.1B				\$1.2B				
	Gross Output	\$3.6B in Output	\$1.9B in Output	\$706M in Output	\$6.2B in Output	\$1.6B in Output	\$503M in Output	\$344M in Output	\$2.4B in Output	\$8.6B in Output
	GDP	\$1.3B in GDP	\$1.1B in GDP	\$458M in GDP	\$2.8B in GDP	\$1.0B in GDP	\$290M in GDP	\$223M in GDP	\$1.5B in GDP	\$4.3B in GDP
	Labour Income	\$969M in labour income	\$719M in labour income	\$183M in labour income	\$1.9B in labour income	\$885M in labour income	\$191M in labour income	\$89M in labour income	\$1.2B in labour income	\$3.1B in labour income
	Employment ⁴	1,931 jobs created or sustained annually	1,324 jobs created or sustained annually	614 jobs created or sustained annually	3,869 jobs created or sustained annually	1,396 jobs created or sustained annually	258 jobs created or sustained annually	189 jobs created or sustained annually	1,843 jobs created or sustained annually	5,712 jobs created or sustained annually
	Gov't Revenues ⁵	\$115M in provincial and municipal taxes	\$113M in provincial and municipal taxes	\$101M in provincial and municipal taxes	\$329M in provincial and municipal taxes	\$90M in provincial and municipal taxes	\$30M in provincial and municipal taxes	\$49M in provincial and municipal taxes	\$170M in provincial and municipal taxes	\$499M in provincial and municipal taxes

1. Seaspan capital expenditures were provided separately for each year, then deflated to 2019 dollars and summed up across years to produce estimates of cumulative impacts. Please refer to appendix for additional methodology details.

2. All activities in the Vancouver Shipyard are assumed to be NSS program related.

3. These results account for provincial leakages from the BC expenditure to other provinces.

4. Based on 2022 NSS-related shipbuilding and repair, refit and maintenance activities.

5. Federal revenues excluded from provincial calculations but are included in the national level calculations.

Seaspan Shipyards' Impact Across the Supply Chain

Seaspan's NSS program-related activities are supporting growth and maturation across the supply chain, including for small and medium-sized Canadian businesses

Between 2012 and 2023, Seaspan Shipyards:

awarded **\$2.4B**
in contract value to Canadian suppliers as part
of NSS-related shipbuilding activities

across **710+** Canadian suppliers –
small, medium, and large businesses from
coast to coast.



490+
of those suppliers were small and medium-
sized Canadian businesses

accounting for **63%** of NSS-related
contract value



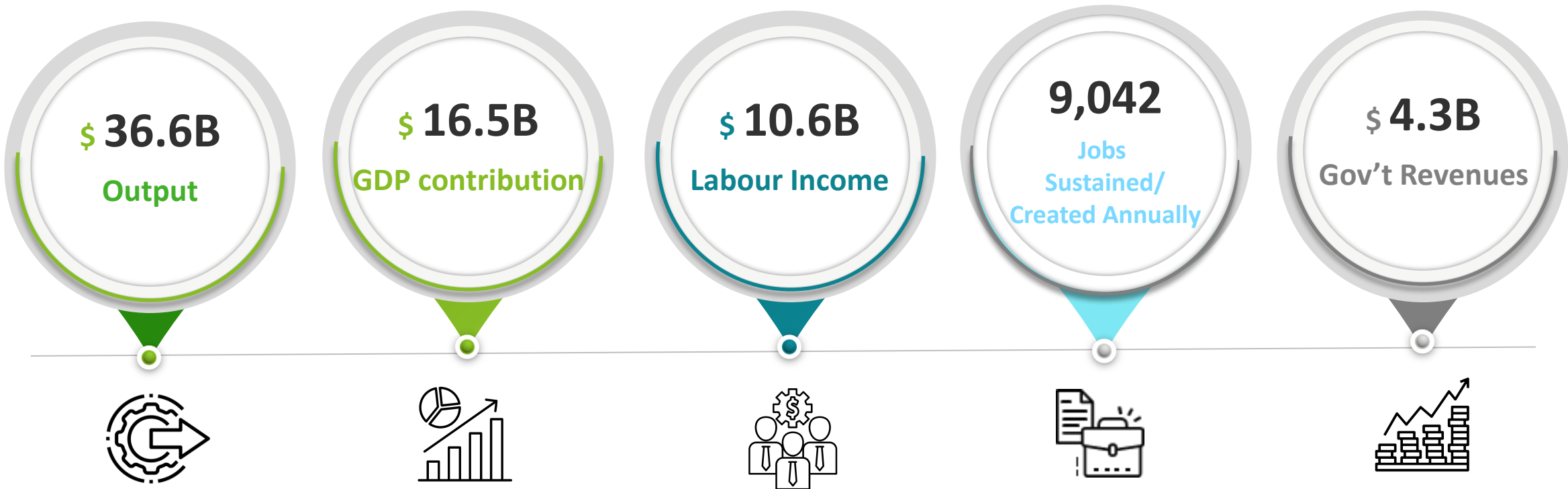
Partnering with Seaspan Shipyards
and with others in the supply chain
gives businesses the opportunity to
learn and leverage innovative
shipbuilding approaches, tools, and
best practices.

Long-term contracts can provide a
source of stable revenue that
encourages suppliers, especially
SMEs, to reinvest in R&D, technology
and process improvements, skills
development and training, and new
infrastructure.

Projected Economic Contributions from Seaspan Shipyards' NSS Shipbuilding Activities

Seaspan's NSS program-related shipbuilding activities are expected to continue driving significant economic contributions to Canada's GDP, employment and government revenue

Economic contribution of NSS program-related shipbuilding activities in Canada, direct, indirect and induced, from 2023 to 2035,



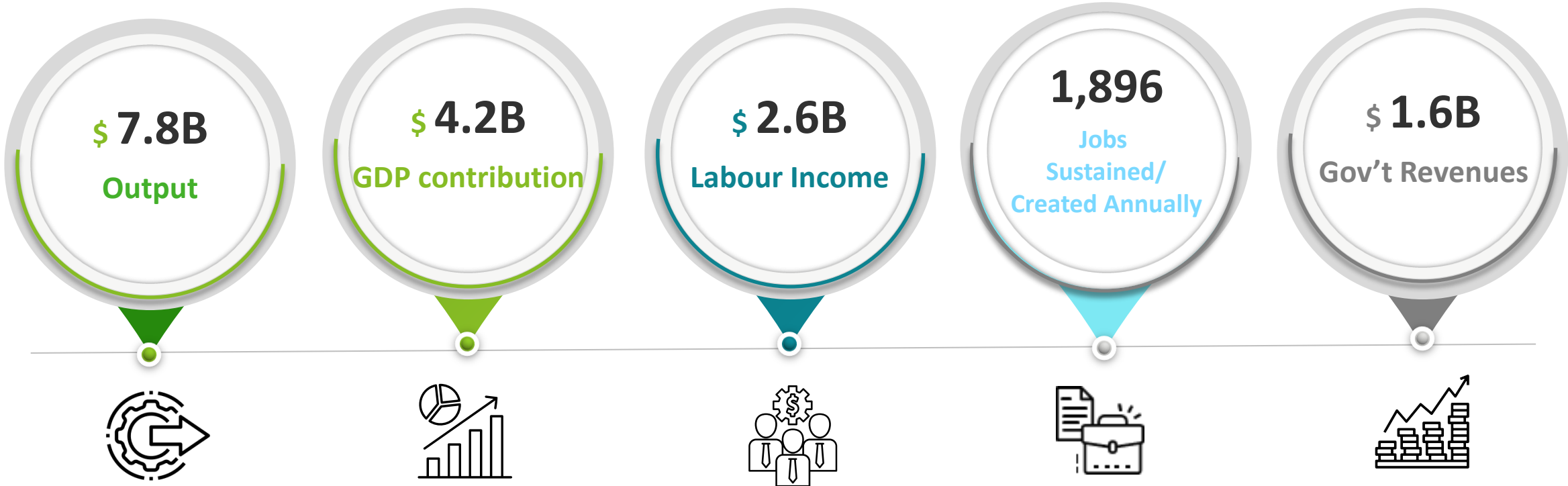
For every **\$1 spent** on NSS-related activities, Seaspan is projected to add **\$1.17** to Canadian GDP, when direct, indirect, and induced impacts are included.

For every **\$1 spent** on NSS-related activities, Seaspan is projected to add **\$2.59** to Canadian Output, when direct, indirect, and induced impacts are included.

Projected Economic Contributions from Seaspan Shipyards’ Repair, Refit and Maintenance Activities

In addition to the economic contribution to Canada from NSS-related ship-building activity highlighted on the previous slide, Seaspan will continue to contribute to the Canadian economy through its repair, refit and maintenance activities at its Victoria Shipyards and Vancouver Drydock locations

Economic contribution of Repair, Refit and Maintenance activities in Canada, direct, indirect and induced, from 2023 to 2035,









For every \$1 spent on repair, refit and maintenance activities, Seaspan is projected to add \$1.24 to Canadian GDP, when direct, indirect, and induced impacts are included.

For every \$1 spent on repair, refit and maintenance activities, Seaspan is projected to add \$2.29 to Canadian Output, when direct, indirect, and induced impacts are included.

Summary of Seaspan Shipyards’ Projected Economic Contribution to Canada¹

Accounting for direct, indirect and induced contribution, Seaspan’s NSS-related shipbuilding activities together with repair, refit and maintenance activities will contribute \$20.7B to GDP, 10,938 annual jobs and \$5.9B in government revenues in Canada over the 2023-2035_f period

Summary of direct, indirect and induced economic contribution to Canada

		NSS-related Shipbuilding Activities ² (2023-2035 _f)				Repair, Refit and Maintenance Activities ² (2023-2035 _f)				Total Economic Contribution
		Direct ¹	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
	Expenditure	\$14.1B				\$3.4B				
	Gross Output³	\$14.8B in Output	\$16.2B in Output	\$5.6B in Output	\$36.6B in Output	\$3.2B in Output	\$3.4B in Output	\$1.2B in Output	\$7.8B in Output	\$44.4B in Output
	GDP	\$5.3B in GDP	\$7.9B in GDP	\$3.3B in GDP	\$16.5B in GDP	\$1.9B in GDP	\$1.6B in GDP	\$728M in GDP	\$4.2B in GDP	\$20.7B in GDP
	Labour Income	\$4.0B in labour income	\$5.1B in labour income	\$1.5B in labour income	\$10.6B in labour income	\$1.3B in labour income	\$959M in labour income	\$339M in labour income	\$2.6B in labour income	\$13.2B in labour income
	Employment⁴	3,281 jobs created or sustained annually	4,112 jobs created or sustained annually	1,648 jobs created or sustained annually	9,042 jobs created or sustained annually	1,332 jobs created or sustained annually	351 jobs created or sustained annually	212 jobs created or sustained annually	1,896 jobs created or sustained annually	10,938 jobs created or sustained annually
	Gov’t Revenues	\$1.2B in federal, provincial and municipal	\$1.7B in federal, provincial and municipal taxes	\$1.3B in federal, provincial and municipal taxes	\$4.3B in federal, provincial and municipal taxes	\$959M in federal, provincial and municipal taxes	\$358M in federal, provincial and municipal taxes	\$287M in federal, provincial and municipal taxes	\$1.6B in federal, provincial and municipal taxes	\$5.9B in federal, provincial and municipal taxes

1. The reported projections are nominal calculated using 2019 multipliers; they have not been adjusted for inflation

2. All activities in the Vancouver Shipyard are assumed to be NSS program related.







3. Gross output (GO) is the value of the goods and services produced by the Canadian economy. It is principally measured using industry sales or receipts, including sales to final users (GDP) and sales to other industries (intermediate inputs). GDP is defined as the total unduplicated value of goods and services produced in the economic territory of a country or a region during a given period.

4. Employment estimates are based on the latest available multipliers. The dollar value of each job created or sustained may vary over the 12-year period.

Summary of Seaspan Shipyards’ Projected Economic Contribution to British Columbia¹

Accounting for direct, indirect and induced contribution, Seaspan’s NSS-related shipbuilding activities together with repair, refit and maintenance activities will contribute \$15.6B to GDP, 8,315 annual jobs and \$2.1B in government revenues in BC over the 2023-2035_f period

Summary of direct, indirect and induced economic contribution to British Columbia

		NSS-related Shipbuilding Activities ² (2023-2035 _f)				Repair, Refit and Maintenance Activities ² (2023-2035 _f)				Total Economic Contribution
		Direct ¹	Indirect	Induced	Total	Direct	Indirect	Induced	Total	
	Expenditure	\$8.7B				\$2.7B				
	Gross Output ³	\$14.8B in Output	\$7.9B in Output	\$3.6B in Output	\$26.3B in Output	\$3.2B in Output	\$1.9B in Output	\$951M in Output	\$6.1B in Output	\$32.4B in Output
	GDP	\$5.3B in GDP	\$4.6B in GDP	\$2.2B in GDP	\$12.1B in GDP	\$1.9B in GDP	\$981M in GDP	\$590M in GDP	\$3.5B in GDP	\$15.6B in GDP
	Labour Income	\$4.0B in labour income	\$3.1B in labour income	\$937M in labour income	\$8.0B in labour income	\$1.3B in labour income	\$597M in labour income	\$265M in labour income	\$2.2B in labour income	\$10.2B in labour income
	Employment ⁴	3,281 jobs created or sustained annually	2,251 jobs created or sustained annually	1,043 jobs created or sustained annually	6,574 jobs created or sustained annually	1,332 jobs created or sustained annually	240 jobs created or sustained annually	168 jobs created or sustained annually	1,741 jobs created or sustained annually	8,315 jobs created or sustained annually
	Gov't Revenues ⁵	\$492M in provincial and municipal taxes	\$473M in provincial and municipal taxes	\$498M in provincial and municipal taxes	\$1.5B in provincial and municipal taxes	\$429M in provincial and municipal taxes	\$98M in provincial and municipal taxes	\$128M in provincial and municipal taxes	\$655M in provincial and municipal taxes	\$2.1B in provincial and municipal taxes

1. The reported projections are nominal calculated using 2019 multipliers; they have not been adjusted for inflation

2. All activities in the Vancouver Shipyard are assumed to be NSS program related.

3. Gross output (GO) is the value of the goods and services produced by the Canadian economy. It is principally measured using industry sales or receipts, including sales to final users (GDP) and sales to other industries (intermediate inputs). GDP is defined as the total unduplicated value of goods and services produced in the economic territory of a country or a region during a given period.



4. Employment estimates are based on the latest available multipliers. The dollar value of each job created or sustained may vary over the 12-year period.

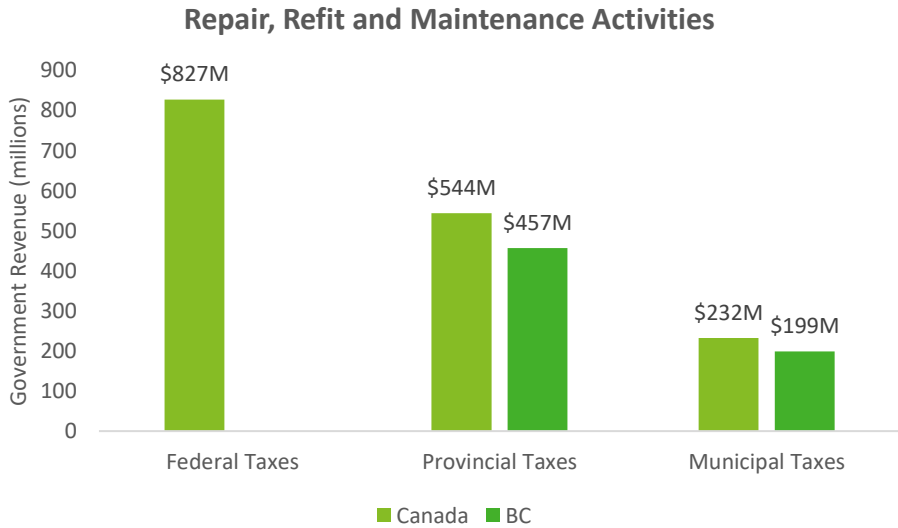
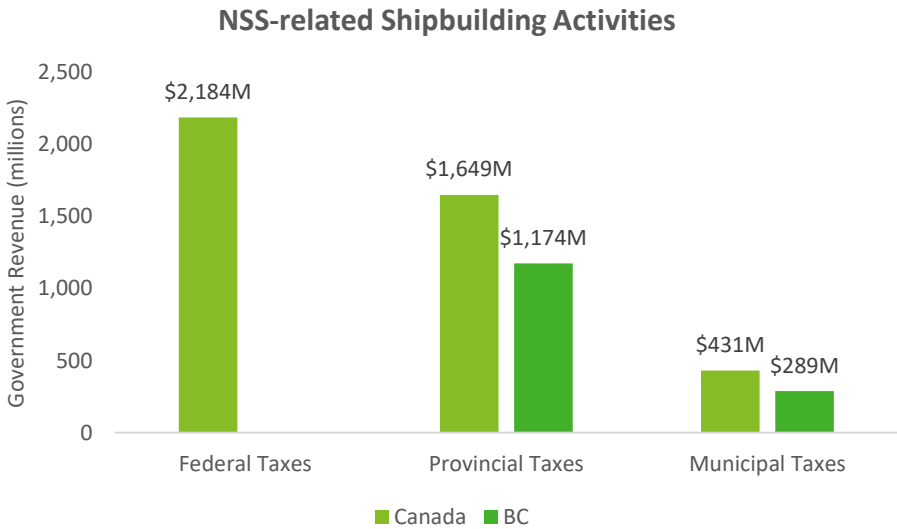
5. Federal revenues excluded from provincial calculations but are included in the national level calculations.

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Disaggregation of Taxes by Geography and Levels of Government

Summary of government revenues by region and government

		NSS-related Shipbuilding Activities (2023-2035 _t)				Repair, Refit and Maintenance Activities (2023-2035 _t)				Total Government Revenue
		Federal	Provincial	Municipal	Total	Federal	Provincial	Municipal	Total	
	Canada-level	\$2.2B	\$1.6B	\$431M	\$4.3B	\$827M	\$544M	\$232M	\$1.6B	\$5.9B
	BC level		\$1.2B	\$289M	\$1.5B		\$457M	\$199M	\$655M	\$2.1B



Introduction



About this Study

Background and Objective

The shipbuilding, repair and overhaul and marine industry in Canada has a long history spanning from the early 19th century sailing schooners to modern icebreakers, science vessels and combat ships. In between is a diverse group of vessels that have been designed and built in this country to serve Canada's expansive coastline and its network of coastal marine communities. As the shipbuilding industry shifts toward higher value and more advanced segments of the market, it is imperative for the industry to innovate and invest in modern technology and manufacturing processes.

In 2010, the federal government announced the National Shipbuilding Strategy ("NSS") program that aims to facilitate investments into Canada's marine industry.¹ In particular, the government established a long-term strategic partnership for the construction of large non-combat vessels with Seaspan's Vancouver Shipyards in British Columbia ("BC"). As of the writing of this report, this includes the construction of three offshore fisheries science vessels, one offshore oceanographic science vessel, two joint support ships, one polar icebreaker, and 16 multi-purpose vessels.

Deloitte was engaged by Seaspan Shipyards to update the 2021 "Socio-economic Contribution Study of Seaspan Shipyards Operations and NSS-related Activities" by adding 1 additional year to the analysis (2022) and estimating the economic contributions associated with the repair, refit and maintenance activities undertaken at the Vancouver Drydock and Victoria Shipyards (in addition to the contributions of the NSS-related activities at Vancouver Shipyards).²

1. This program was originally called the National Shipbuilding Procurement Strategy ("NSPS") and was later renamed to the NSS.

2. The scope of this study is different from the 2021 study, as it includes impacts on the rest of Canada by provinces as well as localized impacts in North Vancouver.

Summary of Approach

This study uses an input-output (I-O) methodology to measure the economic contribution of Seaspan Shipyards. This methodology traces how the expenditures associated with Seaspan Shipyards operations and capital investments ripple through the Canadian economy and result in **direct** economic contribution, as well as **indirect** contribution arising from creating demand for goods and services provided by suppliers to Seaspan Shipyards throughout the provinces. The **induced** economic contribution arising from the spending of salaries and wages earned as a result of Seaspan Shipyards activities are also estimated and presented separately in the report.

While the scope of this study is limited to estimation of economic contribution, Seaspan Shipyards enables important structuring and socio-economic benefits such as development of human capital and skills and national and regional supply chains, incubation and support for small and medium enterprises, and enablement of innovation and technology adoption. For details on these socio-economic benefits and example case studies, please refer to the 2021 Socio-economic Contribution Study of Seaspan Shipyards Operations and NSS-related Activities.



About Seaspan Shipyards

Seaspan Shipyards, including Vancouver Shipyards, Vancouver Drydock, and Victoria Shipyards, is an important contributor to Canada's marine industry and economy

Seaspan Shipyards specializes in vessel design, new construction, overhaul, repair, conversion, alteration, life-cycle maintenance, and refurbishment of all types and sizes of vessels including cruise ships, deep-sea vessels, containerships, ferries, yachts, barges, tugs, fish boats, Coast Guard, Navy, research and Arctic vessels. An overview of the operational activities occurring at each shipyard is provided below:

- **Vancouver Shipyards** – Services include the design, construction, maintenance and repair of all types of vessels. Seaspan Shipyards NSS-related work at Vancouver Shipyards comprises a large share of these operational activities.
- **Vancouver Drydock** – Provides a complete range of services for maintenance and repairs of all types of vessels including barges, fish boats, ferries, and small/medium size cruise ships.
- **Victoria Shipyards** – Services include drydock and repair of all types of vessels, including submarine maintenance and sustainment support (under the Victoria In-Service Support Contract (VISSC)), cruise ships, fishing vessels, ferries, barges, tankers and naval vessels. Victoria Shipyards performs a wide range of repairs up to and including complete vessel conversions.



Seaspan Shipyards' Activities associated with the National Shipbuilding Strategy

Overview of the NSS Program

In 2010, the federal government established the National Shipbuilding Strategy ("NSS") program as a commitment to support Canada's marine industry and build vessels in Canada. The NSS program aims to deliver economic benefits to Canadians through the revitalization of Canadian shipyards and equipping the Royal Canadian Navy and the Canadian Coast Guard with much-needed vessels.

The NSS program enables the government and the shipyards to make significant investments in Canada's marine industry as well as bring predictability to federal vessel procurement.

Seaspan Shipyards Activities Associated with the NSS Program

Seaspan's Vancouver Shipyards is Canada's long-term strategic shipbuilding partner for the construction of large, non-combat vessels for the Royal Canadian Navy and Canadian Coast Guard. Seaspan Shipyards activities related to the NSS program are based primarily out of Vancouver Shipyards and include the construction of advanced research vessels, supply ships, icebreakers, and multi-purpose vessels that will support Canada's defence, security, and scientific requirements for generations to come.

The economic contribution estimates for Seaspan's NSS program-related activities are based on operations and investments of approximately **\$3.4B** incurred between 2012 and 2022f.

Examples of NSS-related Projects Occurring at Vancouver Shipyards

Examples of projects over the time period include the NSS-related projects occurring at Vancouver Shipyards including the construction of three offshore fisheries science vessels, one offshore oceanographic science vessel, one polar icebreaker, two joint support ships, and 16 multi-purpose vessels.



Offshore Fisheries Science Vessel

A 63m fisheries research vessel that is now deployed on Canada's east and west coasts to increase our understanding of the health of fish stocks and their ocean environment.



Offshore Oceanographic Science Vessel

An 88m oceanographic research vessel that will be deployed on Canada's east coast to increase our understanding of the ocean's physical environment, including the impact of climate change.



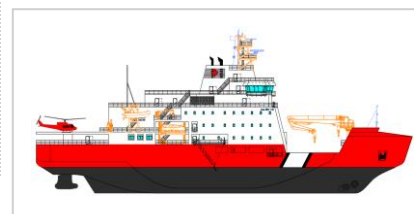
Polar Icebreaker

A 158m vessel that will be the flagship of the Canadian Coast Guard fleet and critical to patrolling and protecting Canada's coastline, able to operate farther north, in more difficult ice conditions and for longer period than any icebreaker Canada has.



Joint Support Ship

A 174m naval support ship, deployable around the world, in any naval theatre or threat environment, to provide fuel, ammunition, provisions, and other material to Canada's Navy.



Multi-Purpose Vessel

A 99.9m modular capability vessel that will support multiple Canadian Coast Guard missions, including icebreaking, search and rescue, emergency response, security and protection, and the maintenance of Canada's marine navigation system.

Seaspan Shipyards' Repair, Refit and Maintenance Activities

Seaspan's Victoria Shipyards and Vancouver Drydock undertake a range of services for repair, refit and maintenance of all types of vessels as well as supporting new ship construction

Overview of Repair, Refit and Maintenance

Seaspan Shipyards specializes in new construction, conversion, refit, repair, life-cycle maintenance and refurbishment projects on naval and commercial vessels including submarine maintenance and sustainment support, cruise ship conversions, work on deep sea vessels and containerships.

The Victoria Shipyards and Vancouver Drydock primarily provide repair, refit and maintenance work for all types of vessels including submarines, barges, fish boats, ferries, and small/medium size cruise ships, tankers and naval vessels.

Over the life of the Victoria In-Service Support Contract (VISSC), the Victoria Shipyards' team has leveraged both its Canadian expertise and global experience in submarine sustainment to develop unparalleled Victoria-Class Submarine platform knowledge and a strong Canadian supply chain.

The economic contribution estimates for Seaspan's repair, refit and maintenance activities are based on operations and investments incurred between 2012 and 2022_f. Based on the data provided by Seaspan Shipyards, the repair, refit and maintenance-related operating and capital expenditures totaled **\$1.4B** over the 2012-2022_f period.

The majority of repair, refit and maintenance work performed by Seaspan is attributed to commercial and naval vessels, with a smaller portion related to the NSS program. This study estimates the overall economic contribution of all repair, refit and maintenance activities and does not attempt to attribute them to the NSS program specifically.



Economic Contribution of Seaspans Shipyards Activities



NSS-related Shipbuilding Operating and Capital Expenditures – Vancouver Shipyards

From 2012 to 2022_p, Seaspan Shipyards spent \$3.2B on NSS-related shipbuilding operations, an additional \$214M on capital investments, and directly created/sustained 1931 jobs annually¹

Overview of Vancouver Shipyards

- 40-acre custom-built facility located on the North Shore of the Burrard Inlet
- Operational activities include the design, construction, maintenance and repair of all types of vessels
- The majority of shipbuilding activity is associated with the NSS program
- Majority of expenditure is allocated to services (40%), salaries and wages (22%), and materials (21%)



From 2012 to 2022_p, Vancouver Shipyards NSS-related operations incurred total operating expenditures¹ of

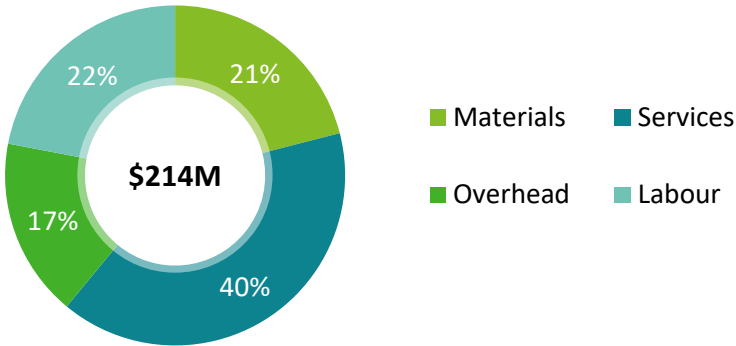
\$3.2B

From 2012 to 2022_p, total capital expenditures amounted to

\$214M

1,931 jobs were created/sustained directly in 2022

Breakdown of NSS-related Capital Expenditures (2012-2022_p)



1. Operational and capital expenditure data provided by Seaspan Shipyards. NSS-related expenditure data was provided separately for each year, then deflated to 2019 dollars and summed up across years to produce estimates of cumulative impacts. Please refer to appendix for additional methodology details.

2. Excludes employer's social contributions.

3. Average weekly earnings obtained from Statistics Canada Table: 14-10-0204-01 for ship and boat building industry.

Economic Contribution of NSS-related Shipbuilding Activities to Canada

Over the 2012-2022_f period, Seaspan’s NSS program-related shipbuilding expenditures contributed \$3.9 billion to Canada’s GDP, sustained 5,321 annual jobs, and generated \$967 million in government revenues

Over the 2012-2022_f period, NSS program-related operations and capital investment expenditures at Vancouver Shipyards totaled **\$3.4B** (real 2019 dollars).¹

Accounting for the direct, indirect and induced economic contribution, it is estimated that Vancouver Shipyards NSS program-related operations and capital investment activities contributed **\$8.6B** to Canada’s gross output, and **\$3.9B** to Canada’s GDP over the 2012-2022_f period. Of the total GDP contribution, approximately **\$2.5B** was contribution to labour income. **5,321** annual jobs were created/sustained over the 11-year period.

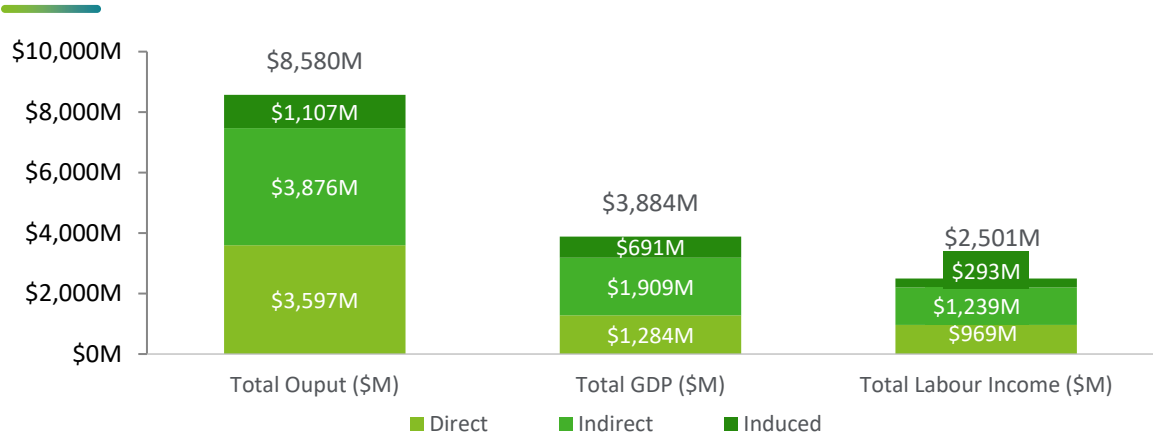
The results indicate that:

- Approximately **\$1.15** of economic activity (in terms of GDP) was added to the Canadian economy for every dollar spent on NSS-related activities
- Approximately **9 jobs** were created/sustained in Canada for every million dollars expended on NSS-related activities

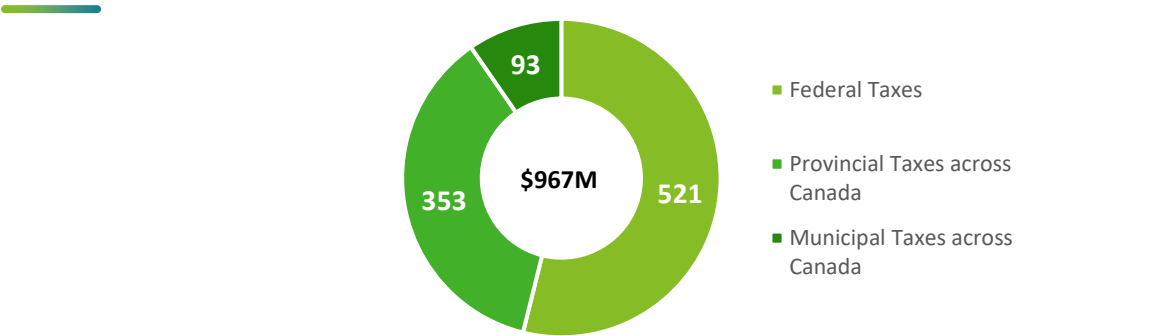
It is also estimated that the economic activity stimulated by NSS-related operations and capital investments generated **\$521M** in federal taxes, **\$353M** in provincial taxes, and **\$93M** in municipal taxes over the 2012-2022_f period. These government revenues include taxes on products and production, corporate income taxes, and personal income taxes.

1. NSS-related expenditures were provided separately for each year, then deflated to 2019 dollars and summed up across years to produce estimates of cumulative impacts. Please refer to appendix for additional methodology details.

Total direct, indirect and induced contribution of Seaspan Shipyards NSS-related operations and capital investment activities to Canada, 2012-2022_f



Total direct, indirect and induced contribution to government revenues from Seaspan Shipyards NSS-related operations and capital investment activities to Canada, 2012-2022_f² (\$M)



1. Note: The exhibit above for government revenue contributions includes direct, indirect and induced impacts.

Repair, Refit and Maintenance Operating and Capital Expenditures

Over the 2012-2022_f period, Seaspan Shipyards has spent \$1.4B on repair, refit and maintenance operations, an additional \$48M on capital investments, and directly created or sustained 1,396 jobs annually¹

Overview of Victoria Shipyards

- Operates at the federally owned Esquimalt Graving Dock, the largest solid bottom commercial drydock on the West Coast of the Americas
- Offers drydock and repair for all types of vessels, including submarines, cruise ships, fishing vessels, ferries, barges, tankers and naval vessels, performing a wide range of repairs up to and including complete vessel conversions.

Overview of Vancouver Drydock

- Full-service shipyard located on the north shore of the sheltered deep-water Port of Vancouver
- Provides a complete range of services for maintenance and repairs of all types of vessels including barges, fish boats, ferries, and small/medium size cruise ships.

The majority of repair, refit and maintenance work performed by Seaspan is attributed to commercial and naval vessels, with a smaller portion related to the NSS program. This study estimates the overall economic contribution of all repair, refit and maintenance activities and does not attempt to attribute them to the NSS program specifically.

1. Operational and capital expenditure data provided by Seaspan Shipyards for each year, then deflated to 2019 dollars and summed up across years to produce estimates of cumulative impacts. Please refer to appendix for additional methodology details.
2. Excludes employer’s social contributions

From 2012 to 2022_f, Seaspan Shipyards repair, refit and maintenance operations incurred total operating expenditures¹ of

\$1.4B

From 2012 to 2022_f, total capital expenditures¹ amounted to

\$48M

1,396 jobs were created/sustained directly in 2022

Breakdown of Repair, Refit and Maintenance Capital Expenditures (2012-2022_f)



Economic Contribution of Seaspan Shipyards’ Repair, Refit and Maintenance Activities to Canada

Over the 2012-2022_f period, Seaspan’s repair, refit and maintenance activities contributed \$1.8 billion to Canada’s GDP, created or sustained 2,009 annual jobs, and generated \$461 million in government revenues

Over the 2012-2022_f period, operations and capital investment expenditures at Vancouver Shipyards and Vancouver Drydock totaled **\$1.4B**.¹

Accounting for the direct, indirect and induced economic contribution, it is estimated that Victoria Shipyards and Vancouver Drydock operations and capital investment activities contributed **\$2.9B** to Canada’s gross output, and **\$1.8B** to Canada’s GDP over the 2012-2022_f period. Of the total GDP contribution, approximately **\$1.3B** was contribution to labour income. **2,009** annual jobs were created/sustained over the 11-year period.

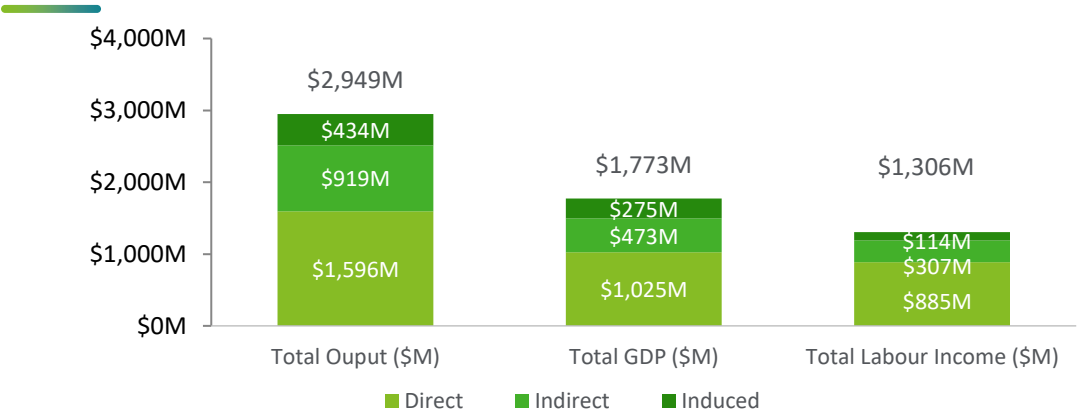
The results indicate that:

- Approximately **\$1.22** of economic activity (in terms of GDP) was added to the Canadian economy for every dollar spent on activities
- Approximately **12 jobs**⁴ were created/sustained in Canada for every million dollars expended on activities

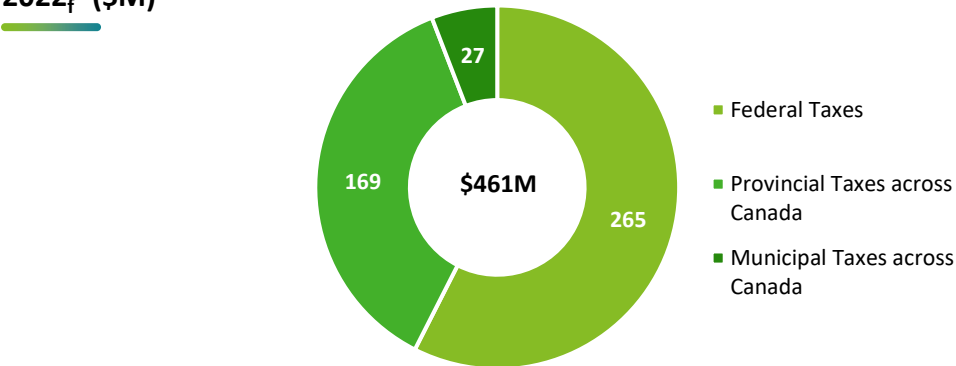
It is also estimated that the economic activity stimulated by operations and capital investments generated **\$265M** in federal taxes, **\$169M** in provincial taxes, and **\$27M** in municipal taxes over the 2012-2022_f period. These government revenues include taxes on products and production, corporate income taxes, and personal income taxes.

1. Expenditures were provided separately for each year, then deflated to 2019 dollars and summed up across years to produce estimates of cumulative impacts. Please refer to appendix for additional methodology details.
2. Total labour income includes employer’s social contribution.
3. Our estimated figure for jobs created/sustained is greater in comparison to similar estimates in other studies calculating Shipbuilding industry’s multipliers. For instance, according to Statistics Canada’s Canada-level multipliers for shipbuilding (2019), the jobs multiplier for direct, indirect and induced contributions is 9.5 per 1 million dollars.

Total contribution of Seaspan Shipyards repair, refit and maintenance operations and capital investment activities to Canada, 2012-2022_f



Total direct, indirect and induced contribution to government revenues from repair, refit and maintenance operations and capital investment activities to Canada, 2012-2022_f,² (\$M)



1. Note: The exhibit above for government revenue contributions includes direct, indirect and impacts.

Seaspan Shipyards' Impact on National and Regional Supply Chains



National and Regional Supply Chains

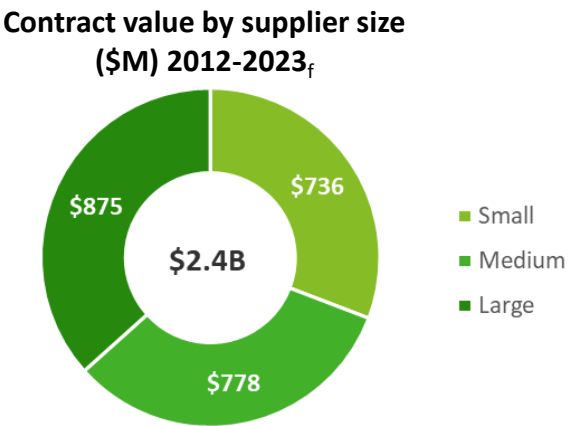
A supply chain is a network through which a company turns raw materials into finished goods and services for the customer. The detailed supplier data provided by Seaspan Shipyards and the *indirect* (i.e., supplier-related) economic contribution estimated in this report reveal a vast network of suppliers and associated benefits to manufacturing, engineering, trades and specialized marine companies across the country. Seaspan Shipyards NSS related supply chain can enhance the sophistication and competitiveness of the Canadian marine industry as a whole.

Developing a national supply chain for NSS program

From 2012 to 2023_f, Seaspan Shipyards NSS-related expenditure through its suppliers totaled \$2.4B¹. This expenditure was spread across a network of over 710 Canadian suppliers. Of these, over 490 are categorized as small and medium-sized companies. A notable feature of Seaspan Shipyards supply chain is that companies of different sizes work together to help deliver the NSS program. When measured by contract value, the distribution is as follows:

- Small companies accounted for \$735.5M of all contract value (31%);
- Medium companies accounted for \$778.0M of all contract value (32%); and
- Large companies accounted for \$875.4M of all contract value (37%).

Internal and external consultations undertaken as part of this study noted that Seaspan Shipyards approach to procurement supported the integration of suppliers from across the country and enabled them to deliver products far from their home location. This perception appears to be corroborated by the following supplier data provided by Seaspan Shipyards.



Between 2012-2023_f, approximately 71% of Seaspan Shipyards NSS program suppliers were based in British Columbia.

- 137 of whom are based in Vancouver (inclusive of North Vancouver and West Vancouver); and
- 62 are based in Victoria.

Between 2012-2022_f, 28% of Seaspan Shipyards NSS program suppliers were based in other parts of Canada, including:

- 18% in Quebec and Ontario;
- 8% in the Prairie Provinces, with the majority located in Alberta; and
- 2% in Atlantic Canada

To support the development of a national supply chain Seaspan Shipyards executes industry events across the country, where it proactively presents to existing and potential suppliers. During these presentations, Seaspan Shipyards requirements and bidding process are explained –thereby helping SMEs understand opportunities with the company, regardless of physical location. These events are also opportunities to create relationships across Canada’s supplier community.

Note: Company size categorization provided by Seaspan Shipyards. Seaspan Shipyards supported 288 additional companies, for which size information was not available. These companies accounted for 21% of all contract value. Estimations of the distribution of Seaspan Shipyards supply chain by company sizes may vary depending on methodology selected to conduct assessment.





National and Regional Supply Chains

Impact on suppliers from Seaspan Shipyards operations

- Seaspan Shipyards national and regional supply chains are an important part of the company’s overall economic contribution. Seaspan Shipyards expenditures on suppliers are a key element of the total economic contribution of the NSS program.

Benefits from partnerships with suppliers

- By developing lasting and strategic partnerships with their suppliers, Seaspan Shipyards brings a number of benefits to both suppliers and the Canadian shipbuilding industry as a whole:

-  **Growth and maturation** – A partnership with Seaspan Shipyards can accelerate the maturation and growth of suppliers as they are required to meet leading shipbuilding industry practices and standards and have the opportunity to learn from working with Seaspan Shipyards directly. For example, Seaspan Shipyards Supplier Relationship Management Program requires that all suppliers and contractors are pre-qualified based on their demonstrated ability to manage the health and safety, environmental and quality aspects of the materials and/or contracted work, which is in addition to satisfying the technical and commercial requirements applying to the suppliers scope of work.
-  **Support for business investment** – Contracts with Seaspan Shipyards provide suppliers with a vital source of stable revenues that can be reinvested into R&D, technology and process improvements, skills development, training, and investments in new infrastructure. Furthermore, Seaspan Shipyards sometimes invests in suppliers directly.
-  **Ability to access and engage with leading marine technology** – Working with Seaspan Shipyards allows suppliers to learn and leverage innovative shipbuilding approaches, technologies and tools that they may otherwise be unable to access. Additionally, by sourcing from firms that do not exclusively specialize in the marine industry, Seaspan Shipyards helps integrate best practices, technologies and solutions from other industries into the marine industry. This approach creates conditions hospitable to innovation and the deployment of new approaches to solve long standing engineering challenges in the marine industry.
-  **Reputational gains** – The qualification from contracting with an established company such as Seaspan, may enable companies to pursue other business opportunities within the Canadian marine industry and in international markets.