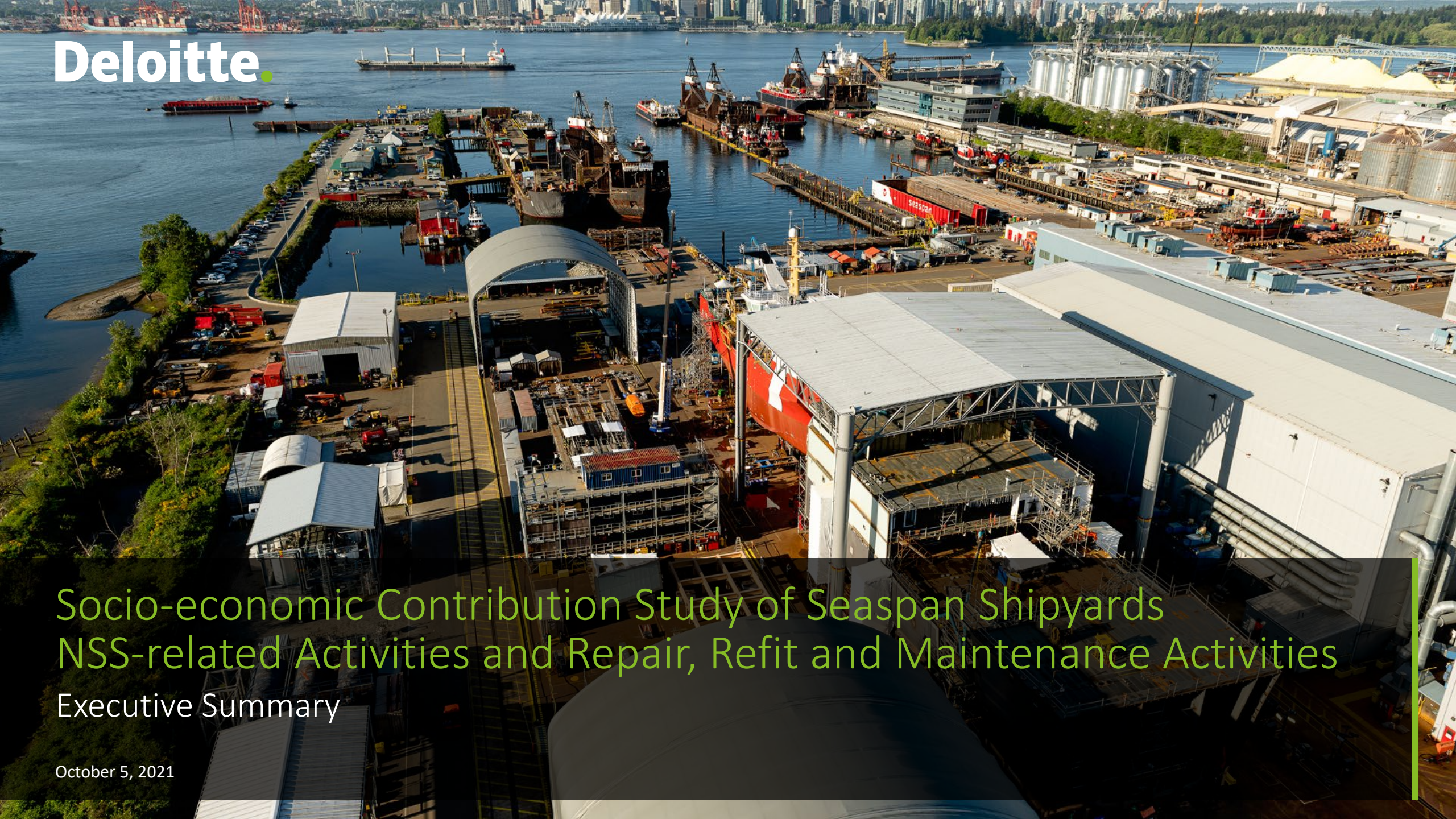

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Socio-economic Contribution Study of Seaspan Shipyards NSS-related Activities and Repair, Refit and Maintenance Activities

Executive Summary

October 5, 2021

Note to Reader

This executive summary has been provided to Seaspan Shipyards ("Seaspan") for the purpose of updating and extending the economic contribution analysis completed by Deloitte in 2020. It is intended to provide estimates of the economic contribution to Canada and British Columbia 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 – 2021 period.

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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The analysis is provided as of October 5, 2021, 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, 2021 (forecasted for 2021). 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 by Chief Economist Craig Alexander

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 $2.6 billion to Canadian GDP over the past 10 years from Seaspan's shipbuilding activities under the NSS, supporting approximately 2,270 jobs on average each year and contributing $485 million to federal, provincial and municipal government revenues. Accounting for the economic impact of the spending by workers paid by Seaspan and its suppliers, the GDP contribution rises to $3.3 billion over the past 10 years. Seaspan's repair, refit and maintenance activities are estimated to have contributed an additional $1.4B to Canadian GDP over the past 10 years, sustained 1,380 jobs on average each year and added $273M to government revenue over the period. 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.

Why?

First, Canada needs ships that are tailored to the requirements of the country, such as vessels designed and built to operate in the Arctic, to protect the nation's sovereignty and to meet its scientific and civil needs. For example, the ships being constructed by Seaspan under the National Shipbuilding Strategy integrate advanced marine technologies and production practices and offer advanced maritime capabilities – tailored to the Canadian climate and requirements – to both the Canadian Coast Guard and the Royal Canadian Navy.

Continues…

Craig Alexander, Chief Economist and Executive Advisor, Deloitte Canada

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Foreword by Chief Economist Craig Alexander

Second, shipbuilding falls into the class of advanced manufacturing, characterized by the use of complex technology and a high degree of innovation, where Canada has an opportunity to be globally competitive. Continued innovation in this sector can add to Canadian productivity and feed through domestic supply chains to boost innovation in other Canadian industries.

Third, the jobs in shipbuilding are highly skilled and well paid, which is good for workers, the economy and society. Moreover, the skills required are often tailored to the work in the industry. A welder working on a ship needs to do welds differently than on the structure of a building. This specialized skill set contributes to compensation, but it also creates a challenge for the industry. When there are lean times, the loss of shipbuilding jobs can reduce the capacity of the industry to build ships in the future. Once capacity, skills and knowledge are lost, they are extremely hard and costly to reestablish. Canadian governments need to continue thinking about shipbuilding as a strategic industry and focus on supporting the transition of the industry to service the international market beyond the NSS program.

An argument is sometimes made that it may be cheaper to buy ships from abroad. This view misses the broader societal and economic benefits of supporting a domestic shipbuilding industry. In the short term, such logic does not account for the value of income and innovation that is generated domestically across the vast supply chain involved in shipbuilding activity. (Seaspan, for example, has more than 660 Canadian suppliers, more than half of which are small and medium-size enterprises.) Nor does this view capture the high-skill / high-paying employment opportunities for Canadians, who consequently spend their earnings in our domestic economy. Over a long-term horizon, a short-term focus on costs alone misses the economic opportunity for Canada to leverage public investments that have already been made to create an internationally competitive, high-value and sustainable industry as well as to provide the strategic benefit of advancing our nation's capability in a sector key to our sovereignty and defence.

The bottom line is that domestic shipbuilding is a sophisticated, highly technical industry that plays an important part in the trend towards higher value-added advanced manufacturing. It creates good paying jobs for workers that can contribute to inclusive economic growth. And, the capability of building and repairing ships is a precious Canadian tradition that, once lost, would be exceptionally hard to re-build.

Craig Alexander
Chief Economist
Deloitte LLP (Canada)

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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 2020 "Socio-economic Contribution Study of Seaspan Shipyards Operations and NSS-related Activities" by adding 2 additional years to the analysis (2020 and 2021) 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]

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 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. 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 2020 Socio-economic Contribution Study of Seaspan Shipyards Operations and NSS-related Activities.

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 2020 study, as it includes an assessment of repair, refit and maintenance activities beyond NSS-related shipbuilding activities.

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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. Services also include supporting new ship construction.
- **Victoria Shipyards** – Services include drydock and repair of all types of vessels, including 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 as well as supporting new ship construction.

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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 **$2.8B** incurred between 2012 and 2021_f.

Examples of NSS-related Projects Occurring at Vancouver Shipyards

As of the writing of this report, the NSS-related projects occurring at Vancouver Shipyards include 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

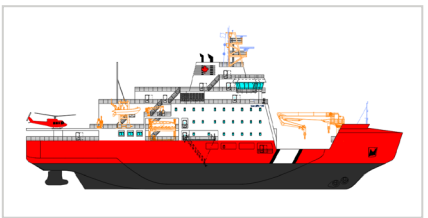
An 88m oceanographic research vessel that will be deployed on Canada's east coast to increase our understanding of the ocean's physical environment, including the impact of climate change.

Polar Icebreaker

A 150m 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 that 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.

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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 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 barges, fish boats, ferries, and small/medium size cruise ships, tankers and naval vessels.

The economic contribution estimates for Seaspan's repair, refit and maintenance activities are based on operations and investments incurred between 2012 and 2021_f. Based on the data provided by Seaspan Shipyards, the repair, refit and maintenance-related operating and capital expenditures totaled **$1.3B** over the 2012-$2021_f$ 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.

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Seaspan Shipyards Today

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

3 full-service shipyards in Vancouver and Victoria, British Columbia

1st vessel delivered and **1st** full class of large vessels delivered under the NSS

1st LNG conversion in North America

1 ship per week commercial repair & overhaul

~ 2,700 employees

100+ years of history as pioneer of shipbuilding and ship repair on Canada’s west coast

Leadership team with **400+** years of experience & **450** ships delivered and serviced

$1.8B in contracts awarded to **660+** Canadian suppliers

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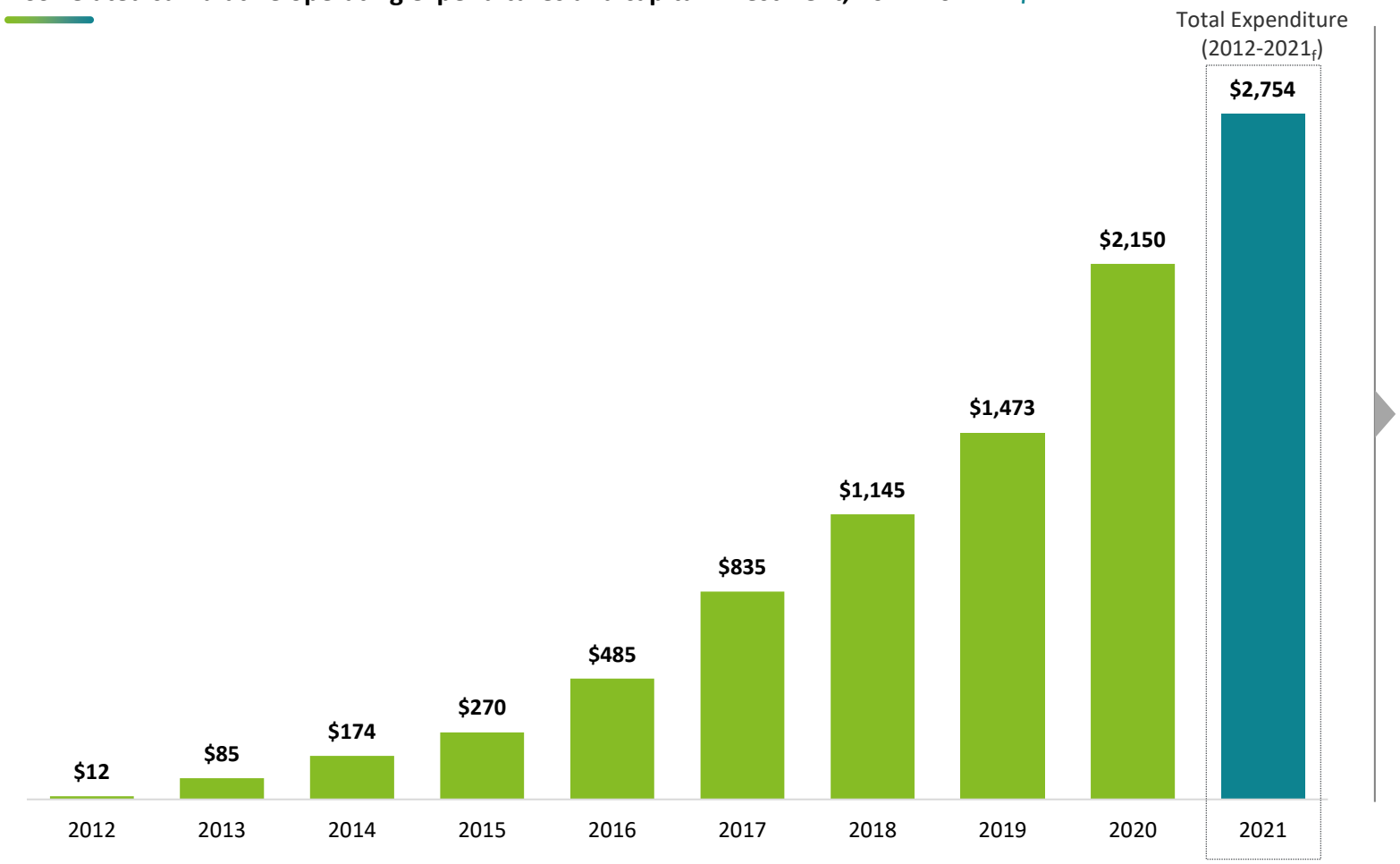
Seaspan Shipyards' NSS Program-Related Investments

Since the inception of the National Shipbuilding Strategy, Seaspan has spent over $2.8B not only on shipbuilding operations, but also on modernizing shipyard infrastructure, integrating advanced shipbuilding technologies, and developing skilled workers

NSS-related cumulative operating expenditures and capital investment, 2012-2021 in $M



$ 2.8B
Spent to date

The NSS program-related shipbuilding investments include $2.5B in operating expenditures and over $226M in capital investments toward shipyard modernization

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 Program-Related 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 and indirect, from 2012 to 2021$_f$

$ 2.6B
GDP contribution

$ 1.8B
Labour Income

$ 484M
Gov't Revenues

For every **$1 spent** on NSS-related activities, Seaspan added $0.95 directly and indirectly to Canadian GDP, and approximately **$1.2** when induced impacts are included.

Induced impact refers to the spending of wages and salaries, such as the purchase of household goods and services by employees.

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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

Economic contribution of Repair, Refit and Maintenance activities in Canada, direct and indirect, from 2012 to 2021_f

$ 1.4B
GDP contribution

$ 1.1B
Labour Income

$ 237M
Gov't Revenues

For every **$1 spent** on repair, refit and maintenance activities, Seaspan added $1.1 directly and indirectly to Canadian GDP, and approximately **$1.3** when induced impacts are included.

Induced impact refers to the spending of wages and salaries, such as the purchase of household goods and services by employees.

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Direct, Indirect and Induced Economic Contribution Details – Canada

In addition to direct and indirect economic contributions, this study also estimates the "induced" economic contributions associated with spending of wages and salaries by employees of Seaspan and suppliers; all levels of contributions have been detailed below

Summary of direct, indirect, and induced economic contribution to Canada

	NSS-related Shipbuilding Activities (2012-2021$_f$)			Repair, Refit and Maintenance Activities (2012-2021$_f$)		
	Direct[1]	**Indirect[2]**	**Induced[3]**	**Direct**	**Indirect**	**Induced**
Expenditure	**$2.8B**			**$1.3B**		
GDP	**$939M** in GDP	**$1.7B** in GDP	**$627M** in GDP	**$929M** in GDP	**$471M** in GDP	**$245M** in GDP
Labour Income	**$723M** in labour income	**$1.1B** in labour income	**$299M** in labour income	**$784M** in labour income	**$305M** in labour income	**$122M** in labour income
Employment	**785** jobs created or sustained annually on average over 10-year period	**1,492** jobs created or sustained annually on average over 10-year period	**597** jobs created or sustained annually on average over 10-year period	**966** jobs created or sustained annually on average over 10-year period	**416** jobs created or sustained annually on average over 10-year period	**240** jobs created or sustained annually on average over 10-year period
Gov't Revenues	**$128M** in federal, provincial and municipal taxes	**$357M** in federal, provincial and municipal taxes	**$321M** in federal, provincial and municipal taxes	**$140M** in federal, provincial and municipal taxes	**$98M** in federal, provincial and municipal taxes	**$183M** in federal, provincial and municipal taxes

1. Direct impact captures the economic contribution generated by Seaspan's direct spending on capital investments and operating expenditures e.g. salaries and wages paid to Seaspan Shipyards employees, and economic value-added from Seaspan Shipyards own operations and investments
2. Indirect impact captures the economic contribution of suppliers to Seaspan Shipyards due to demand for goods and services arising from Seaspan Shipyards activities e.g. economic activity stimulated in the manufacturing, wholesale trade, transportation and professional service sectors among others
3. Induced economic contributions are included in the detailed table for completeness but have been excluded from the total contributions reported

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Direct, Indirect and Induced Economic Contribution Details – British Columbia

In addition to direct and indirect economic contributions, this study also estimates the "induced" economic contributions associated with spending of wages and salaries by employees of Seaspan and suppliers; all levels of contributions have been detailed below

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

	NSS-related Shipbuilding Activities (2012-2021$_f$)			Repair, Refit and Maintenance Activities (2012-2021$_f$)		
	Direct[1]	**Indirect[2]**	**Induced[3]**	**Direct**	**Indirect**	**Induced**
Expenditure	**$2.8B**			**$1.3B**		
GDP	**$942M** in GDP[5]	**$1.5B** in GDP	**$526M** in GDP	**$945M** in GDP	**$427M** in GDP	**$239M** in GDP
Labour Income	**$725M** in labour income	**$1,007M** in labour income	**$217M** in labour income	**$788M** in labour income	**$276M** in labour income	**$96M** in labour income
Employment	**785** jobs created or sustained annually on average over 10-year period	**1,318** jobs created or sustained annually on average over 10-year period	**445** jobs created or sustained annually on average over 10-year period	**966** jobs created or sustained annually on average over 10-year period	**371** jobs created or sustained annually on average over 10-year period	**197** jobs created or sustained annually on average over 10-year period
Gov't Revenues[4]	**$42M** in provincial and municipal taxes	**$131M** in provincial and municipal taxes	**$124M** in provincial and municipal taxes	**$45M** in provincial and municipal taxes	**$36M** in provincial and municipal taxes	**$65M** in provincial and municipal taxes

1. Direct impact captures the economic contribution generated by Seaspan's direct spending on capital investments and operating expenditures e.g. salaries and wages paid to Seaspan Shipyards employees, and economic value-added from Seaspan Shipyards own operations and investments
2. Indirect impact captures the economic contribution of suppliers to Seaspan Shipyards due to demand for goods and services arising from Seaspan Shipyards activities e.g. economic activity stimulated in the manufacturing, wholesale trade, transportation and professional service sectors among others
3. Induced economic contributions are included in the detailed table for completeness but have been excluded from the total contributions reported
4. Federal revenues are captured in Economic Contribution results (excluded from the impacts to BC)
5. The direct impact on GDP is initially the same in BC and in Canada, but as the numbers were deflated to 2019 dollars, the impact became greater in BC, where inflation, which affect the value of money, was higher in 2019 than for the rest of Canada

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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 2021, Seaspan Shipyards …

awarded **$1.8B**

in contract value to Canadian suppliers as part of NSS-related shipbuilding activities

across **660+** Canadian suppliers – small, medium, and large businesses from coast to coast.

340+

of those suppliers were small and medium-sized Canadian businesses

accounting for **68%** 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.

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