



## CANADA'S NATIONAL SHIPBUILDING STRATEGY 2020 ANNUAL REPORT















Government Gouvernement of Canada du Canada

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I am pleased to present the fifth annual report on Canada's National Shipbuilding Strategy (NSS), covering 2020.

Along with my colleagues, the Honourable Harjit S. Sajjan, Minister of National Defence, the Honourable Bernadette Jordan, Minister of Fisheries, Oceans and the Canadian Coast Guard, and the Honourable François-Philippe Champagne, Minister of Innovation, Science and Industry, I am proud to be leading Canada's efforts to renew and maintain the Royal Canadian Navy (RCN) and Canadian Coast Guard (CCG) fleets.

In 2010, the Government of Canada created the NSS to help rebuild our marine industry by having ships built in Canada, ensure our sovereignty and protect our interests at home and abroad.

The early days were not always easy. Expertise in Canada was still developing, having grown weak during the boom and bust cycle of shipbuilding before the NSS was launched. Early progress was slower than planned. Initial NSS projections were overly optimistic and not yet informed by actual build experience at the shipyards. In addition, entirely new classes of ships were being built by new workforces in new shipyards. However, as the NSS has matured, both the shipyards and Canada have gained experience and the NSS has made important progress. Today, the NSS has produced four large vessels and numerous small ships, and many more are under construction across Canada.

NSS projects continued to stimulate the Canadian economy in 2020, with approximately \$3.5 billion in new contracts awarded to Canadian companies in seven different provinces and one territory throughout the year. Overall, it is estimated that from 2012 to 2020, NSS contracts have contributed approximately \$20.1 billion (\$1.82 billion annually) to Canada's gross domestic product, and will have created or maintained over 16,930 jobs, annually, through the marine industry, its Canadian suppliers and consumer spending by associated employees, between 2012 and 2022.

In July, Irving Shipbuilding (ISI) delivered the first of six new arctic and offshore patrol ships (AOPS), Her Majesty's Canadian Ship (HMCS) *Harry DeWolf*, to the RCN, making it the first large ship to be built for the RCN under the NSS.

In October, Seaspan's Vancouver Shipyards (VSY) delivered the third and final offshore fisheries science vessel, the Canadian Coast Guard Ship (CCGS) *John Cabot*, to the CCG, marking the completion of the first full class of large vessels built under the NSS.



In November, Chantier Davie completed conversion work on the second medium interim icebreaker, the CCGS *Jean Goodwill*, and delivered it to the CCG.

And most recently, we announced that VSY will build one of the Polar icebreakers. The other Polar icebreaker will be built by the third yard, pending the successful completion of the ongoing selection process as the third strategic partner for large ships construction under the NSS. The process for the selection of a third shipyard under the NSS was ongoing throughout 2020, and an umbrella agreement is expected to be in place in 2021.

This work we are undertaking under the strategy is complex, and we continue to make improvements to ensure we meet the important objectives of the NSS. To this end, in 2021, important work was conducted by the Auditor General and the Parliamentary Budget Officer that offered recommendations and perspectives that will guide our work going forward. As with all large-scale procurement projects, the cost and timelines for NSS projects will be closely managed, and we will continue working closely with industry to ensure the best value is provided to Canadians throughout the duration of this project.

Important progress has been achieved during the first decade of the NSS. Looking forward, we have important work on the horizon, and I am confident that the strategy is on the right course to deliver the right ships to the Navy and Coast Guard. The NSS will see the progression of projects for up to 26 additional large ships for the CCG, including up to 16 multi-purpose vessels and two adapted AOPS. We expect six new program icebreakers to join the federal fleets. A full build contract was awarded in February 2021 for the offshore oceanographic science vessel and construction started in March 2021. We will also continue to respond to emerging shipbuilding needs and to work collaboratively with shipyards and suppliers throughout the supply chain to ensure that the strategy continues to support the needs of the government's fleets, while delivering important economic benefits for Canada and jobs for Canadians.

#### The Honourable Anita Anand

Minister of Public Services and Procurement



#### THE YEAR IN REVIEW

#### Large ship construction

In 2020, approximately \$2.54 billion worth of new construction contracts were awarded to Seaspan's Vancouver Shipyards (VSY) and Irving Shipbuilding (ISI) over a project period of 2020–2029.

#### Progress at Seaspan's Vancouver Shipyards (VSY)

- In January 2020, a ceremonial keel laying for the first joint support ship (JSS), the future Her Majesty's Canadian Ship (HMCS) *Protecteur*, was held at VSY.
- In June 2020, the full build contract valued at \$2.4 billion was awarded for the two JSS, facilitating the transition from the early block build to full construction on the first vessel.
- In August 2020, the Government of Canada awarded an initial \$4 million ancillary contract to VSY to support further development of the multi-purpose vessel (MPV) concept design. Under the ancillary contract, the shipyard will also explore options and conduct feasibility studies and analysis to mature the MPV design in order to generate the manufacturing information required to build the ship.
- In October 2020, the third and final offshore fisheries science vessel (OFSV), Canadian Coast Guard Ship (CCGS) *John Cabot*, was delivered to the Canadian Coast Guard (CCG), marking the completion of the first full class of large vessels under the National Shipbuilding Strategy (NSS).





#### **Progress at Irving Shipbuilding (ISI)**

- In July 2020, the first arctic offshore patrol ship (AOPS), HMCS Harry DeWolf, was delivered to the Royal Canadian Navy (RCN). HMCS Harry DeWolf is the first large vessel built for and delivered to the RCN under the NSS combat package.
- Work continued on the second, third and fourth AOPS.
- The name Robert Hampton Gray was also selected for the sixth AOPS by the RCN, in honour of this Canadian naval hero of the Second World War. Lt Gray was awarded the Victoria Cross posthumously, for courage and determination in carrying out daring air strikes on the Japanese destroyer His Imperial Japanese Majesty's Ship (HIJMS) Amakusa.
- Design work on the Canadian surface combatant (CSC) continued throughout the year.

#### **Small ship construction**

In 2020, the Government of Canada awarded approximately \$40.3 million in new small ship construction contracts over a project period of 2020–2026 under the NSS to Canadian shipyards. All of this work is being performed by small- and medium-sized enterprises with fewer than 250 full-time employees.







#### Progress during the reporting period

- In March 2020, a contract valued at \$35 million was awarded to Zodiac Hurricane Technologies of Delta, British Columbia, for the acquisition of 30 new multi-role boats to replace the rigid hull inflatable boats currently used on the RCN's fleet of Halifax-class frigates. Multi-role boats are small, fast and maneuverable vessels used by RCN ships to conduct a wide range of tasks at sea, including search and rescue, humanitarian aid, disaster relief, and marine interdiction operations.
- In October 2020, Hike Metal Products of Wheatley, Ontario, and Chantier Naval Forillon of Gaspé, Quebec, completed the construction of the seventh and eighth search and rescue (SAR) lifeboats, CCGS *Cadboro Bay* and CCGS *Florencia Bay*. A total of 20 lifeboats are being built for the CCG (10 at each yard).
- In November 2020, Ocean Industries Inc., of Isle-aux-Coudres, Quebec, began the construction of the first of four naval large tugs for the RCN. The naval large tug project is intended to replace the RCN's five civiliancrewed, Glen-class large tugs and the two Fire-class rescue boats.

#### Repair, refit and maintenance

In 2020, the Government of Canada awarded approximately \$504.7 million in new or amended repair, refit and maintenance contracts over a project period of 2020–2026 under the NSS to Canadian companies.

#### Progress during the reporting period

- In March 2020, a \$12.1 million contract was awarded to Shelburne Ship Repair, of Shelburne, Nova Scotia, to perform vessel life extension (VLE) work on the light icebreaker CCGS *Kopit Hopson 1752*. The CCGS *Kopit Hopson 1752* is a high-endurance multi-tasked vessel, which performs light icebreaking and buoy tending operations essential to keeping our waters open and safe for marine traffic.
- In March 2020, a \$72.6 million contract was awarded to Fleetway Inc. of Halifax, Nova Scotia, to provide a full range of technical data management and systems engineering support services for the RCN's fleet of Halifax-class ships. This contract will ensure that the RCN and supporting shipyards continue to have the technical data required to conduct maintenance during operational periods as well as during planned docking work periods. Work under the contract began in April 2020 and will continue until the fleet is retired.

- In April 2020, HMCS Ottawa arrived at Seaspan's Victoria Shipyard to undergo scheduled docking maintenance work. This is the last docking work period being conducted under the multi-ship contract that supported the Frigate Life Extension Project. Future docking work periods for Halifax-class ships will be completed under the new Halifaxclass work period contract awarded in July 2019.
- In July 2020, HMCS St. John's arrived at Chantier Davie to undergo scheduled docking maintenance work. This is the first ship to be repaired and maintained under the contract awarded to Chantier Davie in July 2019 for maintenance work on Halifax-class frigates.
- In August 2020, a \$4 million contract was awarded to Heddle Shipyards in Hamilton, Ontario, for refit work on the CCGS *Griffon*, a highendurance multi-tasked vessel that performs light icebreaking and buoy tending operations.
- In August 2020, the CCGS *Hudson* returned to service following VLE work completed by Newdock of St. John's, Newfoundland and Labrador.
- In October 2020, the Government of Canada issued an Advance Contract Award Notice (ACAN) announcing the intent to issue a sole source contract to Chantier Davie of Lévis, Quebec, for the VLE of Canada's largest icebreaker, CCGS *Louis S. St-Laurent*. The VLE work will enable the CCG to continue to provide critical icebreaking and emergency response services effectively and safely in Canadian waters. A contract is expected to be awarded in mid-2021.
- In November 2020, Chantier Davie of Lévis, Quebec, completed conversion work on the second medium interim icebreaker, CCGS Jean Goodwill, and delivered it to the CCG. This work was completed under the contract awarded to Chantier Davie in 2018 for the acquisition and conversion of three medium commercial icebreakers. The third medium interim icebreaker in that contract, CCGS Vincent Massey, is expected to enter into service in 2022. These vessels will supplement the CCG's existing fleet during VLE and repair periods to maintain critical levels of service. The first medium interim icebreaker, CCGS Captain Molly Kool, joined the fleet in December 2018.
- In November 2020, HMCS Vancouver completed its planned maintenance work period at Seaspan's Victoria Shipyards. Valued at over \$100 million, this successful work period will ensure that HMCS Vancouver can support RCN operations for the next five years.





- In December 2020, HMCS Chicoutimi entered the dry-docked phase of a transition docking work period (TDWP) at Babcock Canada Inc. of Ottawa, Ontario, with the primary objective of extending the material certification validity of the vessel. The TDWP includes engineering changes and planned maintenance and corrective maintenance work scope activities.
- In December 2020, a \$16.5 million contract was awarded to Zodiac Hurricane Technologies Inc. of Delta, British Columbia, for inspection, repair and overhaul work, on an as-required basis, on inflatable rubber boats (IRB) and rigid (hull) inflatable boats (RHIB). The Canadian Armed Forces (CAF) uses inflatable boats to support a wide range of missions, including search and rescue, dive support, fisheries patrols, boarding party operations, and the transfer of personnel and equipment.
- Work continued on the competitive procurement process, launched in fall 2019, for the next in-service support contract for the RCN's Victoriaclass submarines.

### Selecting a third shipyard under the National Shipbuilding Strategy

With the need for additional shipbuilding capacity, the Government of Canada continued its work in 2020 to add a third Canadian shipyard as a strategic source of supply under the NSS. The new shipyard will be called on to build six new program icebreakers for the CCG. The addition of a third shipyard will increase the capacity to deliver new vessels in a timely manner.

- In August 2019, the Government of Canada launched a competitive process, through an invitation to qualify (ITQ), to select a third Canadian shipyard as a strategic partner under the NSS. Chantier Davie prequalified through this process.
- This process continued throughout 2020. An umbrella agreement is expected to be in place in 2021.
- This process is similar to the one used to select VSY and ISI as partners under the NSS in 2011.

#### Polar icebreaker

In February 2020, the Government of Canada issued a request for information (RFI), open to all Canadian shipyards, seeking information on domestic shipyard capability and capacity to construct and deliver a Polar-class icebreaker for the CCG. The information gathered helped the government determine how best to proceed with the construction of the Polar Icebreaker.

#### Other marine procurement projects

- In August 2020, the Government of Canada awarded a contract of \$155 million to Naviera de Melenara SA to purchase the Motor Vessel (MV) *Villa de Teror* as an interim measure to replace the 40 year-old MV *Madeleine* ferry, which is used to provide service between Îles-de-la-Madeleine, Quebec, and Souris, Prince Edward Island. This follows an Advance Contract Award Notice (ACAN) published in July 2020. The vessel will undergo additional refit work as required prior to starting service in June 2021. The MV *Madeleine II* will be used to provide safe and reliable ferry service until 2026, when the permanent replacement vessel, the MV *Jean Lapierre*, being designed and constructed at Chantier Davie, is ready for service. The MV *Madeleine* will be disposed of in an environmentally conscious manner. MV *Villa de Teror* has since been renamed the MV *Madeleine II* and arrived in Canada in March 2021.
- In September 2020, a request for proposal (RFP) was posted for the acquisition of one existing light icebreaker to operate in the shallower waters of the St. Lawrence River and the Great Lakes, which are critical icebreaking areas. The delivery of the vessel is anticipated for 2021.
- In November 2020, a contract valued at approximately \$182 million over six years was awarded to General Dynamics Mission Systems–Canada, from Ottawa, Ontario, for in-service support on six Halifax-class combat systems (HCCS). The HCCS are integral components of each ship within the fleet of Halifax-class ships and will require in-service support until the arrival of the CSC.









- Public Services and Procurement Canada (PSPC) continued to work with Transport Canada, the CCG, Fisheries and Oceans Canada, Environment and Climate Change Canada, Indigenous Relations and Northern Affairs Canada and Parks Canada to support the Oceans Protection Plan. Over the course of 2020, 13 new contracts and one standing offer, totalling \$25 million, were put in place for equipment used in responding to marine pollution events, such as trailers, booms (a temporary flotation barrier used to contain pollution spills in water), barges (used for the collection of oil and other pollutants) and wildlife hazing equipment (used to deter wildlife from the spill zone).
- Since 2020, under an established request for supply arrangement for small boats, nine contracts totalling \$6.7 million for 11 small boats, such as rigid hull inflatable boats (RHIB), inflatable boats and aluminum boats, were issued to small-medium entities. One RHIB was delivered in September 2020, followed by another one in October, and two more in December. The other seven RHIBs are currently under construction. These boats are used by the Department of National Defence, the CCG, the Royal Canadian Mounted Police, and the Canadian Border Services Agency.

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## Contracts awarded by province and territory







The National Shipbuilding Strategy (NSS) continues to revitalize Canada's marine sector, creating jobs, and generating socio-economic benefits and prosperity in communities across the country.

In 2020 alone, the Government of Canada awarded approximately \$3.5 billion in new contracts to Canadian companies under the NSS, including approximately \$132.1 million that went to small and medium-sized businesses (SMBs) with fewer than 250 full-time employees.

NSS contracts awarded between January and December 2020 are estimated to contribute more than \$2.7 billion (\$904 million annually) to Canada's gross domestic product and will result in approximately 8,400 jobs<sup>1</sup> annually during the period covering 2020 to 2022.

While the average salary in Canadian shipyards is 30% higher than the manufacturing average, the Canadian marine industry overall is innovative and supports skilled workers, with a 2.5-times-higher share of employment in science, technology, engineering and mathematics fields (such as engineers, scientists and researchers) than total manufacturing.

As hundreds of Canadian businesses are securing work through contracts, this in turn helps support innovation and skills development. Furthermore, the NSS is supporting the creation of a sustainable domestic supply chain.

Since the inception of the NSS, both Irving Shipbuilding (ISI) and Seaspan's Vancouver Shipyards (VSY) have been engaging Canadian firms through sub-contracting activities. As reported by the shipyards, to date more than \$2.9 billion in supplier development opportunities have been provided to 1,066 Canadian companies. SMBs have been awarded approximately 52% (\$1.5 billion) of the value of these opportunities, with that amount

<sup>1</sup>The GDP and job impacts are based on 2020 NSS contract awarded values of build contracts with extended project periods weighted and adjusted to reflect the economic impact period of 2020–2022.

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being shared among 854 firms. During 2020 alone, the value of supplier development opportunities to Canadian firms increased by \$523 million, and further, 54 new Canadian firms were engaged as suppliers to ISI and VSY.

The NSS continues to offer opportunities in the marine sector to underrepresented groups in the shipbuilding industry. Partnerships are being forged with the two large vessel shipyards, federal departments, academic institutions, research organizations and other joint ventures to increase the participation of under-represented groups in the sector.

For example, in order to diversify the workforce available to build ships in eastern Canada, ISI has worked in collaboration with the Nova Scotia Community College (NSCC) and other community partners to establish the Irving Shipbuilding Centre of Excellence. The centre was established to provide pathways and equitable access to opportunities, programs and training for people, with a focus on under-represented communities, to effectively work in the shipbuilding industry. ISI invests annually in the centre to support a variety of programs for under-represented groups in shipbuilding, and the marine sector overall, through student programs, including the Pathways to Shipbuilding Metal Trades Program for Indigenous students. The centre also has a partnership with Women Unlimited, a well-established program in Nova Scotia that seeks to optimize opportunities for women to work in the marine industry.

In western Canada, VSY supports job training, apprenticeship programs and the promotion of employment opportunities for Indigenous peoples and women through funding initiatives, mentorship programs and partnerships with educational institutions that focus on shipbuilding educational initiatives. VSY also has a long-term partnership with three Indigenous training and



employment organizations: the Aboriginal Marine Training to Employment Partnership (AMTEP), the Aboriginal Community Career Employment Services Society (ACCESS), and the Coast Salish Employment and Training Society (CSETS). These organizations are part of the Coastal Aboriginal Shipbuilding Alliance, which seeks to deliver quality training and employment programs to people of First Nation or Indigenous descent living in Vancouver and Vancouver Island.

Both NSS shipyards are also making significant investments in educating and inspiring youth about careers in Canada's marine and shipbuilding industry. In December 2020, VSY announced a \$300,000 investment in Let's Talk Science, a charitable organization that engages Canadian youth and educators with (STEM) programs. This three-year commitment will support the roll-out of new programs from kindergarten to Grade 12 across Canada, which will be focused on educating youth about STEM careers in marine and shipbuilding industries. These programs are expected to launch in April 2021. On the East Coast, ISI is supporting SuperNOVA, a non-profit initiative based at Dalhousie University that provides youth with experiences and camps in STEM-related activities. In addition, ISI's 2017 investment of \$4.5 million in the Centre for Ocean Ventures and Entrepreneurship (COVE) continues to enable post-secondary institutions and ocean science research, start-ups, and industry to work together to create a cluster of marine innovation and commercialization.

#### Industrial and Technological Benefits Policy and National Shipbuilding Strategy Value Proposition

#### Industrial and Technological Benefits Policy

Shipyards are meeting and exceeding their required commitments under both the Industrial and Regional Benefits (IRB) Policy and the Industrial and Technological Benefits (ITB) Policy, as well as the National Shipbuilding Strategy Value Proposition (NSS VP).

Canada's IRB Policy and ITB Policy are playing an important role in leveraging Canada's defence and security spending to generate economic benefits for the country. Under these policies, shipyards and their major suppliers are undertaking business activities in Canada equal to the value of their contracts, and are providing important investments into targeted areas, such as:

- work in Canada directly related to procurement, including opportunities for Canadian suppliers, including small and medium businesses
- investments in innovation through research and development activities in Canada
- skills development and training
- export opportunities for Canadian suppliers

Through these policies, hundreds of Canadian businesses are securing work through contracts with the selected large-vessel shipyards, and in turn are investing in innovation and securing exports.

ISI has an IRB obligation of over \$4.1 billion, of which close to \$2.6 billion has been completed to date for the arctic and offshore patrol ships (AOPS) project and modernizations to the Halifax-class frigates. On the Canadian surface combatant (CSC) Definition contract, ISI has ITB activities of \$203 million to be identified. Its major subcontractor Lockheed Martin Canada has ITB activities of \$194 million to be identified.

On the West Coast, VSY is making progress on its IRB obligations, including the offshore fisheries science vessels, the offshore oceanographic science vessel and the joint support ships. To date, VSY has completed approximately \$1.0 billion in IRBs, with over \$251 million in activities currently underway as part of its total IRB obligation of close to \$1.8 billion across these 3 projects<sup>2</sup>.

<sup>2</sup>Current obligations are based on the value of contracts awarded as of January 2020 for design and engineering, equipment and systems integration, and ship construction. These values will increase in future reports as work progresses on existing projects under the NSS and new activities begin in 2021 for the Canadian Surface Combatant, as well as planned future maintenance support services for Halifax-class frigates.



#### **NSS Value Proposition**

The NSS VP is designed to benefit the greater Canadian marine industry and help ensure its long-term sustainability. Under the NSS VP, shipyards are required to invest an amount equal to 0.5% of the value of the largevessel NSS contracts they are awarded in the Canadian marine industry to support human resources development, technology investment and industrial development.

Both shipyards have made investments in all three priority areas, and have placed particular focus on skills development and advancing the participation of under-represented groups in Canada's marine industry. Investments have supported collaborative approaches to applied innovation in the ocean technology sector, the acquisition of equipment to complement marinespecific education programs, and post-secondary curriculum development to ensure a pipeline of qualified personnel for the industry.

As of December 31, 2020, NSS shipyards had accrued over \$26.7 million in NSS VP obligations. The value of approved investments at the end of 2020, including completed investment activities and approved future activities, exceeded \$29.4 million.

### Statistics Canada survey on Canada's marine industry

Investments made under the NSS have supported the growth of the broader marine industry in Canada. This industry is made up of firms in Key Industrial Capabilities areas of strength, including: shipbuilding, design and engineering services; marine ship-borne mission and platform systems; defence systems integration; and in-service support. The results from the most recent Statistics Canada survey on Canada's marine industry, which was completed in 2020, illustrate the positive momentum being realized under the NSS prior to the onset of COVID-19.

Statistics Canada data released in 2020 indicates that in 2018 Canada's broader marine industry contributed close to 30,000 jobs, with Canada's marine sector growing across every region of Canada, with activity distributed

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as follows: 37% in Western and Northern Canada; 16% in Ontario; 13% in Quebec; and, 34% in Atlantic Canada.

Based on that same data, marine sector employment increased by 11% between 2016 and 2018, while sales increased by 16% to \$4.1 billion in 2018—both employment and sales also experienced similar percentage growth in the 2014–2016 iteration of the Statistics Canada survey. Notably, it is the domestic marine supply chain, which is primarily small and medium-sized businesses (SMBs) that captured 55% of this sales growth.

Between 2016 and 2018, the Canadian marine supply chain also experienced significant export growth of 33%, with export revenues increasing to a value of \$1.1 billion in 2018. Canadian companies are having demonstrable success in the global market, with over 80% of Canadiandeveloped naval systems present on global fleets. Canadian firms indicate that having the ability to participate in domestic projects, by way of the NSS, has provided them with an opportunity to leverage this experience in order to pursue work with other allied nations and international commercial customers. For example:

- Genoa Design from Mount Pearl, Newfoundland and Labrador, which has technology that builds a 3-D model of a vessel from design specifications and extracts manufacturing information, is being used by Seaspan on the offshore fisheries and science vessels, the offshore oceanographic science vessel and the Royal Canadian Navy's joint support ships (JSS).
- Lockheed Martin Canada, which is supplying combat systems integration for Canada's future fleet of AOPS, JSS and CSC, was selected to be the combat systems integrator for the Royal New Zealand Navy's two *ANZAC*-class frigates and the Chilean Navy's three Type 23 frigates, due in large part to its success with the Canadian-developed system on the Halifax-class frigates.



- Quebec-based Bronswerk Marine has secured contracts under the NSS on both coasts, supplying VSY and ISI with marine-grade heating, ventilation, air conditioning and refrigeration (HVAC-R) systems, and chilled water plant systems. Building on this success, Bronswerk was selected in June 2019 to provide the design, equipment and installation of HVAC-R systems, and chilled water plant systems for the U.S. Polar Security Cutter program. The company was again selected in May 2020 to supply a similar scope of equipment for the National Security Multi-Mission Vessel program, a ship design as a training vessel for the U.S. maritime academies.
- British Columbia-based **OSI Maritime Systems** (OSI), is a leading provider of naval navigation and tactical solutions. OSI has a customer base of 23 navies operating with its solutions, and its participation in AOPS, JSS and CSC NSS programs have been proven valuable in supporting the expansion of OSI's global reach.

The Canadian marine sector is also seeing an increase in innovation as investments in research and development increased by 40% to \$64 million between 2016 and 2018, reflective of the industry's efforts to further develop and commercialize products and services to meet market demand.

The growth of innovation in the marine sector will continue to enable Canadian firms to bring new products and services to market that align with Canada's unique marine requirements, generate international interest and create new export opportunities, and contribute to continued growth of the domestic marine industrial base.



### Economic impacts of the NSS since 2012<sup>3</sup>

- » Since 2012, over \$17.49 billion in contracts have been awarded to Canadian companies. Of these contracts, \$976 million went to small businesses with less than 250 full-time employees.
- » Between 2012 and 2020, \$8.23 billion in contracts was awarded to large ship construction, contributing close to \$9.6 billion to Canada's GDP (approximately \$871.7 million per year) during the project period of 2012 and 2022.
- » Between 2012 and 2020, \$457.57 million in contracts was awarded to small ship construction, contributing more than \$288 million to Canada's GDP (approximately \$26.2 million per year) between the project period of 2012 and 2022.
- » Between 2012 and 2020, \$8.12 billion in contracts was awarded to repair, refit and maintenance projects, contributing close to \$10 billion to Canada's GDP (approximately \$908.2 million per year) between the project period of 2012 and 2022.
- » Between 2012 and 2020, \$691.56 million in contracts was awarded for services, contributing more than \$199.1 million to Canada's GDP (approximately \$18.1 million per year) between the project period of 2012 and 2022.
- » NSS contracts awarded between 2012 and 2020 are estimated to create or maintain more than 16,930 jobs annually, through the marine industry, its Canadian suppliers and consumer spending by associated employees between the project period of 2012 and 2022.

<sup>3</sup>The GDP and job impacts are based on 2012–2020 NSS-awarded contract values of build contracts with extended project periods weighted and adjusted to reflect the economic impact period of 2012–2022





Shipbuilding is highly complex, and this sometimes means that plans, budgets and timelines may require adjustments. The experience gained through our initial builds at the yards have greatly helped refine our understanding of the time and resources required for our National Shipbuilding Strategy (NSS) projects. That said, shipbuilding will always carry a degree of risk and uncertainty. This is why we work closely with our shipyard partners and suppliers throughout the supply chain to ensure that we are effectively managing the strategy and it continues delivering important benefits for Canada.

#### Challenges

The Government of Canada is continuously working in concert with shipyards to monitor improvements in shipyard productivity, manage and adhere to timelines, and closely monitor costs, all while investigating and implementing opportunities to minimize any potential work disruptions related to fluctuations in production.

#### **COVID-19** pandemic

In 2020, the COVID-19 pandemic created an unprecedented situation, forcing all sectors, including the marine industry, to adapt rapidly. Shipyards reported some delays to projects resulting from COVID-19; however, given the uncertainties associated with the duration of the pandemic, the full extent of these schedule impacts is not yet known.

Despite suspending most industrial operations in March 2020, construction of the first and second arctic and offshore patrol ships (AOPS) and maintenance of Her Majesty's Canadian Ship (HMCS) *Charlottetown* gradually resumed in mid-April at Irving Shipbuilding (ISI), with a partial restart of AOPS 3 and 4 in



late June and early July. In July 2020, the first AOPS, HMCS *Harry DeWolf*, was delivered and accepted by the RCN.

Work for the CSC continued to progress, with most staff employees able to return to work in the office.

Operations at Seaspan's Vancouver Shipyards (VSY) continued throughout the year, while enforcing required COVID-19 safety measures.

The delivery of the third offshore fisheries science vessel, Canadian Coast Gard Ship (CCGS) *John Cabot*, was slightly delayed but was nevertheless completed in October 2020.

Early block construction of the first joint support ship continued throughout the pandemic, with efforts taken to minimize the impact of COVID-19. Construction was able to transition to the full build in July 2020.

Build contract negotiations continued for the offshore oceanographic science vessel, in advance of the contract award expected in early 2021. The multipurpose vessels project also progressed, with the ancillary contract awarded in August 2020.

Throughout 2020, the Government of Canada and the shipyards have taken measures to mitigate the impacts of the pandemic on projects, which include interim labour rates, allowances for inefficient work related to production and/or repair, and the consideration of excusable delays. Other measures included adjusting milestone payments to better align with work progress and advancing material purchases to reduce the potential impact of schedule and price fluctuations.

The Government of Canada will continue to monitor the situation, analyze potential impacts and consider further measures that may be warranted.

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#### Public and program communications

Clearly explaining to the public the inherent complexities of shipbuilding and the evolving nature of schedules and budgets is challenging. Departments will build on extensive communications efforts to provide Canadians with additional information about shipbuilding and the work being advanced under the NSS.

In 2020, the COVID-19 pandemic introduced new challenges to the workplace that further complicated information-sharing efforts between departments under the NSS. Despite these limitations, the Government of Canada continued to maintain ongoing interdepartmental collaboration. Public Services and Procurement Canada, the Department of National Defence, the Canadian Coast Guard and Innovation, Science and Economic Development Canada worked together daily—in a virtual manner—to advance projects and maintain an open dialogue. Ongoing engagement with shipyards, through established governance processes, also continued.

#### Risks

The Government of Canada has developed a formal and robust riskmanagement approach for the NSS. The approach is informed by international best practices, and helps to predict, identify and mitigate the key risks facing the NSS. Risk management also helps to support the development of corrective actions to the NSS, so that the strategy is wellpositioned to meet its long-term objectives. Risks are managed at the project, program (combat, non-combat and small vessels and sustainment) and strategic level. Risks are considered by the appropriate governance committees and are escalated as necessary from the working level to senior executives within the government and the shipyards.

In addition to the challenges referenced earlier in the report, the NSS faces the following key risks:

- Human resources capacity
- <u>Timely analysis and decision making</u>
- <u>Schedule adherence</u>

#### Human resources capacity

Looking forward, construction of the CSC at ISI and the JSS at VSY are highly complex projects. Human resources will be one of the challenges to be addressed moving forward to avoid fluctuations in production at the shipyards as there is a current shortage of experienced white- and blue-collar labour in the shipbuilding industry. Extensive literature review and consultations with key stakeholders suggests that access to and retention of a viable marine workforce is difficult and poses a key risk to the NSS.

To address this challenge, Public Services and Procurement Canada (PSPC) is working with NSS partners to develop a human resources strategy for the NSS, to identify and address labour and skills challenges within the marine industry and the Government of Canada that could negatively impact NSS objectives. The objective of the strategy is to continue to support the Government of Canada, shipyards, and the industry as a whole, to have the capacity needed to fulfill their commitments and become world-class experts and leaders in the shipbuilding industry.

The NSS HR strategy will be built on the following three pillars:

- Attraction and retention, which focuses on the development of a consistent approach to attract and retain workforce, with targeted measures specifically geared towards women and Indigenous peoples.
- Workforce development, to encourage leadership and generate the skills and capabilities of future workforces.
- **Community building**, to foster a sense of community across stakeholders from the Government of Canada and the marine industry at large.

The strategy is intended to complement, but not replace, activities already undertaken by shipyards and the marine industry, as well as federal and provincial initiatives.



Indigenous and First

Nations peoples.



WORKFORCE DEVELOPMENT

Leadership to generate the skills and capabilities of future workforce.



COMMUNITY BUILDING

Sense of community with stakeholders from GC, industry and external (associations, experts, academic institutions, etc).



#### Timely analysis and decision making

The NSS is a large and complex endeavour involving multiple projects, shipyards, departments and agencies. Risk consideration plays an important role in all decisions made under the NSS. Given the breadth of the NSS, the number of parties engaged and the complexity of issues arising as the strategy matures, there is a need to improve risk-management tools to identify and assess associated risks, and to develop and track mitigation strategies. This will ensure that all relevant information is available to decision makers and ensure clarity and transparency.

A number of key activities have been identified to help improve risk management tools, support thorough risk analysis, and identify, monitor and implement riskmitigation measures. These actions include, but are not limited to:

- expanding the breadth of coverage of the risk management process to include all pillars of the NSS;
- increasing shipyard integration; and,
- raising the number of dedicated individuals involved in risk management.

There has been an increase in the engagement of third-party experts within the NSS to ensure a broader level of expertise is available to address risk management and other diverse elements under the NSS. This augmentation is expected to support informed decision making and mitigate risk within the strategy.

PSPC is progressing different initiatives to analyze and review existing NSS practices in order to ensure that appropriate due diligence is exercised throughout the shipbuilding process and that investment decisions obey sound value-for-money principles. Canada is looking at what could be done to be more effective, extracting and leveraging international best practices, while maintaining focus on the timely delivery of quality ships in support of the renewal of Canada's fleet.

Since the inception of the NSS, other measures and tools have been put in place to help improve management and strengthen the strategy's governance. These include:

- the creation of a governance structure comprising various levels of government senior management representatives that provides oversight and supports the execution of the strategy;
- the establishment of governance committees with NSS shipyards;

- the establishment of a costing model for NSS projects;
- detailed analysis efforts to support decision making processes;
- a performance-monitoring framework, which includes annual monitoring and reporting of progress towards NSS objectives; and
- efforts to streamline defence procurement and standardize contract terms and conditions.

#### Schedule adherence

One of the NSS's main objectives is to renew the federal fleets in a timely and affordable manner. In order to be able to support this objective, it is essential that shipyards provide decision makers with complete, current and reliable project schedules. Current tools, such as the shipyard-produced integrated project schedules, and approaches, including earned value management, are being further developed so that schedules are properly managed, progress is made toward expected timelines and opportunities to take corrective actions are available when necessary.

Departments also continue to work together and with shipyards to improve delivery and accuracy of schedules, and ensure more disciplined reporting of progress towards targets.

Through the use of detailed analysis, supported by risk assessment and expert advice, and the application of lessons learned, Canada has been able to take key decisions to ensure cost and schedule are properly managed, such as, for example, the re-sequencing of the construction of the JSS and OOSV at VSY to ensures focused engineering resources on each of the projects.







Looking forward to 2021 and the decade ahead, several key milestones are projected for the National Shipbuilding Strategy (NSS).

#### The year ahead

In 2021, the Government of Canada will continue to take strong and quick action to protect Canada's economy, and the health, safety and jobs of all Canadians during the global COVID-19 pandemic. We will work with the shipyards and our various contractors and suppliers to advance NSS projects, and monitor and adjust any budgetary and schedule impacts due to COVID-19.

Several key milestones are on the horizon for the coming year.

The Royal Canadian Navy (RCN) expects to take delivery of its second arctic and offshore patrol ship (AOPS) in 2021, and AOPS 3 is expected to be launched. Construction of the first joint support ship (JSS) and maintenance work on the first group of Canada's Halifax-class frigates will continue. The RCN also expects to take delivery of four new sea-to-shore connector systems in spring 2021. Built by Navamar Inc. of Montréal, Quebec, these connector systems will provide the JSS with an enhanced ability to transfer cargo and equipment from the ship to shore in areas with inadequate docking facilities.

Additionally, the construction of a fuelling facility in Nanisivik, Nunavut, continues. The facility will support the operations of the RCN's new AOPS and other government maritime vessels. Construction is anticipated to be completed by September 2021, with initial operational capability targeted for summer 2022. However, there remains significant schedule uncertainty due to the COVID-19 pandemic and how this may impact the 2021 construction season in the Arctic.





In mid-2021, the Canadian Coast Guard (CCG) is expected to receive its ninth and tenth search and rescue (SAR) lifeboats out of the 20 being built to replace the aging SAR fleet.

As part of CCG's Fleet Renewal Plan, Seaspan's Vancouver Shipyards (VSY) will build an offshore oceanographic science vessel (OOSV) to replace the Canadian Coast Guard Ship (CCGS) *Hudson*, Canada's oldest and largest science vessel. The vessel will be capable of multi-tasking oceanographic, geological and hydrographic survey missions, and will contribute to Canada's understanding of the oceans and the impacts of climate change. Pre-construction work is currently under way and construction began in spring 2021.

The multi-purpose vessels (MPV) project will also continue to progress, as VSY explores options and analysis for advancing the vessel class design. These vessels will enable the CCG to carry out multiple missions, including icebreaking, search and rescue, and environmental response.

The CCG has a requirement for vessel life extension (VLE) work for its fleet of 36 47-foot motorized life boats stationed across Canada, for which work periods are expected to start in late 2021. The VLE of these boats will enable the CCG to continue to provide critical emergency response services effectively and safely, while providing economic opportunities for the Canadian marine sector in the Atlantic, Quebec, Ontario and Pacific regions.

VLE will also be performed on CCGS *Cape Roger* and CCGS *Cygnus*. The project will include two five-month work periods, commencing with the CCGS *Cape Roger* in May 2021, followed by the CCGS *Cygnus* in November 2021.









Given the importance of icebreaking capacity, the Government of Canada announced in May 2021 that it plans to build two polar icebreakers as part of the renewal of the Canadian Coast Guard fleet.

The third and final medium interim icebreaker, the CCGS *Vincent Massey*, is expected to be delivered to the CCG in 2022 following conversion work by Chantier Davie and will become part of the CCG fleet that carries out icebreaking duties in Atlantic Canada, the St. Lawrence River and the Great Lakes, and Arctic regions.

The CCG is also looking to acquire one existing light icebreaker in 2021 to operate in the shallower waters of the St. Lawrence River and access the Great Lakes, which are critical icebreaking areas.

The competitive process to select a third shipyard under the strategy is expected to close in 2021. This third yard will be responsible for the construction of six new program icebreakers for the CCG.

Finally, in February 2021, the Office of the Auditor General (OAG) tabled a report on its audit of the NSS. The report focused on whether the Department of National Defence, Fisheries and Oceans Canada, Public Services and Procurement Canada, and Innovation, Science and Economic Development Canada managed the NSS in a manner that supported timely renewal of the federal large-vessel fleet. Based on findings and recommendations, the departments will provide formal responses outlining specific actions to be undertaken.

#### The decade ahead

#### **Royal Canadian Navy**

- The AOPS project is projected to be completed, with the construction and delivery of the second, third, fourth, fifth and sixth vessels. To ensure that we are able to berth these new ships, jetty infrastructure is being upgraded on the east and west coasts, as well as in the Arctic.
- The RCN fleet will also welcome two new JSS. The new JSS will replace the RCN's former Protecteur-class auxiliary oiler replenishment vessels, which were retired from service in 2014. They will represent a critical capability for achieving success in both international and domestic Canadian Armed Forces missions.

- For the Canadian surface combatant (CSC) project, design work will progress with Irving Shipbuilding and its subcontractor, Lockheed Martin Canada. Start of construction of the first CSC is expected to begin in 2023-2024.
- The four naval large tugs are expected to be completed and delivered.
- All 30 of the new multi-role boats are expected to be delivered.
- The docking, replenishing and refuelling facility in Nanisivik, Nunavut, is expected to be operational.

#### **Canadian Coast Guard**

- Construction of the OOSV is expected to be completed in 2024.
- The remaining 12 of 20 SAR lifeboats will be built and delivered between 2021 and 2028 to replace CCG's existing SAR fleet.
- By 2026, CCG's fleet is also expected to include two new AOPS, which will be adapted to the CCG's needs. These ships will perform a range of critical missions, including Northwest Atlantic Fisheries Organization patrols.
- The CCG will also receive one of the six new program icebreakers, which will be built by the third Canadian shipyard expected to be qualified under the NSS in 2021. The program is scheduled to last until the 2040s.
- Construction of the MPVs will begin, with the delivery of the first one expected by 2030.
- The scheduled VLE work on Canada's largest icebreaker, CCGS *Louis S. St-Laurent*, will take place over three five-month dry docking periods in 2022, 2024 and 2027, respectively, with an alongside work period in 2023. Work will include, but is not limited to, inspections, regulatory maintenance and auxiliary equipment replacement. VLE is also planned on icebreakers CCGS *Terry Fox* and CCGS *George R. Pearkes*.
- CCG's fleet is also expected to include two polar icebreakers, to support Canada's year-round sovereignty and national interest in the Arctic, including Arctic science. At least one polar icebreaker is required in 2030, when CCGS *Louis S. St-Laurent* is expected to be retired from service.

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#### **More information**

If you would like more information about the National Shipbuilding Strategy (NSS), please consult the following links:

Shipbuilding projects to equip the Royal Canadian Navy and the Canadian Coast Guard National Shipbuilding Strategy annual reports Royal Canadian Navy patrol frigates Canadian Coast Guard fleet Industrial and technological benefits Value proposition

