



CANADA'S NATIONAL SHIPBUILDING STRATEGY

2018
ANNUAL
REPORT



Government
of Canada

Gouvernement
du Canada

Canada



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MINISTER'S MESSAGE

I am pleased to present the third annual report on the progress and challenges of Canada's National Shipbuilding Strategy in 2018.

Along with my colleagues, the Honourable Harjit S. Sajjan, Minister of National Defence, the Honourable Jonathan Wilkinson, Minister of Fisheries, Oceans and the Canadian Coast Guard, and the Honourable Navdeep S. Bains, Minister of Innovation, Science and Economic Development, I am proud to support the building, delivery and maintenance of ships for the Royal Canadian Navy and the Canadian Coast Guard, while creating jobs and generating significant economic benefits to communities across Canada.

Now more than eight years into the National Shipbuilding Strategy, we are seeing good progress at shipyards across the country. As this report indicates, 2018 saw key milestones achieved under all three pillars of the Strategy: large ship construction; small ship construction; and repair, refit and maintenance work.

Highlights included the launch of the first Arctic and Offshore Patrol Ship, the start of the Joint Support Ship early block construction, continuing sea trials for the first Offshore Fisheries Science Vessel, and the delivery of new search and rescue lifeboats to the Canadian Coast Guard. Importantly, in early 2019, we also chose the design and design team for the future Canadian Surface Combatants.

This past year, we also demonstrated how the National Shipbuilding Strategy can adapt to address operational requirements in a timely manner. For example, in August, we awarded a contract to acquire and convert three interim icebreakers for the Canadian Coast Guard. The first was delivered in December 2018, in time for the icebreaking season.



In 2018, the National Shipbuilding Strategy continued to help stimulate the Canadian economy, with more than \$1.8 billion in new contracts awarded to Canadian companies in six different provinces. Of note, contracts awarded between 2012 and 2018 will contribute about \$10.9 billion to our gross domestic product and create or maintain on average 10,190 jobs annually during the period covering 2012 to 2022.

Our success has not been without challenges. With workforce capacity continuing to develop and new classes of vessels being built, in some cases in small production runs, shipyards have faced difficulties finding efficiencies in production. This has resulted in challenges related to schedules, project budgets and fluctuations in production.

In 2018, we demonstrated resilience by working shoulder to shoulder with shipyards to develop solutions to keep plans and progress on course. We will continue to build on lessons learned in an effort to continually improve as we adapt and evolve the Strategy to support the needs of the government's fleets.

The National Shipbuilding Strategy is a long-term commitment to domestic shipbuilding that is revitalizing and reinvigorating a world-class marine industry, supporting Canadian technological innovation, creating well-paying stable employment and generating economic benefits across Canada.

We remain firmly committed to the National Shipbuilding Strategy, and will continue to work closely with our shipbuilding partners to position it for success now and into the future.

The Honourable Carla Qualtrough

Minister of Public Services and Procurement and Accessibility



THE 2018 NATIONAL SHIPBUILDING STRATEGY ANNUAL REPORT

The National Shipbuilding Strategy is Canada's long-term plan to renew the fleets of the Royal Canadian Navy (RCN) and the Canadian Coast Guard (CCG). The primary objectives of the Strategy are to deliver vessels to the RCN and the CCG, create jobs and generate economic growth for Canada, and build a sustainable Canadian marine sector.

This report provides an update on the National Shipbuilding Strategy from January 1 to December 31, 2018, as well as key achievements in early 2019. It highlights economic achievements and details progress and challenges against the three pillars of the Strategy:

- large vessel construction
- small vessel construction, and
- repair, refit and maintenance work

The report also addresses the key risks facing the Strategy, and the mitigation measures put in place.





THE YEAR IN REVIEW

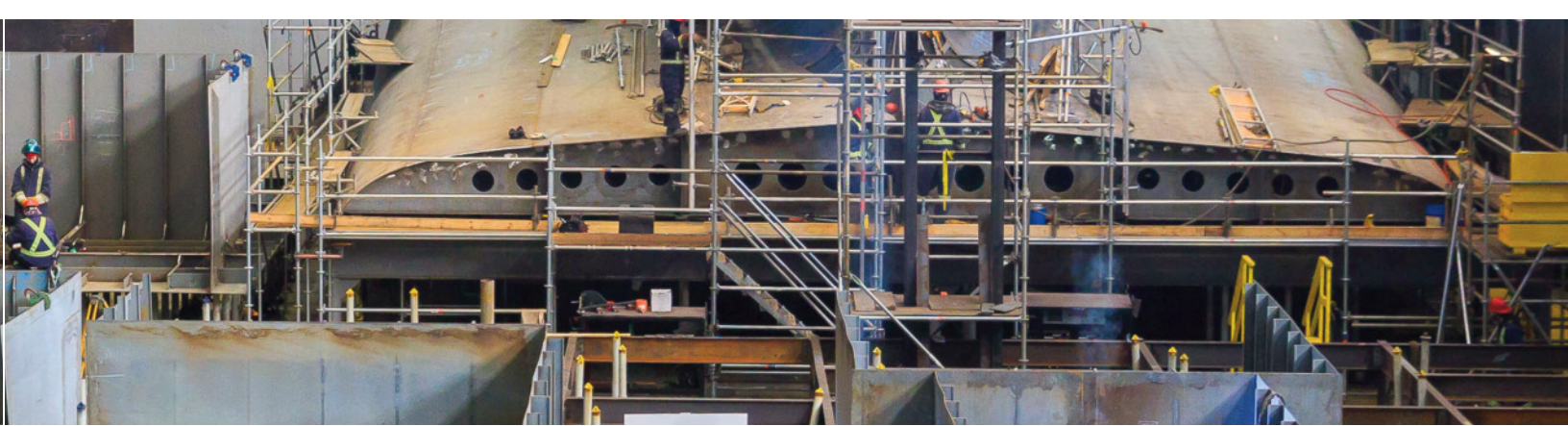
Large ship construction

In 2018, more than \$247 million worth of new construction contracts were awarded to Irving Shipbuilding Inc. (ISI) and Seaspan's Vancouver Shipyards (VSY), Canada's shipyards for large ship construction projects under the National Shipbuilding Strategy.

These contracts will contribute approximately \$328 million (\$66 million annually) to Canada's gross domestic product, and result in an average of 655 incremental jobs annually during the period covering 2018 to 2022.

Projects at Irving Shipbuilding Inc.

- The first Arctic and Offshore Patrol Ship (AOPS) was launched in **September**, and was officially named Harry DeWolf during a ceremony at the shipyard in October.
- The middle and stern megablocks of AOPS 2, the future Her Majesty's Canadian Ship (HMCS) Margaret Brooke, were rolled out and joined at the end of September. The keel-laying ceremony for AOPS 3, the future HMCS Max Bernays, was held in December.
- In November 2018, the Government of Canada announced it will proceed with construction of a sixth AOPS to bolster the capabilities of the Royal Canadian Navy.



- In early 2019, the Government of Canada and ISI officially selected Lockheed Martin Canada for the design of 15 new Canadian Surface Combatants that will be built at ISI. The winning bid is based on the BAE Systems Type 26 Global Combat Ship. Construction is set to begin in the early 2020s.

Projects at Seaspan's Vancouver Shipyards

- Trials began for the first of three Offshore Fisheries Science Vessels (OFSV), the future Canadian Coast Guard Ship *Sir John Franklin*. It will be delivered to the Canadian Coast Guard (CCG) in summer 2019.
- Construction continued on the second and third OFSVs. OFSV 2 is expected to be launched in summer 2019 and delivered to the CCG in fall 2019. The delivery of OFSV 3 will follow in summer 2020.
- Early-block construction of Joint Support Ship (JSS) began in June 2018.
- In early 2019, in consultation with VSY, the Government of Canada announced a change in the sequence of construction of the JSS and the Offshore Oceanographic Science Vessel (OOSV). The new sequence will see the shipyard move from early-block construction to full production on JSS 1, followed by the OOSV, then JSS 2. This sequence will allow more time to incorporate lessons learned between JSS 1 and **JSS 2**, and allow the shipyard to better optimize its engineering workforce.

Small ship construction

In 2018, the Government of Canada awarded more than \$92 million in new small ship construction activity to Canadian shipyards. All of this work was performed by small and medium-sized enterprises with fewer than 250 full-time employees.

These contracts will contribute approximately \$47 million (\$9 million annually) to Canada's gross domestic product and result in an average of 103 jobs annually during the period covering 2018 to 2022.

- In September and October 2018, the Canadian Coast Guard (CCG) accepted the third (Canadian Coast Guard Ship [CCGS] *McIntyre Bay*) and fourth (CCGS *Pachena Bay*) search and rescue (SAR) lifeboats into its fleet. The lifeboats are being built by Hike Metal Products of Wheatley, Ontario, and Chantier Naval Forillon of Gaspé, Quebec.
- In December 2018, the Government of Canada announced it will exercise contract options to invest in eight additional SAR lifeboats for the CCG. A total of 20 SAR lifeboats have been contracted to Hike Metal Products and Chantier Naval Forillon, with each shipyard building 10.
- In November 2018, the CCG accepted two new Channel Survey and Sounding Vessels, CCGS *Jean Bourdon* and CCGS *Helen Irene Battle*, into its fleet. These vessels were built by Kanter Marine of St. Thomas, Ontario.

Repair, refit and maintenance

In 2018, the Government of Canada awarded more than \$1.4 billion in new or amended repair, refit and maintenance contracts to Canadian companies.

Repair, refit and maintenance contracts issued in 2018 will contribute approximately \$1.1 billion (\$221 million annually) to Canada's gross domestic product and result in an average of 2,229 jobs annually during the period covering 2018 to 2022.

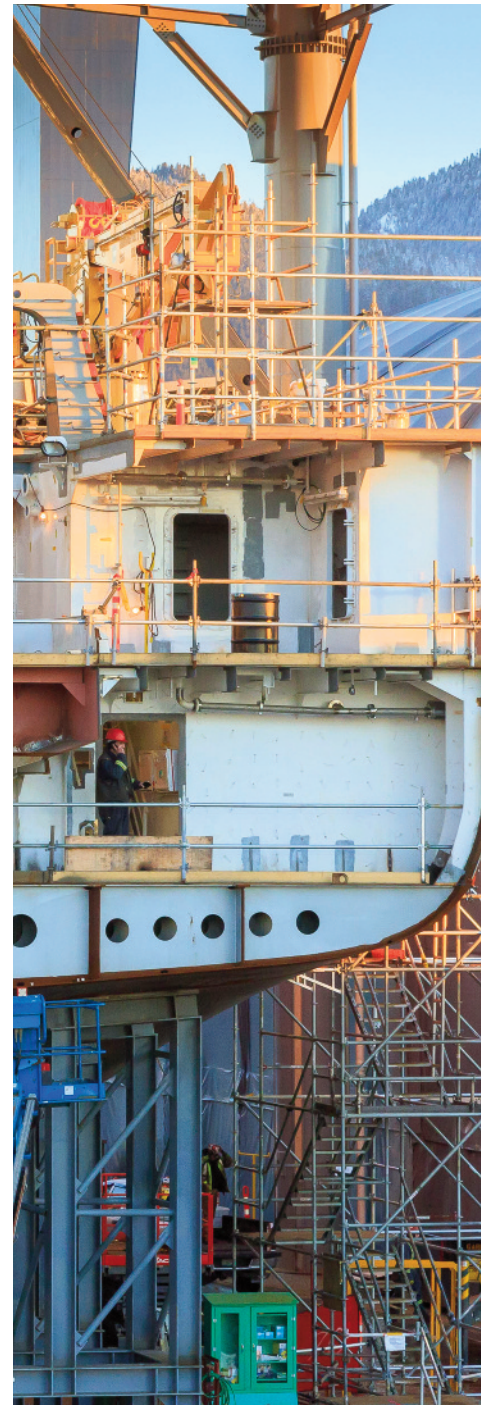
- In August 2018, the Government of Canada awarded a \$610-million contract to Chantier Davie Canada Inc., of Lévis, Quebec, for the acquisition of three medium icebreakers and the conversion of the first one to maintain Canadian Coast Guard (CCG) icebreaking operations while vessels are undergoing maintenance, refit and vessel life extension. The work on all three vessels has progressed.
- In December 2018, the CCG accepted the first of the three icebreakers

being converted by Chantier Davie, Canadian Coast Guard Ship (CCGS) Captain Molly Kool, into its fleet in time for the icebreaking season. It is estimated that this contract will employ 200 people for a period of up to 24 months. By December 2018, the overall contract value had risen to \$700 million.

- In November 2018, the Government of Canada issued Advance Contract Award Notices (ACAN) to Irving Shipbuilding Inc. of Halifax, Nova Scotia, Chantier Davie and Seaspan's Victoria Shipyards, in British Columbia, for maintenance support services for Canada's 12 *Halifax*-class frigates. The contracts are expected to be awarded in 2019, and work will begin in 2020. They will have a combined value of about \$7 billion. This work will assist the Royal Canadian Navy in ensuring the *Halifax*-class frigates remain operational until the delivery of the Canadian Surface Combatant, providing repair and maintenance support for at least 20 years.
- In December 2018, the Government of Canada issued an ACAN to Chantier Davie for dry-dock refit work on CCGS *Louis S. St-Laurent*. Subsequently, a contract valued at \$7.2 million (including taxes) was announced on April 30, 2019.
- Throughout 2018, Public Services and Procurement Canada continued to host industry workshops across the country to help advance the development of small vessel and repair, refit and maintenance program strategies. Participants included representatives of the marine industry, provincial officials and regional development agencies. To frame the discussions, future requirements of the core National Shipbuilding Strategy federal departments and the Royal Canadian Mounted Police were explained to participants. Participants proposed means to improve value for money, such as bundling requirements, making better use of commercial terms and conditions, and providing sufficient notice of forthcoming Requests for Proposals to allow potential bidders ample time to plan. This important feedback is being considered by the government.

Challenges

The National Shipbuilding Strategy is a long-term program to fulfill federal shipbuilding requirements. Although good progress is being made, as with any large-scale program, there have been challenges in meeting schedules, and building and sustaining the required workforce expertise and capacity at Irving Shipbuilding Inc. (ISI) and Seaspan's Vancouver Shipyards (VSY).





Given the state of the Canadian industry and the approach used to execute complex marine procurements prior to the National Shipbuilding Strategy, the transition to a more robust and efficient strategy has been complex and difficult.

These challenges are similar to those experienced in other countries with first builds and new shipyards. Shipbuilding schedules were established years ago, based on projections and guided by limited government and shipyard experience in the planning of shipbuilding projects.

In some cases, shipyards are building limited numbers of first-of-class vessels, making it difficult to find production efficiencies between builds. For example, Canada has contracted VSY to build limited runs of three Offshore Fisheries Science Vessels (OFSV), two Joint Support Ships (JSS), the Offshore Oceanographic Science Vessel (OOSV) and Polar Icebreaker (1). This is compounded by the fact that shipyards on both coasts have relatively new workforces that have been ramping up since the onset of the Strategy. As a result, large ship construction projects on both coasts have faced technical, quality, schedule and budget issues, in addition to fluctuations in production. Despite these challenges, many milestones are being met, and we continue to work closely with partners to find efficiencies in order to better advance work and managing costs.

Shipyards are showing progress and applying lessons learned during construction of first-of-class vessels. Efficiency improvements are being realized already, with a significant reduction in the amount of time required for the construction of each subsequent Arctic and Offshore Patrol Ship (AOPS) and OFSV. For example, the labour hours required to achieve the same state of completion for the second and third OFSVs fell by approximately 25% from the first build, while the number of labour hours required for the second AOPS has been reduced by approximately 40%, with a further 15% reduction from the second AOPS to the third.

In 2018, the Government of Canada and its shipbuilding partners also demonstrated how the Strategy provides flexibility in addressing the challenges it is facing.

For example, in May 2018, the Government of Canada announced it would proceed with early-block construction of the JSS at VSY. This move was critical to sustaining the workforce at the yard between construction projects. Fluctuations in production at the shipyard were further mitigated in early 2019,

with the re-sequencing of the JSS and OOSV projects. Canada will continue to work closely with VSY to monitor progress.

On the East Coast, the Government of Canada continues to work closely with ISI to monitor projects and minimize potential fluctuations in production. In November 2018, the Government announced it would proceed with construction of a sixth AOPS, a decision that will greatly increase the capacity of the Royal Canadian Navy, while also helping to mitigate fluctuations in production between the AOPS and Canadian Surface Combatant projects. Government officials continue to work closely with ISI to identify solutions that could help further mitigate these fluctuations.

Finally, the release of Advance Contract Award Notices to ISI, Seaspan's Victoria Shipyards and Chantier Davie in November 2018 for *Halifax*-class frigate maintenance is an example of how the Strategy is providing solutions for supporting long-term fleet maintenance projects.

The Government of Canada will continue to work 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.

Economic benefits for Canadians

The National Shipbuilding Strategy is revitalizing the domestic shipbuilding and greater marine industry, creating jobs, and generating socio-economic benefits and prosperity in communities across Canada. In 2018, the Strategy made significant headway on this commitment.

During 2018, the Government of Canada awarded approximately \$1.8 billion in new contracts to Canadian companies under the Strategy. Of that amount, more than \$173.6 million went to small businesses with fewer than 250 full-time employees.

National Shipbuilding Strategy contracts awarded between January and December 2018 are estimated to contribute close to \$1.5 billion (\$296 million annually) to Canada's gross domestic product and will result in, approximately 2,987 jobs annually during the period covering 2018 to 2022.

The average salary in Canadian shipyards is 30% higher than the manufacturing average. Overall, the Canadian marine industry is innovative, and supports

skilled workers, with a 2.5-times higher share of employment in science, technology, engineering and mathematics (STEM) fields (such as engineers, scientists and researchers) than total manufacturing.

Hundreds of Canadian businesses are securing work through contracts with the selected large vessel shipyards, which in turn supports innovation and skills development. Furthermore, the Strategy is supporting the creation of a sustainable domestic supply chain. Through Irving Shipbuilding Inc. and Seaspan's Vancouver Shipyards, more than \$1.9 billion in supplier development opportunities have been provided to over 825 Canadian companies since 2012. A total of 79% of these are small and medium sized enterprises, which account for 50% of the overall value. In 2018, more than \$309 million in supplier development opportunities were provided to 108 Canadian suppliers, which is critical for supporting the Canadian Coast Guard and Royal Canadian Navy fleets, now and into the future.

The Strategy continues to provide fair opportunities in the marine sector to businesses led by under-represented groups in the shipbuilding industry, including women, Indigenous Peoples and persons with disabilities. Partnerships are being forged with the two large vessel shipyards, federal departments, academic institutions, research organizations and other joint-ventures to increase participation of under-represented groups in the sector.

Industrial and Regional Benefits Policy, Industrial and Technological Benefits Policy and National Shipbuilding Strategy Value Proposition

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 the contract, and providing important investments into targeted areas, such as:

- work in Canada directly related to the procurement;
- opportunities for Canadian suppliers;



- innovation through research and development activities in Canada; and
- skills development and new export opportunities.

Irving Shipbuilding Inc. has an IRB obligation of nearly \$4 billion, of which \$2 billion has been completed to date and another \$403 million is underway for the Arctic and Offshore Patrol Ships project and modernizations to the *Halifax*-class frigates.

On the West Coast, Seaspan's Vancouver Shipyards (VSY) is making progress on its IRB obligations for the vessels under the National Shipbuilding Strategy's non-combat package, including the Offshore Fisheries Science Vessel, the Offshore Oceanographic Science Vessel and the Joint Support Ship. To date, VSY has completed \$777 million in IRBs, with \$225 million in activities underway as part of its total IRB obligation of \$1.1 billion across these three projects.

Current obligations are based on the value of contracts awarded as of January 2019 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 Strategy and new activities begin in 2019 for the



Canadian Surface Combatant as well as planned future maintenance support services for *Halifax* class frigates.

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 0.5% of the value of Strategy-awarded contracts into the Canadian marine industry to support human resources development, technology investment and industrial development.

To date, of the \$20.4 million in obligations under the NSS VP, more than 87%, or \$17.8 million, have either been completed or are in progress or planned.

Risks

The Government of Canada has developed a formal and robust risk management plan for the National Shipbuilding Strategy. The plan is informed by international best practices, and helps to predict, identify and manage the key risks facing the Strategy.

Risks are managed at the project, program (combat, non-combat, and small vessels and sustainment) and over-arching strategy levels. Risks are also considered by the appropriate governance committees and are escalated as necessary from the working level up to senior executives and the shipyards.

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

Timely analysis and decision making

The National Shipbuilding Strategy is a large and complex endeavour involving multiple projects, shipyards, departments and agencies. To prevent costly delays or impede achievement of greater efficiencies, it is important that information makes its way to decision makers in a timely manner. To mitigate this, a robust senior-level governance structure, including the two main shipyards, is in place. These committees meet monthly to ensure the timely advancement of the Strategy.

Human resources capacity

Ensuring sufficient human resources capacity exists to sustain Canada's industrial base is a risk common to all sectors. For the marine sector, and more specifically shipbuilding, there is a risk of insufficient human resources capacity needed to manage and execute complex, specialized shipbuilding projects. This risk includes project management and cost-estimating capacity within government and experienced, skilled resources, such as tradespeople and specialists at the shipyards. This risk is being mitigated by hiring more procurement officers, training government analysts on estimating cost, continuing to support training and apprenticeship programs, seeking out innovative recruitment approaches, and ensuring succession planning is in place.

Communications

The National Shipbuilding Strategy is an ever-evolving portfolio of work. While it can sometimes be difficult to clearly communicate aspects of the Strategy to both internal and external audiences, it is nevertheless vital to its success.

To mitigate the risk of ineffective internal communications, the Government of Canada has co-located project teams from implicated departments and implemented ongoing and robust governance that includes representation from the two main shipyards. This helps ensure ongoing, consistent communications with government departments and key strategic partners.

With respect to external communications, the Government of Canada keeps the public informed by publishing annual reports and providing information about the Strategy, including status of projects, on the Public Services and Procurement Canada website. Announcements and media technical briefings are held when major project milestones are achieved, and the government continues to seek opportunities to provide Canadians with timely information about the Strategy.

The year ahead

Looking forward, the National Shipbuilding Strategy continues to focus on the foundations of building vessels for delivery. With the first ship scheduled to enter into service and several other ships scheduled to be delivered, 2019 is poised to be a landmark year for the Strategy.

The trials and acceptance to the Canadian Coast Guard (CCG) of the first Offshore Fisheries Science Vessel (OFSV) are expected in summer 2019. Delivery of the second OFSV is planned for fall 2019, and the third vessel for summer 2020.

The first of six Arctic and Offshore Patrol Ships (AOPS) will be delivered to the Royal Canadian Navy (RCN) in summer 2019, construction will continue on the second and third AOPS, and production will start for the fourth. For the Canadian Surface Combatant, design work will progress with Irving Shipbuilding Inc. (ISI) and its subcontractor.

A contract valued at \$102 million (including taxes) was awarded on April 29, 2019, to Ocean Industries Inc., from Isle-aux-Coudres, Quebec, that will provide four naval large tugs to the RCN. More capable than the current fleet, they will perform near-coastal work to support the current and anticipated future fleet.

Maintenance contracts to support and maintain the 12 Halifax-class frigates through to the end of their service lives are also being negotiated, and contracts are expected to be awarded by spring 2019.

Through a Request for Information, the Government of Canada is also currently seeking input from the marine industry on the procurement of a light icebreaking vessel to provide options for filling interim requirements in the CCG's delivery of icebreaking services for the St. Lawrence Seaway, while other ships in the fleet undergo maintenance.

Following the completion of negotiations with Chantier Davie Canada Inc., the contract award for docking-dependent refit work on Canadian Coast Guard Ship Louis S. St-Laurent was awarded in early 2019.

To support National Defence and the CCG's operational requirements, Canadian shipyards other than ISI and Seaspan's Vancouver Shipyards (VSY) will continue to undertake the construction and delivery of vessels under 1,000 tonnes, including the delivery of the next set of search and rescue lifeboats.

Chantier Davie will continue with the conversion and refit work of the second and third interim icebreakers for the CCG. The work on both vessels is expected to be completed by late 2019 and summer 2020, respectively. At that time, all three icebreakers will be able to support the CCG's operations at sea.

Finally, through the Strategy, the Government of Canada will continue to work with shipyards across the country to support emerging shipbuilding requirements, including the recapitalization of the ageing CCG fleet and the construction and delivery of ferries for Transport Canada, announced in Budget 2019. In addition, efforts to address fluctuations in production at ISI and VSY will remain a priority.

Conclusion

With advances in 2018 both in building ships and ensuring economic prosperity, the National Shipbuilding Strategy is producing positive results for the Royal Canadian Navy (RCN), the Canadian Coast Guard (CCG) and Canada.

While good progress is being made by our partner shipyards, as well as in other facilities across the country, the government will continue to assess progress and look for opportunities to improve the Strategy. This includes working directly with the shipyards to find solutions to resolve issues as they arise, such as mitigating fluctuations in production.

The economic benefits of the Strategy have been substantial, and will continue to produce results for many communities across Canada. Through the Strategy, the government will continue to develop opportunities for Indigenous Peoples and other under-represented segments of the Canadian shipbuilding workforce to receive training and long-term work.

The government will ensure that the National Shipbuilding Strategy continues to deliver on its commitment to equip the RCN and the CCG with the ships they need to serve Canadians and to revitalize our marine industry and bring jobs and prosperity to communities across the country.

Appendix – Status of large vessel projects*

Arctic and Offshore Patrol Ships

The Arctic and Offshore Patrol Ships (AOPS) will conduct sovereignty and surveillance operations in Canada's waters, including the Arctic, and conduct a wide variety of operations abroad. The AOPS project is acquiring ships, associated integrated logistics support products, jetty infrastructures in Halifax and Esquimalt and a berthing and fueling facility in Nanisivik, Nunavut.

- Shipyard of build: Irving Shipbuilding Inc. (ISI)
- Client department: National Defence
- Status: Construction in progress
- Scope: Six ships
- Project budget: \$4.3 billion

The AOPS is the first project in construction within the combat package. Through the AOPS construction, ISI is maturing its processes not only for the production of the AOPS fleet but also in preparation for the follow-on Canadian Surface Combatant fleet.

The year ahead

- The first AOPS, the future Her Majesty's Canadian Ship (HMCS) Harry De Wolf, is now in the water and is expected to be delivered to the Royal Canadian Navy in summer 2019.
- The second vessel, the future HMCS Margaret Brooke, is scheduled for launch in fall 2019.
- Construction of the third vessel, the future HMCS Max Bernays, is ongoing, with delivery expected in 2021.
- Construction of the fourth AOPS, the future HMCS William Hall, is expected to start in 2019.



*To find the latest up-to-date information on the status of NSS projects, please visit:
<https://www.tpsgc-pwgsc.gc.ca/app-acq/amd-dp/mer-sea/sncn-nss/projets-projects-eng.html>

Canadian Surface Combatant¹

The Canadian Surface Combatant (CSC) fleet will be capable of meeting multiple threats on both the open ocean and the highly complex coastal environment. These ships will ensure that Canada can continue to monitor and defend its waters and make significant contributions to international naval operations. This fleet will replace and upgrade the capabilities found in the Royal Canadian Navy's *Halifax*-class frigates and retired *Iroquois*-class destroyers.

- Shipyard of build: Irving Shipbuilding Inc. (ISI)
- Client department: National Defence
- Status: Design phase
- Scope: 15 ships
- Project budget: \$56 billion to \$60 billion

On February 8, 2019, following a rigorous bid evaluation, Lockheed Martin Canada was announced as the subcontractor to provide the CSC design and design team. The selected design is based on BAE's Type 26 frigate. The design team will now work with ISI to develop its starting point design into the final design for the CSC. These modifications are needed to meet the Navy's requirements and incorporate Canadian systems and equipment.

The year ahead

- ISI and Lockheed Martin Canada will begin the design work immediately. It is expected to take three to four years to complete.
- Construction is expected to begin in the early 2020s



¹ Artist rendering only. Not actual design

Offshore Fisheries Science Vessels

The Offshore Fisheries Science Vessels (OFSV) will provide an important platform for scientific research and ecosystem-based management to be performed. These “floating laboratories” will contribute to Canada’s stewardship of fishery and ocean resources and will replace Canadian Coast Guard Ship (CCGS) *Teleost*, CCGS *Alfred Needler* and the decommissioned CCGS *W.E. Ricker* on Canada’s West and East Coasts.

- Shipyard of build: Seaspan’s Vancouver Shipyards
- Client department: Fisheries and Oceans Canada and the Canadian Coast Guard (CCG)
- Status: Construction in progress
- Scope: Three vessels
- Project budget: \$687million

Construction on all three OFSVs is underway. In December 2017, a launch ceremony was held for OFSV 1, the future CCGS *Sir John Franklin*, after which the ship was moved to Victoria to complete construction work and trials. Construction on the third and final OFSV began in February 2017. These will be the first large vessels delivered under the National Shipbuilding Strategy.

The year ahead

Construction on all three OFSVs is expected to continue throughout the year ahead.

- Work on all three OFSVs is expected to continue throughout the year ahead.
- Construction of all three OFSVs is currently underway.
- The first vessel is expected to be delivered to the CCG in summer 2019.
- The second vessel is expected to be launched in summer 2019 and delivered later in the year.
- The third vessel is expected to be launched in spring 2020 and delivered in summer 2020.



Offshore Oceanographic Science Vessel

The Offshore Oceanographic Science Vessel (OOSV) will support oceanographic, fishery, geological and hydrographic survey missions, contributing directly to our understanding of oceans and the impacts of climate change. It will be outfitted for scientific research on ocean currents and on the seabed. This ship will replace the oldest vessel in the fleet of the Canadian Coast Guard (CCG), Canadian Coast Guard Ship Hudson, which operates on Canada's East Coast.

- Shipyard of build: Seaspan's Vancouver Shipyards (VSY)
- Client department: Fisheries and Oceans Canada and the CCG
- Status: Definition stage



- Scope: One vessel
- Project budget: \$331 million (under review)

In November 2015, Canada awarded the initial construction engineering contract to VSY to commence the work required prior to the start of construction in 2020.

In early 2019, the Government of Canada made a decision to re-sequence construction of the Joint Support Ships (JSS) and the OOSV at VSY in order to build on the momentum underway with the construction of JSS early blocks.

Under the revised sequencing, VSY will first complete construction on JSS 1, followed by construction of the OOSV and then JSS 2. It is anticipated that the start of production of the OOSV will now begin later in 2020, with delivery scheduled for summer of 2024.

The year ahead

- No activities are planned until work on other projects has advanced.

Joint Support Ships

The Joint Support Ships (JSS) will increase the range and endurance of naval task groups operating in threat environments, permitting them to remain at sea for significant periods of time without returning to port for replenishment. The JSS will also provide a home base for helicopter maintenance and operation, a limited sealift capability, and support to operations ashore. They will replace the Royal Canadian Navy's retired *Protecteur*-class auxiliary oiler replenishment vessels.

- Shipyard of build: Seaspan's Vancouver Shipyards (VSY)
- Client department: National Defence
- Status: Design and production engineering phase
- Scope: Two vessels
- Project budget: \$3.4 billion (under review)



The JSS are being built based on the TKMS Bonn/Berlin design and will include Canadian modifications. The initial design review work is now complete, and design and procurement activity has begun to competitively select the major equipment and systems to be installed in the first ship. The design and production work will entail integration of all equipment and suppliers and regulatory approval for ship construction. On completion of the work, a vessel design ready for full production and construction will be delivered.

Construction of large segments of the ship, known as early blocks, commenced in June 2018 to improve schedule and mitigate fluctuations in production within the shipyard. In early 2019, the Government of Canada made a decision to re-sequence construction of the JSS and the Offshore Oceanographic Science Vessel (OOSV) at VSY, in order to build on the momentum underway with the construction of JSS early blocks.

Under the revised sequencing, VSY will complete construction on JSS 1, followed by construction of the OOSV and then JSS 2. Work on JSS 1 continues, and the ship is expected to be delivered in 2023.

The year ahead

- VSY will move from early block construction to full production of the first JSS.

Polar Icebreaker

The Polar Icebreaker will replace Canada's current largest and most capable icebreaker, Canadian Coast Guard Ship (CCGS) Louis S. St-Laurent. It will become one of the most powerful conventional icebreakers in the world. Expected to be Canada's flagship in the Canadian Arctic, the Polar Icebreaker will significantly enhance on-water capability in the Arctic. It will be able to consistently operate farther north, in more difficult ice conditions, and for longer periods.



- Shipyard of build: Seaspan's Vancouver Shipyards
- Client department: Fisheries and Oceans Canada and the Canadian Coast Guard
- Status: Design is complete. Project will commence following completion of Royal Canadian Navy's Joint Support Ships
- Scope: One vessel
- Project budget: \$1.3 billion (under review)

Canada has committed to keeping CCGS *Louis S. St-Laurent* in service at least until the delivery of the Polar Icebreaker.

The year ahead

- No activities are planned until work on other projects has advanced.