CREATING JOBS
Seaspan Shipyards is leading the way in training and employing Canada’s next generation of highly skilled shipbuilders, including:

- Welders, pipefitters, electricians and other tradespeople.
- Professionals, such as engineers, naval architects and procurement specialists.
- More than 100 internships per year.
- 100 apprentices active across Seaspan Shipyards.

Seaspan Shipyards directly employs more than 2,300 people.

DELIVERING ECONOMIC BENEFITS AND REBUILDING A GLOBALLY RECOGNIZED MARINE INDUSTRY
The most modern shipyard of its kind in North America, Seaspan has invested more than $200 million to upgrade its facilities, equipment, and processes at Vancouver and Victoria Shipyards.

Seaspan has already committed to spend more than $850 million through a growing marine supply chain. Over 570 companies, representing more than 90% of Seaspan Shipyards’ supplier community, are Canadian suppliers who are helping to build the next generation of Navy and Coast Guard vessels.

Seaspan Shipyards’ NSS-related work is having a significant impact on the national economy. As an annual average, for the first ten years of NSS (2012-2022), Canada will realize:

- $600 million in total annual gross value of goods and services
- $290 million contribution to GDP

OFSV1, the first vessel designed and built under NSS, launched on December 8, 2017.
RE-ESTABLISHING THE CANADIAN SHIPBUILDING INDUSTRY

OFFSHORE FISHERIES SCIENCE VESSEL

HAWBOLT
Trawl Deck Equipment
Chester, NS

DBCAN
Fire Safety Equipment
Lakeside, NS

HARDING SAFETY CANADA INC.
Boat & Handling Equipment
Langley, BC

EARLS MARINE CLOSURES AND SERVICES
Hatch, Windows
Surrey, BC

PSI
Water Mist Fire Extinguishing System
Richmond, BC

GEA MECHANICAL EQUIPMENT CANADA
Fuel Oil Purifiers
Burlington, ON

HAWBOLT
Trawl Deck Equipment
Chester, NS

HERMONT MARINE INC.
Oily Water Separator
St. Laurent, QC

ADVANTEC
Shipside Weathertight Doors, Portlights, Marine Outfitting
Langley, BC

W&O SUPPLY CANADA
Ballast Water Treatment System, Centrifugal Pumps
Delta, BC

BURRARD IRON WORKS
Anchor Handling Equipment
Vancouver, BC

IDEAL WELDERS
Pipe Spools
Annacis Island, BC
MEET SOME OF OUR SUPPLY CHAIN PARTNERS

THALES CANADA
NSS work has allowed Thales Canada to invest in developing improved technology solutions for NSS ships that the company plans to leverage for future projects in Canada and internationally.

GENOA DESIGN INTERNATIONAL
Genoa from Mount Pearl, Newfoundland, is helping to build ships through the use of technology that extracts design specifications from 3D models. Since beginning work on the NSS, the company has grown 300%. It has added to its capacity and capabilities, and created an in-house academy for technical and career development.

BRONSWERK MARINE
Thanks to their contract with Seaspan Shipyards for HVAC work on the OFSV program, Bronswerk, of Brossard, Quebec, is able to build their design, manufacturing and installation capacity in Canada to take their company to the export market.

VARD MARINE
NSS work has resulted in approximately 40 new, high-value jobs within Vard Marine as well as the founding of Vard Electro Canada, formed in 2016 for the specific purpose of transferring marine electrical engineering capability and technology from Norway to Canada. Vard Electro Canada currently has seven employees working on the NSS.

JOINER SYSTEMS
Joiner Systems of Montreal, Quebec, is a leader in providing engineered solutions for marine interior outfitting. With the ability to manufacture to strict specifications, the company provides everything from insulation to furniture installation.

OUR PEOPLE

KENDALL TROUT
Steel Fitter Apprentice
Kendall Trout, a Steel Fitter Apprentice, notes that thanks to the NSS she can enjoy a career in an industry she loves while developing her skills. Asked about the opportunities that her work at Seaspan has afforded her, Kendall said: “Shipbuilding hasn’t just given me a job; it’s given me a career. I love coming to work every day. I’m constantly growing my skills and learning about the industry. The NSS is just beginning and the future looks very bright.”

BLAKE CROME
Apprentice Welder
Blake Crome, apprentice welder, is also part of the next generation of Canadian shipbuilders. Unlike work in some sectors, like the oil and gas industry in more remote parts of B.C. and Alberta, Vancouver Shipyards presents a chance for workers to build their expertise and be home with their families. Blake understands that appeal. “I knew it was going to give me the opportunity to stay local with my work,” he says.

MORE THAN $6 MILLION TO SUPPORT EDUCATION AND SKILLS DEVELOPMENT, INCLUDING:

UNIVERSITY OF BRITISH COLUMBIA
$2 million to support innovative teaching and research for the Naval Architecture and Marine Engineering graduate program at the University of British Columbia.

BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY
$300,000 to the British Columbia Institute of Technology to support Aboriginals in trades – anticipated to provide training opportunities for an additional 100 indigenous students over the next three years.

Camosun College
$300,000 to Camosun College to support the goal of boosting the number of women in trades training.

Canadian Welding Association Foundation
$300,000 to the Canadian Welding Association Foundation for new welding equipment and teacher professional development.
Canada’s Next Generation of Non-Combat Vessels

**Polar Icebreaker**
A 150m icebreaker, with year-round operational capability in Canada’s Arctic Ocean, providing essential safety, commercial, and security services to Canada’s northern communities.

**Offshore Fisheries Science Vessel**
A 63m fisheries research vessel, that will be 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 86m 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.

**Joint Support Ship**
A 174m naval support ship, deployable around the world, in any naval theatre or threat environment, it will provide fuel, ammunition, provisions, and other material to Canada’s Navy.
Seaspan Shipyards was competitively chosen to build three Offshore Fisheries Science Vessels (OFSV) under the National Shipbuilding Strategy (NSS). Purpose-built to serve the needs of the Canadian Coast Guard (CCG), these vessels will be stationed on Canada’s coasts and will support critical scientific research and ecosystem management initiatives. The vessels were designed and built to operate quietly, so as not to disturb marine life, and include the most modern trawling gear. Once complete these new vessels will provide the technology and facilities needed for Fisheries and Oceans Canada (DFO) to successfully complete oceanographic survey missions and sampling at up to 2,500 meters of depth.

These ships will serve an important role in monitoring the health of fish stocks, understanding the impacts of climate change, and supporting research that allows us to better understand the ocean environment. They will also play a critical role in supporting evidence-based decision making that protects the health of Canada’s marine environment.

The OFSV is designed to keep up with fishing trawlers of the future. These vessels will be able to trawl to depths of 2500m with 4650ekW of power.

The OFSV will be the primary offshore fisheries science platform for Fisheries and Oceans Canada.

Containing wet and dry labs specifically designed with conveyors, the OFSV is equipped to carry out science research missions.

The OFSV is equipped to carry out secondary missions, such as environmental response to protect Canada’s coasts.
3 OFFSHORE FISHERIES SCIENCE VESSELS
BUILT FOR THE FUTURE OF CANADA’S OCEAN SCIENCES

OFFSHORE FISHERIES SCIENCE VESSEL SPECIFICATIONS

<table>
<thead>
<tr>
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<tr>
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<tr>
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<td>Design Displacement</td>
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<td>Range</td>
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</tr>
<tr>
<td>Oceanographic Missions</td>
<td>11</td>
</tr>
</tbody>
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NATIONAL SHIPBUILDING STRATEGY (NSS)
As Canada’s long-term strategic partner under the NSS, Seaspan Shipyards is building the next generation of non-combat ships. With its modern new construction facilities and expert workforce, Seaspan is delivering on its commitments to the Canadian Coast Guard and Royal Canadian Navy. This package of non-combat ships includes three Offshore Fisheries Science Vessels (OFSV), the first of which was launched in 2017.
With its extensive sensor suite and permanent and portable labs, OOSV will support a range of research and be able to meet the needs of scientists now and into the future.

As part of the National Shipbuilding Strategy, Seaspan Shipyards will build the Offshore Oceanographic Science Vessel (OOSV), a fully modern and versatile science research vessel. Designed to serve the needs of the Canadian Coast Guard (CCG), the OOSV will be the primary oceanographic science platform for Fisheries and Oceans Canada (DFO). OOSV is outfitted for marine surveys and scientific research on ocean currents and the seabed. It will also monitor interactions of the ocean with winds and waves. A key part of its mission will be increasing our understanding of the impact of climate change on oceans.

In addition to serving the diverse needs of oceanographic researchers, the OOSV is capable of performing important CCG secondary missions, including search and rescue, environmental protection, and aiding navigation. This vessel will be operational year round in Canada’s Pacific and Atlantic coasts, in the Gulf of St. Lawrence and in the Arctic during the summer.

The OOSV will be the primary offshore oceanographic science platform for Fisheries and Oceans Canada.

A multi-task vessel, the OOSV will be capable of oceanographic, fishery, geological and hydrographic survey missions.

OOSV can perform Search and Rescue and contribute to our understanding of the impact of climate change on our oceans.
OFFSHORE OCEANOGRAPHIC SCIENCE VESSEL
CANADA’S MOST MODERN SCIENCE RESEARCH VESSEL

**OFFSHORE OCEANOGRAPHIC SCIENCE VESSEL SPECIFICATIONS**

- **Length Overall**: 86.1 m
- **Breadth**: 16.0 m
- **Design Waterline / Draft**: 6.2 m
- **Design Displacement**: 4,483 t
- **Cruising Speed (for range)**: 12 knots
- **Top Speed**: 13+ knots
- **Range**: 12,000 NM
- **Complement**: 56 Persons
- **Light Ship Weight (EOSL)**: 2,950 t
- **Classification**: Lloyd’s Register 2015
  - Ice Class PC6

**DYNAMIC POSITIONING**
Fitted with a system that controls the steering, propulsion and bow thruster to automatically hold the vessel, a critical function for most scientific missions.

**MULTI-MISSION CONFIGURABILITY**
The main working area of the vessel is designed with a grid pattern that allows the deck to be rearranged to adapt to the specific needs of each scientific mission.

**SAMPLE COLLECTION**
Capable of taking core samples to depths of up to 25 metres deep beneath the seafloor.

**ACOUSTIC SURVEY EQUIPMENT**
Fitted with the most modern acoustic survey equipment mounted both on the hull and in a drop keel.

**SEISMIC RESEARCH CAPABILITY**
Equipped with an air compressor, rated for 25,000 psi, used in conducting seismic research.

**NATIONAL SHIPBUILDING STRATEGY (NSS)**
As Canada’s long-term strategic partner under the NSS, Seaspan Shipyards is building the next generation of non-combat ships. With its modern, new construction facilities and expert workforce, Seaspan is delivering on its commitments to the Canadian Coast Guard and Royal Canadian Navy, including the Offshore Oceanographic Science Vessels, which will be built at Vancouver Shipyards.
With the Seaspan-built Joint Support Ships, the Royal Canadian Navy (RCN) will have the purpose-built ships necessary to support Canada’s role in the world. With the ability to support training and naval manoeuvres and to provide support to humanitarian operations and disaster relief, these ships will help Canada’s women and men in uniform to accomplish their important missions.

Her Majesty’s Canadian Ships (HMCS) Protecteur and Preserver are multi-role vessels that will provide an important auxiliary function to the RCN. They increase the range and endurance of naval task groups by permitting the vessels to remain at sea for long periods of time without needing to return to port for replenishment. They represent crucial elements of Canada’s blue-water naval capabilities and will allow the RCN to participate in operations with allies on military and humanitarian missions.

These vessels are designed and built to carry provisions like food, water, fuel and ammunition for other vessels, and provide support ashore as well as a home base for helicopter maintenance and operations. With its enhanced defensive capabilities and a crew of 239 personnel, the JSS can also support the Royal Canadian Navy in high threat environments ensuring our continued safety and security at home and abroad.

Seaspan Shipyards has worked with the Royal Canadian Navy to ensure these ships fully meet Canada’s needs and contain modern systems and equipment.
As Canada's long-term strategic partner under the NSS, Seaspan Shipyards is building the next generation of non-combat ships. With its modern new construction facilities and expert workforce, Seaspan is delivering on its commitments to the Canadian Coast Guard and Royal Canadian Navy. This package of non-combat ships includes two Joint Support Ships.

### JOINT SUPPORT SHIP SPECIFICATIONS

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<tr>
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<tr>
<td>Design Waterline / Draft</td>
<td>7.4 m</td>
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<tr>
<td>Design Displacement</td>
<td>19,648 t</td>
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<tr>
<td>Cruising Speed (for range)</td>
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<tr>
<td>Top Speed</td>
<td>20 knots</td>
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<tr>
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<tr>
<td>Classification Society</td>
<td>DNVGL (GL Rules 2012)</td>
</tr>
</tbody>
</table>
Canada’s new Polar Icebreaker will be the Canadian Coast Guard’s multi-role vessel, designed with a high degree of operational flexibility to support multiple missions, including important Arctic science programs.

The Polar Icebreaker will be a modern, multipurpose, 3-season vessel, with the ability to overwinter as needed. The ship will be capable of breaking up to 2.5 metres of ice and can sustain operations in 2.2 metres of level ice. This ice breaking capability is a key design feature which allows the Canadian Coast Guard (CCG) to deliver a variety of important programs.

Some of these missions include search and rescue, environmental response, marine navigation, icebreaking and arctic science. The Polar Icebreaker will also support Community and Northern resupply missions through escort icebreaking to allow commercial fleet owners to deliver goods. The Polar Icebreaker can also deliver goods directly when commercial options aren’t available.

This vessel is configured to minimize the exposure of the crew and mission personnel to extreme weather conditions, making the Polar Icebreaker a vital instrument for carrying out important Canadian Coast Guard missions in the Arctic.

The Polar Icebreaker will support Canada’s Arctic missions, sovereignty, and presence.

Canada’s Icebreaker has a logistical endurance of 270 days in the Arctic.

The Polar Icebreaker is a modern, multi-purpose, three-season vessel, capable of safely overwintering.
**POLAR ICE BREAKER**

**BUILDING CANADA'S MULTI-MISSION POLAR ICE BREAKER**

**POLAR ICE BREAKER SPECIFICATIONS**

- Length Overall: 150.1 m
- Breadth: 28.0 m
- Design Waterline / Draft: 10.5 m
- Design Displacement: 23,700 t
- Max Speed: 18 knots
- Range: 26,000+ NM @ 12 knots
- Complement: 60 Core + 40
- Light Ship Weight: 15,481 t
- Classification: Lloyd's Ice Class PC2

**HELICOPTER OPERATIONS**

Fully outfitted for Arctic operations with a hangar that can accommodate two medium-lift helicopters.

**GARAGE**

Equipped with a garage to accommodate vehicles to support various mission requirements and activities taking place on ice.

**MOON POOL HANDLING SYSTEM**

Designed to safely deploy science equipment through the centre of the vessel in ice-infested waters.

**HIGH-ARCTIC OPERATIONS**

Designed to carry out missions May through January and able to safely operate over winter in the Arctic.

**ICE-BREAKING CAPABILITY**

Capable of breaking 2.5 metres of ice at 3 knots.

**NATIONAL SHIPBUILDING STRATEGY (NSS)**

As Canada's long-term strategic partner under the NSS, Seaspan Shipyards is building the next generation of non-combat ships. With its modern new construction facilities and expert workforce, Seaspan is delivering on its commitments to the Canadian Coast Guard and Royal Canadian Navy. This package of non-combat ships includes one Polar Icebreaker.