TP 14552

Making Connections

Shortsea Shipping in Canada

Transport Canada Transports Canada

Canada

Contents

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Shortsea Shipping:

In the North American context, "shortsea shipping" refers to a multi-modal concept involving the marine transportation of passengers and goods that does not cross oceans and takes place within and among Canada, the United States and Mexico. Within Canada itself, there may be considered to be five major shortsea shipping regions: the West Coast; the Great Lakes and the Seaway; the Laurentian area (that is, the St. Lawrence east of Montreal); the Atlantic Coast; and the Arctic.

A Viable Option

This concept of shortsea shipping supports the development of an efficient, integrated transport system for North America, and can help meet the commercial, social and environmental needs of the continent's growing population and expanding trade. From an environmental perspective, for example, shortsea shipping can offer air quality improvement, reduce traffic congestion and mitigate noise pollution. By most indices, marine shipping tends to have lower environmental and social impacts than land transport.

Shortsea shipping holds potential economic advantages as well. Not only do its environmental improvements lower overall socio-economic costs, but there can also be direct, bottom-line benefits in some circumstances. Moderating surface traffic could reduce the costs of maintaining Canada's road infrastructure and make the transport of goods more efficient by reducing traffic congestion. The expansion of shortsea trade could encourage greater and better employment in the marine sector and could mitigate current worker shortages in other types of transportation.

Making Connections: Shortsea Shipping in Canada sets out a brief overview of how shortsea shipping is already producing these benefits by complementing land transport and examines its potential for further development.

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The West Coast

The West Coast region refers to all coastal waters and navigable rivers on the West Coast of British Columbia.

The evolution of West Coast shipping

Many small communities developed on the British Columbia coast during the early 19th century, but the absence of roads meant that their needs could be met only by water. By 1887, coastal shipping had become the preserve of the Canadian Pacific Railway (CPR), the Canadian National Railway (CN), Union Steamships and various tug and barge operators. This lasted until just after the Second World War, when rapid structural changes began as a result of increasing automobile ownership, government investment in highways, the ascendancy of truck transport and the use of containers.

Seaspan Coastal Intermodal Company

Seaspan Coastal Intermodal Company (SCIC) provides intermodal ferry service between its Tilbury terminal on the Fraser River and terminals in Nanaimo and Schwartz Bay on Vancouver Island. Historically, these services were owned and operated by CP Rail, but in 1997 they were sold to Seaspan International, Canada's largest tug and barge operator. Most of SCIC's traffic is truck trailers, although it also transports rail cars.

The Black Ball Ferry

The Puget Sound Marine Navigation Company, operating as Black Ball, was founded in 1928 and provided ferry services throughout Puget Sound, including service to Victoria. The Black Ball Ferry now operates between Port Angeles and Victoria Inner Harbour. The service is year-round, although its frequency is reduced during the winter.

West Coast shipping today

Despite these changes, shortsea shipping in British Columbia has thrived, especially where direct road connections do not exist, or where logistics, such as the shipping of forest products, demand it. In fact, during the past ten years, shortsea transport has been slowly replacing direct calls by deepwater vessels at coastal pulp mills and sawmills.

A small number of companies — including BC Ferries, Smit, and Washington Marine Group (including Seaspan International, Seaspan Coastal Intermodal and Norsk) — provide the greater part of shortsea shipping services in the region. Transport of forest products by tug and barge is the primary activity, with the transportation of logs and wood chips accounting for most of these movements. Gravel and crushed stone also make up a large proportion of the West Coast's shortsea domestic trade. In non-domestic trade, shipments to the United States consist mainly of petroleum products, supplemented by gravel, crushed stone and forest products.

The future of West Coast shipping

The primary reason for examining the shortsea option is to determine whether it can enhance supply chain logistics and reduce congestion related to road transport.

The most promising area for innovation appears to be the movement of marine containers between deep sea terminals and off-dock locations that have water access. This new approach envisages the creation of distribution, storage and production centres together on suitable land; "suitable land" here means that there is access to high-quality marine, road and rail services, that there is no competing or incompatible land use, and that the host municipality supports the facility.

Such a system could reduce the amount of congestion on Greater Vancouver's roads. It would also simplify the movement and storage of empty marine containers, improve the cost efficiency of the logistics chain and contribute substantially to the competitiveness of the Pacific Gateway.

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The Great

The Great Lakes and the Seaway region covers both the Canada and U.S. sides of the border, and the St. Lawrence as far as Montreal.

The evolution of shipping on the Great Lakes and the Seaway

The Great Lakes and the St. Lawrence River have been marine highways for centuries. From the 1840s on, lock systems bypassed the natural barriers of the Niagara Escarpment and the St. Lawrence rapids, and encouraged the marine movement of freight and passengers. One major carrier was Canada Steamship Lines, which operated its package freighter service from 1904 to 1982 and carried everything from vehicles to canned goods. Canada Steamship Lines remains a key player, operating a large proportion of Canada's self-unloader fleet involved in shortsea trades on the Great Lakes. Another player, Great Lakes Forest Products, operated its 32-rail car capacity ferry, the Incan Superior, between Thunder Bay and Duluth on Lake Superior. The service ran from 1974 to 1992.

The St. Lawrence Seaway System has been a vital contributor to the economic development of Canada and the U.S. Midwest. Construction began in 1829 with the building of the Welland Canal — the system was completed to its present form in 1968. The System comprises three segments: the Montreal-Lake Ontario section, the Welland Canal and the United States locks at Sault Ste. Marie.

Self-unloading ships

A unique feature of the Great Lakes and the Seaway region's shortsea trade is the use of self-unloading vessels. Unlike bulk carriers, these can move their cargoes onshore without the aid of dockside cranes. They are highly productive; during a Great Lakes shipping season, an average self-unloader can transport almost three times as much cargo as the average bulk carrier. As a result, self-unloaders dominate most of the Great Lakes dry cargo trade, with the exception of grain.

Shipping today on the Great Lakes and the Seaway

The Great Lakes and the Seaway region supports a very diverse shortsea trade, both internally and with the adjacent Laurentian region (the St. Lawrence below Montreal). Much of the coal that fuels Ontario's power stations is shipped across Lake Erie from the United States while wheat and agricultural products move from Lake Superior to St. Lawrence ports. A large part of the iron ore trade consists of return cargoes travelling from the Quebec North Shore to steel mills in Ontario and the United States.

The future of shipping on the Great Lakes and the Seaway

Several new shortsea services have been proposed for the Great Lakes region including three ferry services.

One proposed ferry service would run across Lake Erie from Port Stanley, Ontario, to Cleveland, Ohio, targeting the long-haul traffic that currently uses the Windsor border crossing.

Lakes and the Seaway

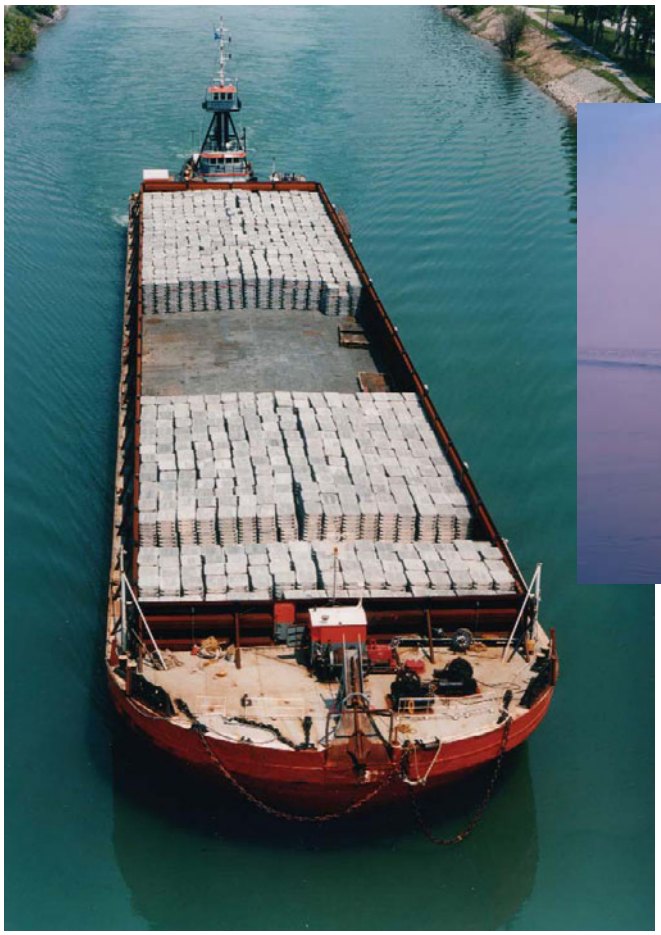
Additionally, marine transportation is responsible for removing over 60,000 trucks from roads of southern Ontario and Quebec, regions characterized by high urban congestion.

The Canadian fleet is optimized for transit through the Seaway. Activity in the United States, although considerably higher in volume than in Canada, occurs largely within the Great Lakes.

Another proposed ferry service would operate across Lake Erie between Nanticoke, Ontario, and Erie, Pennsylvania, and could accommodate both long-haul traffic and the Pittsburgh region traffic that now uses the Niagara gateway. On Lake Ontario, an Oswego-Hamilton service would serve the long-haul traffic travelling to and from the U.S. eastern seaboard between the Philadelphia and Boston regions.

St. Mary's Cement Ltd.

St. Mary's Cement Ltd. is a recent example of a company that has found marine transport to be a viable way to complement shipping by truck or rail. While most of the firm's domestic trade is carried by road and rail (the company owns Hutton Transport, a trucking line), it also operates a cross-lake shipping link using its fleet of three tug-and-barge units. This link serves the company's markets in Michigan, Ohio and Wisconsin.



The

The Laurentian Region consists of the Gulf of St. Lawrence and the St. Lawrence River east of Montreal.

The evolution of Laurentian shipping

Organized cargo transport on the St. Lawrence began with the formation of La Compagnie du Richelieu in 1845. In 1874, the company merged with the Canadian Steam Navigation Company as the Richelieu and Ontario Navigation Company (R&O). R&O continued to expand in the St. Lawrence, although primarily in passenger transportation rather than freight. Ultimately, R&O merged with the Northern Navigation Company and, in 1913, became Canada Steamship Lines. Another line that provided many years of service in the region was the Clarke Steamship Company, which served the Quebec North Shore and the Gaspé.

Laurentian shipping today

Much of the Laurentian shortsea traffic is iron ore moving through the St. Lawrence Seaway to Ontario and to U.S. steel mills. Iron ore has been a mainstay of Laurentian shortsea trade since the opening of the Seaway, and may have new opportunities within the U.S. integrated steel mill sector.

Salt became part of the region's internal trade after the opening of the salt mine on Îles-de-la-Madeleine in 1980. Another regional feature is the high volume of ilmenite (iron titanium oxide) moved by shortsea shipping from Havre-Saint-Pierre on Quebec's North Shore to the processing facilities in Sorel-Tracy, near Montreal. In inter-regional trade, the container traffic between Montreal and Newfoundland is Canada's busiest domestic, intermodal marine operation.

Shipping aluminum ingots

In 2005, Aluminerie Alouette, together with McKeil Marine and Logistec, introduced a new barge service to haul aluminum ingots. The movement is primarily between Sept-Îles and Trois-Rivières, using a specially converted deck barge. Shipments through the Seaway to Oswego and Toledo are also a part of the distribution pattern for the service.

Shipping wood chips

Kruger, a major Quebec paper company, has two mills that use 150,000 tonnes of wood chips annually. The company, together with the firm Groupe Océan, began using barges in 2005 to reduce the number of truck movements required to meet its needs. Trucks are still used, but the operation has considerably reduced traffic on Route 138 and on the ferry between Baie-Sainte-Catherine and Tadoussac.

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Laurentian Region

Because the St. Lawrence divides Quebec's resource-rich north shore from the south shore's markets and continental transportation links, ferries have always played an important role in the province's transportation mix. The 530 kilometres of river between Sept-Îles and the first bridge at Quebec City are crossed by several ferries, some operated by the provincial government and others by private firms.

Shortsea tramping service

Dismar, a subsidiary of the Upper Lakes Group (ULG), has been using tug-and-barge units (Mississippi type) for shortsea operations since 2003. Cargoes have been mainly grain for sister companies within ULG, but petroleum coke and wood chips have also been carried. Dismar is currently preparing for cross-border shipping operations into New York State.

The future of Laurentian shipping

A current shortsea initiative promises to reintroduce the marine shipment of petroleum products from Saint-Romuald to Saguenay/Grande-Anse. Restoring this service, which was discontinued in 1992, would greatly reduce the road movement of petroleum products through the Laurentian Wildlife Reserve, via Route 175, and thus reduce the threat of environmental damage. Shortsea tanker movements could represent a viable complement to road transport in this situation.

Quebec Shortsea Shipping Roundtable

Since 2004, the Quebec Shortsea Shipping Roundtable has been acting as a catalyst for shortsea shipping in the region. The Table's main objectives are to create a clearinghouse for information and expertise, communicate information, and promote shortsea shipping projects.

Three other new services — shipping of aluminum ingots, shipping of wood chips and the establishment of a shortsea tramping service — have also been successfully introduced, and further opportunities are being explored in Quebec and within the St. Lawrence Seaway System.

The Atlantic

The Atlantic region consists of all provinces east of Quebec. It reaches to Cape Chidley in the north and to New York City in the south.

The evolution of Atlantic shipping

The Atlantic is home to centuries of Canadian maritime tradition, with lines such as the Quebec Steamship Company, Newfoundland Canada Steamships and the Farquhar Line providing services that connected St. John's, Halifax, Boston and New York. Their ships carried everything from passengers to livestock to lumber.

OCEANEX

The service operated by OCEANEX Income Trust originated in a line run by Clarke Steamships in the early 1920s. The current four-vessel fleet carries goods such as automobile imports and containerized forest products between Montreal and Newfoundland, and between Halifax and Newfoundland. It typically offers two sailings per week on each route, although this may be reduced in winter.

Passenger and freight vessels sailing from the Atlantic region also maintained connections with St. Lawrence ports from the time of Confederation until the Second World War. Many of the companies that owned these ships provided regular liner services into the Great Lakes as well.

Atlantic shipping today

Shortsea cargo is currently dominated by crude oil shipments drawn from Newfoundland's offshore wells. Most shipments to the United States are petroleum products, with cross-border movements beginning both at the Irving refinery at Saint John and at the Port Hawkesbury transshipment terminal on the Strait of Canso. The latter receives international cargoes of crude oil in large tankers and transfers it to smaller vessels for shipment to the eastern seaboard of the United States.

Gypsum is also a major commodity, being shipped in bulk to the United States from Nova Scotia. Shortsea trade within the region is largely to and from Newfoundland, but there is also inter-regional trade between the Laurentian region and Newfoundland.

The Atlantic region is home to one of Canada's major shortsea shipping success stories, the service operated by OCEANEX Income Trust. Among the benefits of this intermodal service, which operates between Newfoundland and the Laurentian region, has been the reduction of highway traffic through the three Maritime provinces and Newfoundland and Labrador by approximately 60,000 two-way trailer trips per year.

The future of Atlantic shipping

Container feeder services have been re-established between Halifax and the eastern seaboard of the United States, with an expanded cargo base that should offer long-term stability to the industry. As well, a shortsea operation using a new icebreaking vessel, the Umiak 1, will begin in 2006 between Edward's Cove in Labrador and Quebec City. This will move the nickel concentrate produced at Inco's Voisey Bay mine.

In addition to the Voisey Bay project, two further services are being planned for the Atlantic region. One is to re-establish marine delivery of petroleum products to Miramichi and a second is to set up a freight ferry service between Belledune, New Brunswick and Corner Brook, Newfoundland.

Transport Canada has studied a third opportunity that would have involved marine transport of containers from the Atlantic region into Lake Ontario. However, the study shows that several challenges must be surmounted in order to make this proposal viable.

Northumberland Ferries/ Bay Ferries

Northumberland Ferries Ltd. operates a seasonal service between Wood Islands, Prince Edward Island, and Caribou, Nova Scotia, while its subsidiary, Bay Ferries Ltd., runs a non-seasonal, fast-ferry service between Yarmouth, Nova Scotia, and Bar Harbour, Maine. Bay Ferries also has a service between Digby, Nova Scotia, and St. John, New Brunswick. The company is actively seeking new routes and markets, and new business opportunities.

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The Arctic

The MV Arctic

The motor vessel Arctic was originally built as a public-private partnership venture between the Government of Canada and Canadian shipping companies. Having fulfilled its original mandate of supporting resource development in the Arctic, and operating as a test vessel for Arctic navigation, the MV Arctic has for many years been the world's most ice-capable ore/bulk/oil vessel. Now owned by Fednav International Ltd., the vessel currently transports nickel concentrates from Deception Bay to Quebec City year-round under contract to Falconbridge Limited.

The Arctic region covers all marine activity west of the Boothia Peninsula and north of Hay River on Great Slave Lake. It also covers shipping in the eastern Arctic, including Nunavut's Kivalliq and Qikiqtaaluk regions, as well as Nunavik, Hudson Bay and James Bay.

The evolution of Arctic shipping

Arctic communities east of the Boothia Peninsula were traditionally supplied from southern Canada by the Hudson's Bay Company. The western Arctic was also served by the Hudson's Bay Company via the Mackenzie River.

Construction of the radar stations of the Mid-Canada Line and the DEWline, which lasted from the late 1940s through the early 1950s, created a major demand for shortsea shipments of goods and oil, a demand that continues today. This service was ultimately taken over from the Hudson's Bay Company by other commercial interests. In addition, the Canadian Coast Guard managed the shipment of petroleum products and dry goods to the Arctic for many years.

Arctic shipping today

During the ice-free season, the movement of petroleum products dominates Arctic shortsea shipping. These shipments travel via the Mackenzie River in the Northwest Territories to the western Arctic. In the eastern Arctic, petroleum products are shipped from Montreal and Churchill to the Qikiqtaaluk and Kivalliq regions of Nunavut.

In addition to petroleum and dry cargo shipping, there is also a year-round shortsea movement of nickel concentrates between Deception Bay and Quebec City. This operation, which began in 1998, is one of the few concentrate trades remaining in the Arctic.

Finally, there is a cross-border shortsea operation that uses chartered vessels to move concentrates from the Red Dog mine in Kotzebue Sound, Alaska, to Vancouver. From Vancouver, the concentrates move by rail to Trail, British Columbia, for processing.

The Northern Transportation Company Ltd.

The Northern Transportation Company Ltd. (NTCL) and the Petroleum Products Division of the Government of the Northwest Territories ship petroleum products from Vancouver to the western Arctic by barge. This is intended to reduce the cost of petroleum products in that area, to free up NTCL barge capacity on the Mackenzie River and to prepare for the possible construction of the Mackenzie pipeline.

Dry cargo shortsea activity in the Arctic exists mainly to resupply those communities in Nunavik, Nunavut and the Northwest Territories that can be served, in an economical way, only by marine transport. The lack of Arctic port facilities, however, means that most dry cargo is handled over beaches after being shuttled in on smaller vessels. This approach, coupled with the lack of warehouse facilities, severely limits the use of freight containers. Consequently, most cargo is still carried as crated general freight.

The future of Arctic shipping

In the eastern Arctic, there are few opportunities for shortsea operations, although transshipment of fuel may eventually have potential either at Iqaluit or Nanisivik. Dry-goods transshipment is not economically or logistically feasible within the normal open-water season.

The Izok Lake lead/zinc/copper concentrate mine originally envisaged the movement of concentrates north to the Coronation Gulf, but this was too costly to justify development. However, there may be potential for a land route to Bathurst Inlet to significantly reduce these costs. Furthermore, by establishing possible southern road links, a Bathurst Inlet terminal could benefit resource exploration and development in both Nunavut and the Northwest Territories. Such developments create potential for Arctic resource development, and therefore shortsea shipping supply opportunities.

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Challenges

Shortsea shipping can offer a viable, cost-effective and environmentally friendly transportation option that complements the current and future movement of goods and passengers in almost all regions of Canada. However, there are several potential challenges to the expansion of Canadian shortsea shipping.

A number of these challenges are operational and/or market-related. Among them are a shortage of suitable port infrastructure and water terminal facilities, and the current need for greater integration among providers of the various modes of transportation. As with other modes, a steady and reliable flow of cargo is also required to ensure the viability of new services; this is especially challenging where seasonal constraints on marine shipping are a factor.

Regulations and other institutional arrangements constitute another set of challenges to selected shortsea shipping operations. For instance, proponents may face various tariff and non-tariff barriers when bringing ships into domestic service. As well, North American regulatory regimes and recent security measures related to ferry and other commercial maritime traffic may represent significant obstacles.

Costs are a third potential impediment to the introduction of new shortsea shipping applications or the expansion of existing operations. Among these are service and user fees, excise taxes and the additional costs associated with seasonal operation. Financing may also be an issue for some proponents.

Nevertheless, these challenges can be met with creative and well-planned approaches to business case development, coordinated policy formulation, sharing of best practices, and through dialogue among the numerous stakeholders involved in shortsea shipping.

Transport Canada has taken important steps to initiate dialogue around the shortsea shipping concept in Canada. However, in order to fully meet the challenges, it is up to industry and governments to develop ways to move forward together to enhance shortsea shipping and fully realize its benefits.

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Initiatives

Since 2003, Transport Canada explored opportunities to promote shortsea shipping in Canada. In positioning this type of shipping among a range of policy initiatives, Transport Canada has taken a multi-faceted approach that is intended to foster international and regional cooperation, stakeholder consultation, promotional activities, and research and analysis. The following initiatives have been among the most important:

- In 2003, Canada, the United States and Mexico signed a Memorandum of Cooperation on Sharing Shortsea Shipping Information and Experience.
- Between September and December 2003, Transport Canada held eight consultations across Canada on the shortsea shipping industry.
- Beginning in March 2004, Transport Canada participated in developing the Quebec Shortsea *Shipping Roundtable. Transport Canada continues* to be an active member of this group, whose steering committee includes representatives from the marine industry and from two levels of government.
- In November 2004, Transport Canada, in association with the National Marine and Industrial Coalition, hosted a National Marine Conference on Shortsea Shipping in Montreal, Quebec.
- In April 2006, Transport Canada hosted the first North American Shortsea Shipping Conference in Vancouver, British Columbia.
- Transport Canada has funded, and continues to fund or contribute to, numerous key regional and bi-national shortsea shipping studies and research projects. These include market feasibility studies of shortsea shipping on both the east and west coasts, as well as in the Great Lakes/St. Lawrence Seaway system.

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Moving Forward

Moving forward to enhance shortsea shipping in Canada is founded on the premise that the integration of shortsea shipping in the national transportation system can benefit quality of life, the environment and the economy. Furthermore, as a trading nation, Canada's prosperity depends upon the efficient functioning of our trade gateways and corridors. Shortsea shipping can help develop the integrated and viable transportation networks that will enhance trade and economic opportunities.

However, a number of logistical, economic and financial challenges must be overcome to maximize the benefits of shortsea shipping. Meeting these challenges will require a collaborative approach to disseminating information on the potential benefits of shortsea shipping, solidifying an understanding of its viability as well as barriers, and implementing workable solutions.

Formulate a national approach to shortsea shipping

The policy and market considerations associated with shortsea shipping are complex and interdependent, having social, economic and environmental components that cannot always be neatly compartmentalized, as issues tend to cut across several jurisdictions. A national approach to shortsea shipping requires collaboration between the players involved at all levels of government, in coordination with key stakeholders. Transport Canada will act as a catalyst for the development of a nationally integrated approach to shortsea shipping by liaising with federal departments and provincial counterparts and through collaboration with industry. Such an approach would ensure a more strategic engagement of the relevant players, and foster better coordination in areas of research, communication and policy development.

Establish a North American shortsea shipping strategy

There is a significant international component in the potential for shortsea shipping. Enhancing trilateral cooperation is therefore essential to maximizing the success of shortsea shipping for Canada. Transport Canada will continue to work with its North American shortsea shipping partners to build upon the existing Memorandum of Cooperation among Canada, the United States and Mexico. Transport Canada will purse an active trilateral relationship to explore the mutual benefits of shortsea shipping, identify mechanisms to mitigate barriers, implement trilateral promotional activities, investigate specific cross-border corridors, and ultimately develop a North American shortsea shipping strategy.

Advance a shortsea shipping research agenda

Shortsea shipping supporters recognize that, at present, there are important shortcomings in the availability of meaningful information on shortsea shipping in Canada. This hampers efforts to develop credible and effective policy interventions at all levels of government, as well as increases the level of risk and uncertainty in the market for proponents of new shortsea shipping applications. Transport Canada will continue to work in concert with others to enhance shortsea shipping knowledge in the key areas of policy, markets, trade, urban transportation, technology and sustainability.

Transport Canada's ultimate vision is to help realize the benefits that shortsea transport offers to Canadians, to the shippers of goods and to the various elements of Canada's transportation system, and to do so while respecting the realities of the competitive marketplace.

Making Connections

Shortsea Shipping in Canada

For more information:

www.tc.gc.ca/shortsea