

Environment and Economy

Toward sustainable navigation on the St. Lawrence



Photo : Denis Lehoux, Environment Canada

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The St. Lawrence Action Plan

Since 1988, the governments of Canada and Québec have been engaged in a vast, shared operation called the St. Lawrence Action Plan, better known as St. Lawrence Vision 2000 (SLV 2000). SLV 2000 has been implemented through a series of five-year agreements aimed at the protection, conservation and restoration of the St. Lawrence River. It is one of the largest environmental initiatives undertaken to protect and conserve our major ecosystems.

The approach, targeting concrete, measurable results, was considered daring from the outset, and has served as a model for similar initiatives elsewhere in Canada.

Under the third five-year agreement, signed in Montréal on June 8, 1998, the Canadian government and the Québec government will contribute \$123 million and \$116 million, respectively, to Phase III of SLV 2000. The three main objectives of Phase III are to protect ecosystem health, to protect human health and to foster involvement by riverside communities with a view to increasing access to the St. Lawrence and recovering its various uses.

The agreement provides for six areas for action (components) corresponding to specific SLV 2000 objectives, and six consensus-building committees to work in those areas. The six components are biodiversity, industrial and urban issues, agriculture, human health, community involvement and—more recently—navigation.

Navigation

Phase III of SLV 2000 brought with it a new component devoted to **navigation and the environmental impact of shipping and recreational boating**. The navigation component was structured to reflect new approaches in the action plan—notably targeting ways of using the St. Lawrence—and an increasing public interest in environmental problems related to shipping and recreational boating.

When dealing with the St. Lawrence—one of the largest freshwater and marine systems in the North America—the general trend is inescapable: sustainable development and climate change are concerns that draw industry, and the transportation sector as well, into the heart of an increasingly complex discussion surrounding the protection of ecosystems and the maintenance of economic activities. Each new development or project involving the St. Lawrence attracts greater attention.

In November 1998, the SLV 2000 Consensus-building Committee on Navigation held its first meeting. It has until March 2003 to complete its mission.

The Consensus-building Committee on Navigation

The main mission of the Navigation Committee is to “develop and implement a navigation management strategy consistent with sustainable development on the St. Lawrence and in co-operation with the shipping industry, environmental interests, the governments, and the public”. To tackle this awesome task, and, especially, to provide some chance of achieving concrete results, all of the main players concerned by the environmental issues involved in navigation had to be brought together from the start.

Accordingly, the committee was formed in terms of three essential groups: governments, the shipping industry, and the environmental and community sector. Total representation of all interests was naturally unfeasible, but the main idea was to form a workable committee, with significant non-governmental participation, composed of fewer than twenty members who could report to their various organizations.

MEMBERS ORGANIZATIONS CONSENSUS-BUILDING COMMITTEE ON NAVIGATION SLV 2000 – PHASE III

Fisheries and Oceans Canada Transports Québec

Environment Canada
Transport Canada
Environnement Québec
Faune et parcs Québec

Montreal Port Authority
Amis de la vallée du Saint-Laurent
St. Lawrence Shipoperators Association
Corporation of Mid St. Lawrence Pilots
Shipping Federation of Canada
St. Lawrence Economic Development Council (SODES)
Société d'initiative et de conservation du Bas-Richelieu
Stratégies Saint-Laurent

To illustrate, the link between the Navigation Committee and the Priority Intervention Zones (ZIP) is ensured by Stratégies Saint-Laurent (SSL), a non-governmental organization which has been active in consensus-building with riverside communities since 1989. Similarly, industry stakeholders are reached by representatives of organizations such as the St. Lawrence Economic Development Council (SODES), the St. Lawrence Shipoperators Association and the Shipping Federation of Canada.

A Consensus-Building Approach

A now common approach to environmental issues is based on the pressure-state-response (PSR) model developed by the Organization for Economic Co-operation and Development (OECD). PSR is a general representation of the causal links between the pressures exerted by human activities on the environment, changes in the state of the environment resulting from those pressures, and society's responses, that is to say, the measures taken by social actors such as governments, private business and NGOs with regard to pressures on, and the state of, the environment.

Since 1998, the Navigation Committee has been working on identifying pressures: what are the true environmental impacts of shipping and recreational boating activities on the St. Lawrence? This period of stock-taking was indispensable: before taking action of any kind, it is essential to know what is really happening, to get beyond impressions and intuitions. Nor is the exercise one-sided: some aspects of shipping on the St. Lawrence may be of benefit to the environment.

At the same time, the Navigation Committee is working on responses: what concrete action can be taken to improve the situation on the St. Lawrence? In this area, consensus-building is the best approach. Rarely does any single organization, public or private, alone possess the silver bullet solution. Account must be taken of the expertise,

interests and capacity for action of each stakeholder in fields that are often extremely complex, whether it be from a scientific, decisional and institutional, or economic and commercial standpoint. A realistic approach, i.e. one adapted to the existing situations and means of dealing with them, must improve the chances for consensus and the implementation of the solutions contemplated. In other words, the recommendations must be doable.

Objectives, issues and accomplishments

An Assessment of Navigation

Objective: to make a complete assessment of commercial and recreational boating on the St. Lawrence, addressing environmental, social and economic concerns.

What impact does navigation have on the ecosystem of the St. Lawrence and what role does navigation play in our economy and our society? What are the main challenges in this area?

A first stage of work consisted in bringing together all of the basic facts about the environmental problems affecting the St. Lawrence. This legwork yielded the report entitled *The Environmental Risks and Impacts of Navigation on the St. Lawrence (August 2000)*, which laid the foundation for the assessment to be made by the Navigation Committee.

It was also necessary to establish a profile of navigation on the St. Lawrence. The different business, shipping operations, ports, agencies and associations linked to activities on the St. Lawrence were hardly known outside the specialized shipping and environmental communities. It is hard to act if the main players and the socio-economic context of navigation remain unknown and are left out of account. A socio-economic profile of navigation on the St. Lawrence (*Portrait socioéconomique de la navigation sur le Saint-Laurent*), issued in April 2000, illustrates the significant role of shipping activities on the St. Lawrence.

There is a very special complement to this assessment. It consists in taking an ecosystem approach to the question of the environmental impact that would result from underutilization of shipping on the St. Lawrence. The study of environmental impacts has been completed and provides very useful information on greenhouse gas emissions, among other things. Greenhouse gases play a role in climate change and are suspected of having an influence on water levels, which permit or prevent navigation.

Dredging and Sediment Management

Objective: to set up a mechanism for the environmental monitoring of navigation-related dredging on the St. Lawrence and to improve sediment management. What are the strong and weak points of the current framework for dredging operations? How can existing processes be improved upon? What type of sediment management is most appropriate?

In this very sensitive area, a working group formed of the best experts from both governments provides the Navigation Committee with the elements required to work toward improved operations and assessment methods.

Integrated management of dredging and sediments represents a major challenge. The assessment in this area is very important to dredging promoters, environmental and community groups, and the governments. Industries want stable yardsticks for environmental requirements. Environmental groups want to ensure that necessary precautions are taken. Community groups want to have their say. A preliminary statement on integrated dredging management, drawing on American research and adapting it to the needs of the St. Lawrence, is in preparation and will be proposed to the various stakeholders in this area.

A profile of dredging operations on the St. Lawrence (*Portrait des activités de dragage dans le Saint-Laurent*) is also being prepared, as a supporting document. It follows a comparative study of the public involvement process related to dredging operations management (*Étude comparative des processus d'implication du public dans le cadre de la gestion des activités de dragage*), issued in March 2000, and a comparative review of information on dredging operations management and on sediment quality assessment tools (*Revue d'information commentée sur la gestion des activités de dragage et sur les outils d'évaluation de la qualité des sédiments*), issued in May 2000.

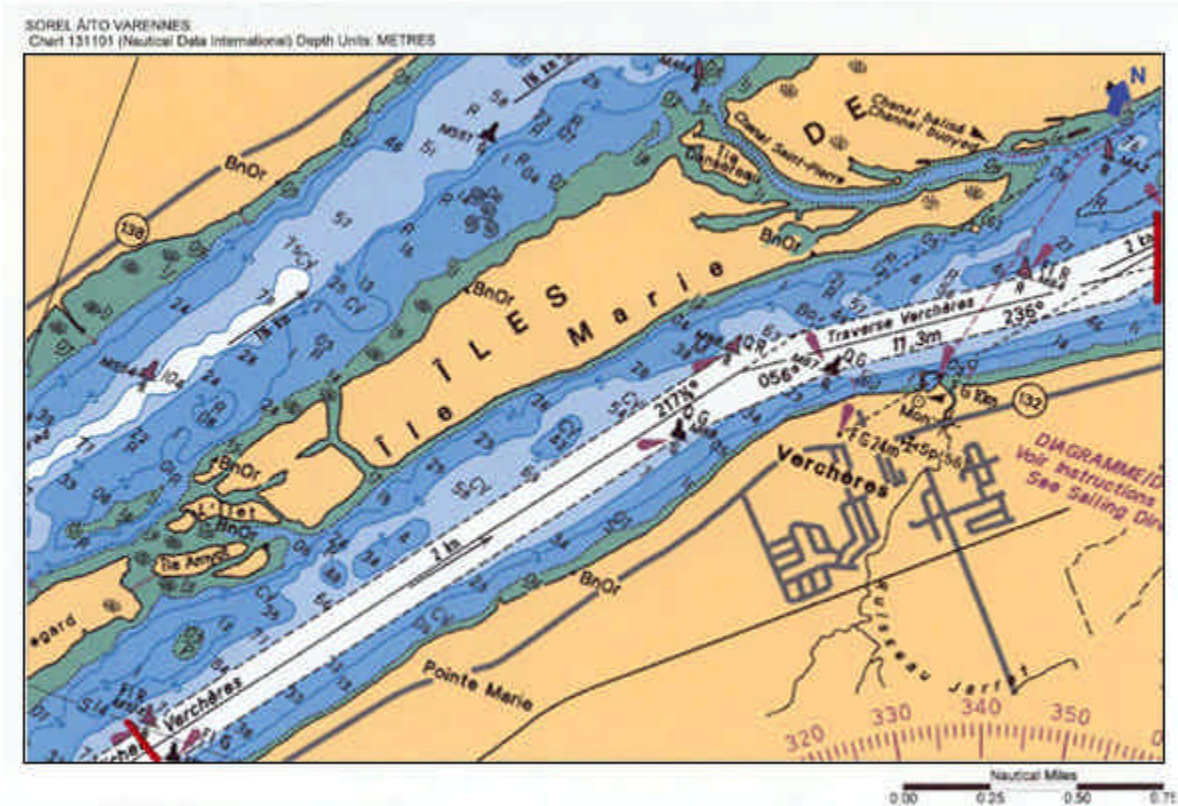
Ship speed and shore erosion

Objective: to protect the banks of the St. Lawrence from erosion resulting from commercial shipping and recreational boating. Which zones are sensitive to ship and pleasure-boat traffic? What measures must be taken to reduce adverse impacts?

As with other issues, a preliminary assessment was required: for one year now, a working group on shore erosion has been carrying out an in-depth study on the relationship between ship and boat traffic and shore erosion. A report on the influence of commercial shipping and pleasure boating on the erosion of the banks of the St. Lawrence between Cornwall and Montmagny (*Érosion des rives du Saint-Laurent: influence de la navigation commerciale et de plaisance sur l'état des rives du tronçon Cornwall-Montmagny*) has just been completed (October 2000) and the results will be made available on the SLV 2000 website.

This groundwork has led to a remarkable initiative. The industry representatives on the Navigation Committee have formed an *ad hoc* committee which has established a voluntary program to reduce travel speeds of commercial vessels on the section of the St. Lawrence most sensitive to ship-generated waves.

See also : “Shipping industry introduces a concrete measure for reducing shoreline erosion” in *Le Fleuve* Newsletter, vol. 11, no. 9, February 2001.



Spill risk

Objective: to develop the tools and guides required to improve the management of environmental risks and dangers. What measure or tool is needed to make navigation an increasingly safe activity? How can the effects of accidental spills be limited?

In this very sensitive area, many measures already exist, and the small number of serious accidents testifies to the successful control of safety on the St. Lawrence. Improvements are always welcome, of course. A significant navigation component project under way is the experimental use of soil bacteria to restore oil contaminated freshwater grass beds. (See “Bacteria to the rescue of oil-soaked aquatic vegetation” in *Le Fleuve* Newsletter, vol.11, no. 3, June 2000). If this “field” experiment in bio-restoration is conclusive, the technique may be applied in St. Lawrence grass beds between Cornwall and île d’Orléans when accidental spills occur. Emergency teams would have a new tool to help them restore these productive, but vulnerable, habitats. It goes without saying that no one hopes the technique has to be used too often.

Ballast water

Objective: to put in place regulations or a code of good practice for the discharge of ballast water. What are the risks? What is the current situation? What measures must be adopted for the health of the St. Lawrence?

The release of non-indigenous aquatic species in ballast water has become a problem throughout North America. It is a fact that the water used in ship compartments to help keep them on an even keel can, in fact, contain organisms of foreign origin. Once that water is discharged, certain species survive and thrive in domestic waters, with serious environmental and economic consequences. The Great Lakes and the St. Lawrence River have not escaped these “stowaways”. The zebra mussel is the best known example, but up to 139 “imported” species have been counted in the Great Lakes-St. Lawrence basin.

The ecosystem and economic impacts have forced governments to try to stem the “invasion”. This problem also requires an integrated approach: a ship that travels to the head of the Great Lakes can be subject to the laws and regulations of eight American states, two Canadian provinces and two federal governments. The St. Lawrence is also in a special geographical and environmental position: oceangoing vessels travel to and from the Great Lakes through this river passage where freshwater and saltwater environments meet. Given this complex context, the Navigation Committee helped set up workshops to build an approach adapted to the St. Lawrence, one that takes into account not only environmental factors but also technical feasibility and ship safety (Guidelines for the Control of Ballast Water Discharge from Ships in Waters under Canadian Jurisdiction - Appendix on the St. Lawrence region).

Toward sustainable navigation

The expression “sustainable navigation strategy” sums up the mission of the Navigation Committee, namely to provide “a navigation management strategy consistent with sustainable development on the St. Lawrence”.

The forthcoming strategy will include and integrate all of the issues presented above. To validate the policy guidelines to be proposed in the strategy, targeted sectoral consultations will begin in 2001 with community and environmental groups, industries, and governments. In 2003, a conference will mark the end of the vast operation now in progress. Thus, the content of the sustainable navigation strategy will be the result of ever increasing involvement by the various parties interested and by those with a role to play in the implementation of the recommendations. Naturally—and this is an important principle of the entire SLV 2000 agreement—the Navigation Committee is not taking the place of existing initiatives and jurisdictions. Like the other SLV 2000 committees, the Navigation Committee exists for the purpose of consensus-building, and its first achievement is an increase in dialogue and the sharing of concerns between public and private stakeholders with very divergent economic perspectives. As in other sectors of activity, the alliance between the environment and the economy begins with a shared awareness of the issues and challenges to be faced.

The consensus-building committee on navigation

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SLV 2000 Website: <http://www.slv2000.qc.ec.gc.ca>