

### I N T U N E

This month's instalment of *Le Fleuve* articles on results achieved since 1998 gives readers an overview of Industrial and Urban and Navigation initiatives.

#### Industrial and Urban

Building on the success of initiatives targeting large companies, the focus has shifted to SMEs in three sectors, i.e. chemicals, metallurgy and surface treatment of metals. Accordingly, a new approach tailored to SME clients has been implemented. This approach is not only necessary, but also promising for the years to come.

#### Navigation

The Navigation Committee's mandate was to implement measures promoting shipping and boating that take into account the sustainable development of the St. Lawrence River, while reconciling economic development and ecosystem health. Its objective has been met, as the Committee will soon unveil its Sustainable Navigation Strategy for the St. Lawrence.

## Over the last five years, the St. Lawrence Vision 2000 Action Plan has helped to improve the health of the St. Lawrence

Since 1988, three agreements signed by the federal and Quebec governments to protect, conserve and enhance the St. Lawrence have allowed government partners to take action in various areas affecting the river. Since the third agreement (1998-2003) ends in March 2003, the editors of *Le Fleuve* would like to take this opportunity to publicize some of the results achieved in each component of Phase III of the St. Lawrence Vision 2000 Action Plan (SLV 2000).

### Industrial and Urban Focus on SMEs

This is the last *Le Fleuve* on the most concrete results that have been achieved since 1998 and prospects for the future in various components. We met the co-chairs of the Industrial and Urban Co-operation Committee, Francis Flynn of Ministère de l'Environnement du Québec and Réjean De Ladurantaye of Environment Canada.

*By 1998, nearly 100 industrial plants had reduced their toxic liquid waste by approximately 90%. Building on that success, the Industrial and Urban Co-operation Committee shifted its focus to small and medium-sized enterprises (SMEs) in the following sectors: metallurgy, the surface*

*treatment of metals and chemicals. The objective was to prevent point source pollution produced by SMEs that discharge their liquid waste into municipal water treatment systems.*

*The initiative, which turned out to be more complicated than expected, nevertheless resulted in a new approach tailored to SMEs. The approach is not only necessary, but also promising for the years to come.*

### S U M M A R Y

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View of the St. Lawrence at Sorel in the early 1990s.  
Photo: Environment Canada

The new focus on SMEs is based on the findings of a study<sup>1</sup> on the toxicity potential of municipal treatment plant effluents. The study, which was undertaken during Phase II of the St. Lawrence Vision 2000 Action Plan, was conducted in 15 municipalities, including the three major urban communities of Montreal, Quebec City and Outaouais.

Mr. De Ladurantaye said that the study was one of the few studies that provided such detailed findings. Assessing the toxicity potential of municipal effluents provided an overall picture of the situation,

enabling the Committee to decide what action to take.

Analyses revealed that, prior to its dilution in receiving bodies of water, wastewater is relatively toxic due to the ammonia nitrogen and surfactants (used as household and industrial cleaners) it contains. However, its toxicity is low and relatively unharmed to aquatic organisms.

Mr. Flynn pointed out that the residual toxic substance levels of effluents in municipalities whose wastewater consists mainly of industrial waste could be harmful to the environment.

Most treatment plants are designed to reduce contaminants in municipal wastewater, e.g. dissolved organic matter, suspended particles, phosphorus and fecal coliforms. Although they can remove part of the other contaminants, they cannot eliminate them completely. Therefore, despite the fact that the plants meet treatment standards established by the Ministère de l'Environnement du Québec, it would be difficult for them to further reduce the toxicity of their effluents. Consequently, efforts needed to be focused on reducing point source pollution at SMEs.



## From major plants to SMEs

Mr. De Ladurantaye said that following the success of its initiatives for major companies, the Committee shifted its focus to SMEs. Three sectors were targeted: chemicals, metallurgy and surface treatment of metals. He explained that the objective was to implement a program to reduce toxic substances at the source in 60 SMEs, i.e. 20 SMEs per sector.

In phases I and II, the Committee dealt with big companies it was familiar with; however, this was not the case when it came to SMEs. This was a major and very risky shift in strategy, because it was dealing with a particular type of business that needed to be convinced of the program's environmental and economic benefits.



Sampling at a water treatment plant, Outaouais Urban Community.  
Photo: Environnement E.S.A.



Sampling at a water treatment plant, La Prairie.  
Photo: Environnement E.S.A.

A pilot project helped test diagnosis and support methods in each of the three industrial sectors. SMEs were then recruited on a voluntary basis.

Mr. Flynn explained that consultants were hired to meet with the companies and to propose that environmental assessments be conducted in order to establish potential pollution prevention projects. The result: seven firms in the chemicals industry, and nine in the metallurgy and surface treatment of metal industries were accepted. He noted, however, that the Committee was far from attaining its objective of 60 companies.

Faced with the reticence of many SMEs, Mr. Flynn said that the Committee had no choice but to change its strategy. As the voluntary approach clearly had its limits, it took a different tack, focusing on a specific geographical area—the municipality of Granby.

## The Granby pilot project: a promising approach

The City of Granby was selected because of the effluent toxicity assessment results of its treatment plant on the Yamaska River, which is one of the most polluted rivers in Quebec. The data revealed that residual contaminants, notably persistent and bioaccumulable contaminants, do not disrupt the receiving environment. The city also sought to reduce point source contaminants discharged at its water treatment plant in order to be able to serve new businesses.

In the fall of 2000, the City of Granby and the Ministère de l'Environnement du Québec had launched the Granby Action Plan, which was intended to reduce industrial and urban pressures associated with toxic substances discharged into the Yamaska River.

Mr. Flynn pointed out that although Granby's effluents are not toxic, their toxic substance levels are high enough to potentially have an environmental impact on the Yamaska River. In addition, untreated wastewater discharged from sewer systems following heavy rainfalls and snowmelt runoff also needs to be taken into account.

Environment Quebec's Montérégie office conducted environmental assessments at Granby firms. By the end of this fiscal year, some 40 businesses should have been the subject of an initial assessment.

The environmental assessment is in line with one of the main programs of the Granby Action Plan, namely its program for conducting environmental compliance audits and reducing priority contaminants. After presenting the program and observing the firms' industrial processes, departmental specialists occasionally conducted wastewater characterization studies. They could then propose ways to improve processes and reduce emissions of point source toxic substances. As needed, they also informed the companies of various federal and provincial assistance programs.

Mr. De Ladurantaye explained that one of the elements of the pollution prevention approach is intended to promote the economic benefits associated with the implementation of new, more environmentally friendly processes. In fact, many firms were discharging raw materials with their wastewater. To prevent these losses, various solutions for re-using manufacturing residues can be implemented. This makes it easier to illustrate the often short- and medium-term economic benefits of changes and improvements to processes.

By supporting the firms in their efforts and through the environmental compliance auditing and contaminant reduction program, the Committee was able to:

- deal with the largest sources of pollution
- inform firms of the environmental consequences of discharging toxic substances into the municipal sewer system, which is unable to eliminate them completely
- propose certain changes to processes that could reduce production costs, improve the efficiency of operations and reduce risks to human health and the environment

### **IDEA—SME Program**

The IDEA—SME Program, which is the result of an agreement between Environment Canada and Canada Economic Development, provided environmental SMEs with scientific, technical and financial support, enabling them to develop technology demonstration activities and initiatives for marketing products, processes and prototypes.

By the end of Phase III, 35 projects, valued at over \$40 million, will have benefited from some type of support. Canada Economic Development has contributed more than \$9.8 million. The projects are related to the agri-environment, contaminated sites and industrial clean-up.

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### **Public recognition of major industrial plants**

The environmental recognition program for the 107 major industrial plants that took part in the previous phases of SLV 2000 has been completed. The purpose of the program was to recognize the plants' involvement in reducing toxic liquid waste in the St. Lawrence River.

Mr. Flynn noted that at the end of the program in the spring of 2001, 80 companies obtained certificates of recognition for having implemented clean-up measures for their liquid effluent and modifying their industrial processes; 11 plants ceased operations and 16 did not meet their objectives.

These companies can now tell their clients and the general public that they are helping to protect the St. Lawrence ecosystem.

### **The focus on SMEs: an ongoing challenge**

What has been made clear in recent years is the importance of reducing point source toxic substances discharged by firms, mostly SMEs, into municipal sewer systems, because water treatment plants cannot remove them completely.

According to Mr. Flynn, the measures taken in Granby should be continued in the upcoming Phase IV of the St. Lawrence Action Plan in order to establish a model procedure that could be implemented in other municipalities. He also said that ways to reduce the toxicity of aerated ponds due to ammonia nitrogen, a major cause of effluent pollution, needs to be assessed.

Mr. De Ladurantaye fully agreed, saying that the Granby pilot project needs to be completed, because it reflects issues facing most Quebec municipalities. This approach is the most promising.

In the last five years, the Committee did not enjoy the success it expected to because it was not sufficiently familiar with SMEs. However, the members learned a great deal about SMEs during Phase III, reset their targets and implemented a new approach. Mr. De Ladurantaye believes that SMEs will shine in the coming years.

<sup>1</sup> Reports of analyses made at each plant were related in 2001 on the SLV 2000 Web site. The *Evaluation of Toxicity from Quebec's Municipal Wastewater Treatment Centres* synthesis report is also available on the Web site.

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# Co-operation: A Winning Strategy

This is the last of a series of *Le Fleuve* articles on the most concrete results achieved since 1998 and prospects for the future. We met the co-chairs of the Navigation Committee, Claire Poulin of the Ministère des Transports du Québec and Marc Demonceaux of the Canadian Coast Guard, Fisheries and Oceans Canada. Pierre D'Arcy, who is also with the Canadian Coast Guard, attended the meeting as the Committee's co-ordinator.

*The Navigation Committee was formed in 1998 and aimed high when it first became involved in the St. Lawrence Vision 2000 Action Plan (SLV 2000): the Committee was to implement measures promoting shipping and boating that take into account the sustainable development of the St. Lawrence River, while reconciling economic development and ecosystem health.*

*The Committee has met its objective, as it will soon be unveiling its Sustainable Navigation Strategy for the St. Lawrence—a mammoth project that was successfully carried out thanks to the climate of dialogue and co-operation that exists among Committee members.*

Ms. Poulin explained that the Navigation Committee is made up of 26 representatives of the provincial and federal governments, the shipping and port industries, and boating, community and environmental groups. Most members have been on the Committee since it was formed. By their spirit of co-operation, they have managed to agree on a common response strategy, while honouring the mandates of the groups and organizations they represent. In this respect, the simultaneous involvement of the shipping industry and interest groups was extremely helpful in maintaining a balance between environmental protection and economic development objectives, which is fundamental to sustainable development.

The mission of the Navigation Committee is to develop and implement a sustainable navigation strategy for the St. Lawrence River with the shipping industry, environmental stakeholders, governments and riverside communities.

Mr. Demonceaux said that co-operation was a winning strategy and he proudly added that it was the Committee's most notable achievement. The members met more than 20 times to define the Committee's vision, share information and develop an overall strategy that took into account the concept of sustainable development. They built relationships based on mutual understanding and trust, enabling them to carry out their mission.

## An ambitious program

The assessment of the environmental impacts of shipping and boating is not a new aspect of the SLV 2000 Action Plan. Between 1988 and 1998, a number of studies were conducted in other components of SLV 2000. The creation of the Navigation Committee allowed stakeholders to address environmental

issues related to shipping and boating in a co-ordinated, well organized manner—and therein lies the program's novelty.

The Committee's first activity program was both innovative and ambitious, because it had to address the concerns and meet the expectations of experts, the general public and numerous St. Lawrence users, including the shipping industry. The Committee therefore chose to focus its efforts on the integrated management of dredging and sediments, the management of contaminated sites, environmental risks associated with oil spills, the protection of shorelines against erosion and ballast water discharge.

## From environmental, social and economic assessments—

Pierre D'Arcy explained that the first step was to paint an accurate portrait of the situation. Many environmental, social and economic assessments were conducted on shipping and boating on the St. Lawrence River and served to increase and update knowledge of these issues. They were also used to develop the governing principles of the Sustainable Navigation Strategy.

Of the studies conducted, the scientific and technical report *The Environmental Risks and Impacts of Navigation on the St. Lawrence River*<sup>1</sup> and the comparative study on environmental pressures related to the transportation of goods by boat, train and truck are worthy of mention<sup>2</sup>.

Mr. D'Arcy said that although the second study is based on fictitious scenarios, it is important because it shows that transporting goods by water instead of by land (truck and train) would significantly reduce



## Navigation Committee members

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|--|--|
| Governments                                    | <ul style="list-style-type: none"> <li>• Fisheries and Oceans Canada</li> <li>• Ministère des Transports du Québec</li> <li>• Transports Canada</li> <li>• Environment Canada</li> <li>• Ministère de l'Environnement du Québec</li> <li>• Société de la faune et des parcs du Québec [Quebec Wildlife and Parks Corporation]</li> </ul> |
| Shipping                                       | <ul style="list-style-type: none"> <li>• The St. Lawrence Ship Owners' Association</li> <li>• Montreal Port Authority</li> <li>• The Shipping Federation of Canada</li> <li>• Corporation of Mid–St. Lawrence Pilots</li> <li>• St. Lawrence Economic Development Council (SODES)</li> </ul>   |
| Boating  | <ul style="list-style-type: none"> <li>• Fédération de la voile du Québec</li> <li>• Canadian Coast Guard Auxiliary</li> </ul>   |
| Riverside communities and environmental groups | <ul style="list-style-type: none"> <li>• Société d'initiative et de conservation du Bas-Richelieu</li> <li>• Stratégies Saint-Laurent</li> <li>• Les Amis de la vallée du Saint-Laurent</li> </ul>   |



Shipping near Quebec City.  
Photo: Denis Chamard, Fisheries and Oceans Canada



Pleasure craft in the channels of the Berthier–Sorel archipelago.  
Photo: Denis Lehoux, Environment Canada

greenhouse gas emissions—an advantage that cannot be ignored with the implementation of the Kyoto Protocol.

### **—to the Sustainable Navigation Strategy for the St. Lawrence**

The Sustainable Navigation Strategy for the St. Lawrence should be launched in the coming year. Ms. Poulin said that the strategy was based not only on the Committee's findings, but also on sectoral consultations with the provincial and federal departments involved, the shipping industry and boating, social and environmental groups. It is a tool that the Committee developed with stakeholders who are seeking to promote the St. Lawrence River and related shipping and boating activities, while taking environmental protection into consideration.

Mr. Demonceaux said that the strategy paints an accurate, overall picture of navigation, taking environmental risks into account. Its implementation, which will be carried out from 2003 to 2008, is just the beginning of a longer-term project, as some 30 activities associated with nine major issues or objectives are to be proposed.

### **Sustainable Navigation Strategy for the St. Lawrence**

**Objective:** Harmonize the protection of St. Lawrence ecosystems, user needs and the development of the shipping industry.

#### **Guiding principles**

- Protection of ecosystems and water resources

- Safety of individuals and ships
- Development of shipping activities
- Harmonization of uses and the involvement of riverside communities
- Development of recreational and boating activities

### **Integrated management of dredging and sediments**

A plan for the integrated management of dredging and sediments is being developed. It will include 17 recommendations and will help simplify the regulatory processes and the assessment of the environmental impacts of dredging activities and sediment management practices.

#### **The plan will focus on:**

- the medium- to long-term planning of dredging activities
- the integration of developers and non-governmental organizations into the planning process
- applied research (environmental impact of dredging and the disposal of sediments, as well as benefits of re-using sediments)
- environmental assessment (harmonization and simplification of departments' project authorization procedures)

Analyses on the natural metal concentration of sediments are under way. They will be used to review sediment quality evaluation criteria. This huge project should be completed during the next phase of the St. Lawrence Action Plan.



## Management of contaminated sites

Committee members provided technical support for restoration projects in Area 103 of the Port of Montreal and the Gaspé harbour area (Sandy Beach Bay).

The Jacques Cartier Area of Prime Concern (ZIP) Committee formed a task force on the restoration project in Area 103 of the Port of Montreal. Discussions led to four partners—i.e. Shell, Esso, Noranda and the Port of Montreal—committing more than \$5 million to the project. A similar project will be implemented in the Gaspé harbour area in the coming years.

Mr. Demonceaux explained that these are long-term projects. After pointing out the problems, the Committee needs to negotiate ways to solve them, which can sometimes take a long time. Co-operation is an essential factor in the process.

## Management of environmental hazards and risks

A major achievement marked the Navigation Committee's first assessment, namely the biorestitution pilot project following the oil spill in St Croix de Lotbinière aquatic beds. The Committee worked with a number of partners, including Fisheries and Oceans Canada, Environment Canada, the US Environmental Protection Agency and France's Centre de documentation, de recherche et d'expérimentations sur les pollutions accidentelles des eaux. A guide and response protocols adapted to St. Lawrence River conditions resulted from the initiative, among other positive spinoffs.

As the general public is relatively unfamiliar with environmental response and contingency plans, various awareness initiatives are planned under the Sustainable Navigation Strategy. Some have already been launched. The Committee wants to encourage riverside communities to work with response specialists in the event of hazardous spills.

## Protection of shorelines against erosion

Mr. Demonceaux affirmed that, in the fall of 2000, the shipping industry agreed to reduce ship speed between Sorel and Verchères. The compliance rate of this voluntary measure is very high.

Mr. D'Arcy points out that the measure indicates how much the shipping industry values the environment. However, the measure's effectiveness will only be known in the long term. Shoreline erosion can also be caused by other factors, such as fluctuating water levels, wind waves and ice.

The Committee also created an interactive map of areas susceptible to erosion between Cornwall and Montmagny for the SLV 2000 Web site. A simplified version for boaters will be published soon.

## Ballast water discharge

Some invasive species have been introduced into the St. Lawrence River through the discharge of ship ballast waters. The phenomenon is worrisome, because these species threaten the ecosystem. Lest we forget the zebra mussel, whose rapid reproduction had serious consequences for municipal infrastructure and ecosystems.

Guidelines on ballast water exchanges have been reviewed and are currently the subject of a regulatory plan. A task force formed under the Navigation component of SLV 2000 is helping to draft the new regulations. Its proposals were accepted by the Canadian Marine Advisory Council, and the regulations should come into effect in the coming years.

## Co-operation is still needed, now more than ever

Ms. Poulin said that the coming years will be marked by the implementation of the Sustainable Navigation Strategy for the St. Lawrence, which will require greater co-operation of all stakeholders.

Mr. Demonceaux agreed, saying that the Committee's first goal is to maintain co-operation between partners. He added that the Committee would especially like to see the number of successful partnerships grow.

At the time that the Navigation Committee was formed in 1998, the objective was to forge a partnership that was representative and strong enough to continue to exist after 2003. And it appears that the objective was met, as the Committee is today a force that will be around for years to come.

<sup>1</sup> S. VILLENEUVE and L. QUILLIAM, 2000. *The Environmental Risks and Impacts of Navigation on the St. Lawrence River*, Environment Canada—Quebec Region, Environmental Conservation Branch, St. Lawrence Centre, Scientific and Technical Report TS-188, 174 pp.



Area 103 — Port of Montreal.  
Photo: Environment Canada

<sup>2</sup> R. HAMELIN et al., CFORT,  
Groupe-conseil GESCO INC., 2000.  
*Étude comparative des impacts  
environnementaux des modes de  
transport de marchandises dans  
l'axe du Saint-Laurent*, St. Lawrence  
Vision 2000, Navigation Committee,  
SODES—St. Lawrence Economic  
Development Council, 131 pp. +  
appendices.

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Example of eroding shoreline between Montreal and Sorel. This stretch of the St. Lawrence River is susceptible to erosion.  
Photo: Denis Lehoux, Environment Canada



Example of bio-engineering to stabilize eroding shoreline.  
Photo: Denis Lehoux, Environment Canada



# News *in* BRIEF

## Launch of the State of the St. Lawrence Monitoring Program

On February 27, Environment Canada and its partners, Fisheries and Oceans Canada, Ministère de l'Environnement du Québec and the Société de la faune et des parcs du Québec [Quebec Wildlife and Parks Corporation], launched the State of the St. Lawrence Monitoring Program. Approximately 150 representatives from interest groups, the scientific and academic communities and government attended the event.

The activity generated extensive media coverage. Most Quebec media, i.e. *Le Devoir*, *La Presse*, *Le Soleil* and the Canadian Press, as well as Radio-Canada radio and television reported the program's launch. Media coverage was by and large positive. The media also noted that government institutions have worked hard to rehabilitate the St. Lawrence ecosystem.

The State of the St. Lawrence Monitoring Committee invited six representatives from universities, user groups and communities to be part of a discussion panel on the State of the St. Lawrence Monitoring Program. Everyone acknowledged the efforts of the government partners and viewed their commitment to the new monitoring program favourably. Most government partners believed that the Program would benefit from the involvement of communities and other partners in the monitoring program.

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## LE FLEUVE

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