

# Port of Quebec Expansion Project

Report of  
the Environmental  
Assessment Panel

September 1984

## Panel Reports

1. Nuclear Power Station at Point Lepreau. New Brunswick, (May 1975)
2. Hydro Electric Power Project, Wreck Cove, Cape Breton Island. Nova Scotia, (August, 1976)
3. Alaska Highway Gas Pipeline Project, Yukon Territory. (Interim report, August, 1977)
4. Eldorado Uranium Refinery Proposal, Port Granby, Ontario. (May 1978)
5. Shawkak Highway Project. Yukon Territory-British Columbia. (June, 1978)
6. Eastern Arctic Offshore Drilling-South Davis Strait Project. N.W.T. (November, 1978)
7. Lancaster Sound Offshore Drilling Project. N. W.T. (February, 1979)
8. Eldorado Uranium Hexafluoride Refinery. Ontario. (February, 1979)
9. Roberts Bank Port Expansion. British Columbia. (March, 1979)
10. Alaska Highway Gas Pipeline, Yukon Hearings. (August, 1979)
11. Banff Highway Project (east gate to km 13). Alberta. (October, 1979)
12. Boundary Bay Airport Reactivation. British Columbia. (November, 1979)
13. Eldorado Uranium Refinery, R.M. of Corman Park. Saskatchewan. (July, 1980)
14. Arctic Pilot Project (Northern Component). N.W.T. (October, 1980)
15. Lower Churchill Hydroelectric Project. (December, 1980)
16. Norman Wells Oilfield Development and Pipeline Project. N.W.T. (January, 1981)
17. Alaska Highway Gas Pipeline, Yukon Territory. (July 1981) (Routing Alternatives Whitehorse/Ibex Region)
18. Banff Highway Project (km 13 to km 27). Alberta. (April, 1982)
19. Beaufort Sea Hydrocarbon Production Proposal. (Interim Report) (April, 1982)
20. CP Rail Rogers Pass Development, Alberta. (Preliminary Report) (April, 1982)
21. Alaska Highway Gas Pipeline, Yukon Territory. (Final Report) (October, 1982)
22. CP Rail Rogers Pass Development, Alberta. (Final Report) (August, 1983)
23. CN Rail Twin Tracking Program, British Columbia. (Interim Report) (September, 1983)
24. Venture Development Project, Nova Scotia. (December, 1983)
25. Beaufort Sea Hydrocarbon Production and Transportation. (Final Report) (July, 1984)

These documents are available from:

Federal Environmental Assessment Review Office  
200 Sacre-Cœur Blvd  
Hull, Quebec  
K1A 0H3

© Minister of Supply and Services Canada 1984

Cat. No. En 105-31/1984

ISBN 0-662-53 123-X



Government of Canada    Gouvernement du Canada

Environmental  
Assessment Review

Examen des évaluations  
environnementales

The Minister of the Environment  
Ottawa, Ontario

The Minister of Transport  
Ottawa, Ontario

Dear Ministers:

In accordance with the Environmental Assessment and Review Process, the Environmental Assessment Panel appointed to review the Port of Quebec Expansion Project has completed its task and is pleased to submit its report.

The Panel began its review in 1978 when the Port of Quebec submitted a development plan for the area of the Beauport tidal flats. The plan proposed the creation of 440 hectares of new port facilities. The project was modified twice and is now limited to 42.5 hectares. This last proposal is the subject of the report we are submitting to you.

We considered the submissions made to us by interested parties and after our own review we have concluded that the project is acceptable in terms of its impacts on the biophysical and socio-economic environments. We believe however that the project should proceed only under certain conditions which are stated in the report.

During the review of the project, it has come to our attention that little information is available on the ecology of the intertidal zones in the Quebec City region. We would therefore suggest, in addition to the recommendations of this report, that the federal and Quebec Departments of the Environment evaluate the net productivity of intertidal zones in the Quebec City region.

Sincerely yours,

Marcel Lortie  
Chairman  
Environmental Assessment Panel  
Port of Quebec Expansion Project

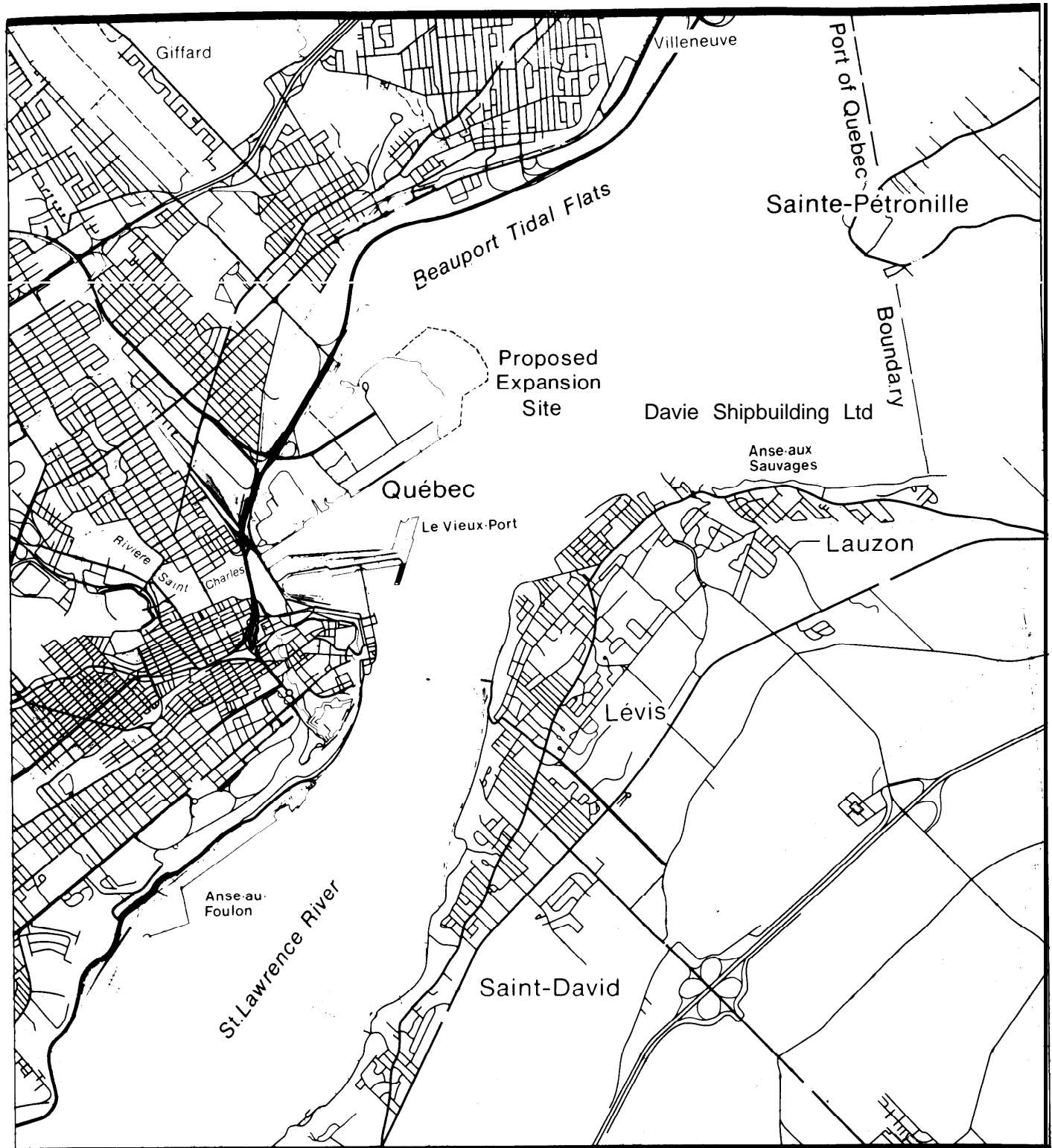
Canada

## CONTENTS

SUMMARY .....	1
INTRODUCTION .....	5
1. History of the Project and Mandate of the Panel .....	7
2. Composition of the Panel. ....	9
3. Description of the Final Project .....	16
4. Review of the Final Project .....	10
5. The Need for an Expansion .....	11
ENVIRONMENTAL IMPACT, PROBLEMS AND CONCERNS	
1. General Considerations .....	15
2. The Biophysical Environment .....	15
2.1 Introduction .....	15
2.2 The Beauport Tidal Flats and the Proposed Expansion .....	15
2.2.1 The Beauport Tidal Flats .....	15
2.2.2 The Area Covered by the Proposed Expansion.. ..	16
2.3 Intertidal Vegetation.....	16
2.4 Birdlife.....	16
2.5 Sedimentation .....	17
2.6 Ice Formation and Breakup .....	17
2.7 Water Quality in the Beauport Area .....	19
2.7.1 The Situation Today .....	19
2.7.2 Water Quality During Construction.. ..	19
2.7.3 Water Quality and Port Activities.. ..	19
2.8 Air Quality .....	20
3. Noise Abatement .....	21
4. Socio-economic Impacts and Concerns .....	21
4.1 Economic Considerations .....	21
4.1.1 Regional Employment .....	21
4.1.2 Fiscal Impact .....	22
4.2 Impact on the Quality of Life .....	22
4.2.1 Visual Impacts, Air Quality and Noise .....	22
4.2.2 Recreation, Cottagers and Tourism .....	23
5. Mitigation Measures and Their Implementation .....	23
5.1 Mitigation During Construction .....	23
5.2 Port Activities .....	24

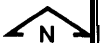
POLITICAL ISSUES	
1. Land Use	27
2. The Cumulative Impact of Other Developments	27
CONCLUSIONS	28
RECOMMENDATIONS	28
APPENDICES	30

## SUMMARY



**AREA UNDER REVIEW**

EXTRACTED FROM ENVIRONMENTAL IMPACT  
STATEMENT FOR THE PORT OF QUEBEC EXPANSION



The Port of Quebec lies on the north shore of the St. Lawrence River in the heart of old Quebec City. Its principal activity is the trans-shipment of bulk products. It covers an area of 188 hectares and comprises three sectors, the easternmost adjoining the tidal flats at Beauport. In 1978, the Port of Quebec Authority announced plans for a 440 hectare development in the Beauport area to meet the needs of prospective customers.

The administrative sector of Beauport embraces the intertidal zone, an important ecological area known for its wealth of marine organisms, plants and wildlife. In addition to its harbour function, the sector has gradually attracted more and more of the local residents to a natural beach which formed following construction of an earlier port expansion.

Aware that its most recent proposal might have significant effects on the natural and human environment, the Port of Quebec Authority requested a public review of its proposal, under the federal Environmental Assessment and Review Process (EARP). An Environmental Assessment Panel was formed to undertake the review in the fall of 1978. In January 1979, after public meetings, the Panel issued the Port of Quebec Authority with a set of guidelines for the preparation of an Environmental Impact Statement (EIS). The Port of Quebec Authority submitted its EIS to the Panel in December 1981. The expansion envisaged in that second proposal had been reduced to 210 hectares. The EIS was submitted to a public review and the Panel concluded that the Port of Quebec Authority had failed to answer a number of important questions, in particular whether or not the project would ensure protection of the Beauport intertidal environment.

In November 1983, the Port of Quebec Authority submitted an EIS to the Panel detailing the environmental impact of a modified project covering an area of 42.5 hectares. The new project would not impinge on the intertidal zone. It would consist of 38 hectares for maritime operations that would include a four hectare greenbelt and in addition, a 4.5 hectare beach at low tide. The expansion would be built in three stages. The actual construction timetable would be determined by the needs of the port's future clients, and therefore construction would likely be phased over several years.

In March 1984, after studying the EIS, the Panel held public meetings at which the Port's proposal was discussed. In all, the Panel received 45 briefs, of which 25 were discussed at the public meetings.

This report discusses the issues raised during the review and presents the Panel's conclusions and recommendations.

Throughout the review of the proposal, participants both endorsed and questioned the need for the project. The Panel does not consider this issue to be within its mandate. Therefore, it restricted itself to noting that the main arguments put

forward by the Port of Quebec in support of the proposed port expansion have not been seriously challenged. The Port Authority has established that existing wharves have reached their peak capacity and that there is no available space left on which to build additional wharves.

The briefs submitted to the Panel rarely mentioned the projects' potential impact on the biophysical environment. Those that did expressed satisfaction with the proponent's conclusions and with the proposed mitigation measures.

The Panel, however, paid particularly close attention to the project's likely impact on marine vegetation, birds, sediment and ice formation, and water and air quality.

Throughout the review there were many differences of opinion concerning the project's socio-economic consequences. Some participants stressed its spin-off benefits, such as job creation and economic development. Others urged that the Panel make no final decision until a study had been made of the site's recreational and tourist potential. The Panel also took into account the development's visual, atmospheric and noise impacts as well as its impact on recreational activities and tourism.

The Panel concludes that the project as presented in November 1983 and discussed during the public meetings can be carried out without significant effects on the biophysical environment. The Panel believes that the anticipated socio-economic impacts are also acceptable. The 42.5 hectare expansion project unlike the two proposals made earlier seems to be the best solution with respect to region's biophysical, socio-economic and human resources.

The Panel's approval of the project is conditional on certain specific mitigation measures. The Panel recommends that the first two stages of construction take place simultaneously. Construction should not occur during the spring and fall movement of migratory birds. In addition, the Panel recommends that the proponent implement mitigation measures to abate noise levels and reduce the impact on air quality during construction. The implementation of all mitigation measures should be monitored by a committee which should include representatives from the federal government, the provincial government and the municipal governments most immediately concerned. The Panel recommends that once the facility is constructed, all new activities envisaged on the proposed site be subject to an environmental assessment to be carried out in conformity with existing policies, and that the principal interested authorities be consulted at the beginning of initial environmental screening for each project. The Panel further recommends that, during operations on the new site, measures should be taken to minimize the risk of accidental spillage and to maintain air quality. In addition, the Panel recommends that the proponent ensure protection of the south-west inlet.



## INTRODUCTION



The Port of Quebec runs along the north shore of the St. Lawrence River in the heart of old Quebec City, more than 1,400 kilometres inland from the Atlantic ocean. Its location places it in the centre of economic activity and the markets of the north-eastern part of the continent. It can accommodate ships of up to 150,000 tonnes. It is consequently a centre for the trans-shipment of bulk goods between lakers coming through the St. Lawrence Seaway and ocean-going cargo ships.

The Port of Quebec consists of 29 wharves and a total service area of 188 hectares. In 1981, the port handled more than 15,000,000 tonnes of bulk cargo. Most of it consisted of salt and bulk solids (92 per cent) and the remainder consisting of bulk liquids and general merchandise. On the north shore, the port area is divided into three major sectors. They are, from west to east, l'Anse-au-Foulon (Wolfe's Cove), the Old Port and the Beauport tidal flats. The latter sector adjoins the boundaries of Quebec City and the City of Beauport.

The economy in the region of the provincial capital is primarily oriented towards the tertiary sector, with the provincial government and tourism being dominant. Shipbuilding and the pulp and paper industry are important to the manufacturing and processing sectors. During the Quebec Region Economic Summit, in September 1983, spokesmen for the region's major economic sectors stressed the need to diversify and strengthen the local economy.

The urban area adjoining the Beauport tidal flats is primarily residential, with a commercial and industrial district on its southern fringe providing a buffer zone between the residential area and the harbour zone.

The Beauport tidal flats area has been intensively developed over the past two decades. The Port of Quebec Authority has constructed new wharves and new facilities for the trans-shipment of solid and liquid bulk goods. This led to the gradual formation of a natural beach which local residents began to use. Thus the port area, which until recent times had been purely an industrial zone, now doubles as a recreational area.

The administrative sector designated as the Beauport tidal flats includes the tidal flats within it. The intertidal zone which is recognized as a valuable ecological entity, is the part of the river which is covered by high tide twice a day. It is rich in marine vegetation and waterborne organisms. Many species of birds use the tidal flats as feeding grounds, particularly in the spring and fall, when thousands of them converge on the area to rest and feed during their long migrations.

Federal and provincial authorities take a special interest in protection of the ecology of the tidal flats. The Government of Quebec is considering the possibility of implementing a policy to protect the tidal zone and riverbanks. It is worth recalling that, following public hearings on the proposed Dufferin-Montmorency highway in 1979, the provincial government modified the initial plan so that, instead of encroaching on the flats, the highway would follow the shoreline.

Formerly, the Beauport tidal flats originated in the estuary of the St. Charles River and curved eastward along the north shore of the St. Lawrence. Today, however, new tidal flats

have formed on the eastern and northern approaches as a result of the first Port expansion. They are known as the Champfleury tidal flats.

## 1. History of the Project and Mandate of the Panel

In 1978, the Port of Quebec Authority unveiled a master plan for a proposed expansion in the Beauport tidal flats area. The proposal included construction of new installations to handle an expected increase in the demand for port facilities and services. It was deemed that the proposal could have a major impact on the area's natural environment.

According to the Environmental Assessment and Review Process (EARP), established by the federal Cabinet in 1973 and modified in 1977, federal agencies must assess projects that may affect the natural or human environment. When a project is judged likely to have a significant impact, an Environmental Assessment Panel is established to conduct a public review of its potential impact on the biophysical and socio-economic environment and to advise the Minister of the Environment of its findings. In conformity with the provisions of the EARP, the Port of Quebec Authority requested a Panel review of its proposal.

In the fall of 1978, an Environmental Assessment Panel was appointed to conduct the requested public review. Given the provincial government's special interest in the matter, the federal Minister of the Environment invited his provincial counterpart to nominate a member for the Panel.

Intermittently throughout the review, a member of the Bureau d'audiences publiques sur l'environnement du Québec participated as a member of the Panel secretariat.

The 1978 proposal entailed construction of a 440 hectare port expansion covering the Beauport tidal flats and reaching into the St. Lawrence River. The plan called for the filling in of all the tidal flats extending from the Champfleury area as far as the Villeneuve district of the City of Beauport. The proposed expansion was intended to accommodate marine as well as industrial operations, and it was to be divided into three distinct zones: one each for port, industrial and intermediary activities. As envisaged, the expansion would have caused the Beauport tidal flats to disappear completely.

In accordance with the EARP, the Panel issued preliminary guidelines in October 1978 which were discussed at public meetings the following month. In response to the opinions expressed at the meetings, the Panel finalized the guidelines and issued them to the proponent in January 1979. The proponent was instructed to prepare an EIS describing the nature, the scope and the predicted impact of the project. The Panel reminded the proponent, in its covering letter, that many of those who had appeared at the public meetings had expressed concern about the timing and the scope of the proposed development, its location, and its value to the region's economy. The Panel suggested therefore, that in collaboration with provincial, regional and local representatives, it re-exam-



ine the project from the standpoint of its relationship to overall development of the region.

In December 1981, the Port of Quebec Authority presented the Panel with an EIS on the environmental impact of a new expansion project which differed from the 1978 proposal in several respects. The authors of the new report, Pluram, proposed a revised, 210 hectare expansion reaching no further than the low-tide mark. The industrial use that had been included in the 1978 proposal was eliminated. The proponent described a number of likely port activities for the new proposal but did not specify how the new land area was to be used, nor provide any construction schedule. It included an inventory as well as an analysis of all possible expansion sites in addition to an evaluation of the proposed expansion's impact on the socio-economic and biophysical environment.

Interested citizens and organizations were invited to comment on the EIS's compliance with the Panel's guidelines and present their views on whether or not it contained sufficient information to permit a thorough evaluation of the project. The Panel allowed four months for preparation of written briefs. During this period, the Panel held a public information meeting at which the proponent presented the Pluram report and explained the proposal. Panel Members and participants questioned the Port Authority on the project and on its impacts on the socio-economic and biophysical environments. The public information meeting was held at Beauport, February 17, 1982.

Thirty briefs were presented to the Panel at the meeting. Following study of both the briefs and the proponent's EIS, the Panel asked for additional information to continue its review. On May 10, 1982, the Panel presented the Port Authority with a list of deficiencies it had noted in the EIS. It stressed above all that the proponent had not satisfactorily shown that the intended project would ensure protection of the tidal flats at Beauport. The Panel therefore requested the proponent to describe and analyze the environmental impact of each stage of the project, to elaborate on its residual impacts and to describe the mitigation measures proposed for each stage of construction.

Concerning the socio-economic impact, the Panel requested the proponent to prepare a study of the area (e.g. a profile of the population, a summary of the employment picture, etc.), its public and private infrastructure, and its fiscal status, and to

outline how the port expansion would affect access to the St. Lawrence River and the aesthetics of the area. In addition, the proponent was required to describe the project's impact on the region's cultural, social and economic life.

Although the Panel was particularly concerned with the socio-economic impacts directly related to the biophysical environment, it also requested the proponent to present an analysis of the overall socio-economic effects.

## 2. Composition of the Panel

Members of the Environmental Assessment Panel are listed below. Their biographies are appended to this report.

Marcel Lortie [Chairman]  
Faculty of Forestry and Geodesy  
Laval University  
Sainte-Foy, Quebec

Frederic De Vos  
Specialist in Transportation Economics  
Ottawa, Ontario

Gabriel Filteau  
Department of Biology  
Laval University  
Sainte-Foy, Quebec

Vincent Lemieux  
Department of Political Science  
Laval University  
Sainte-Foy, Quebec

Fernand Tremblay  
Architect  
Sainte-Foy, Quebec

Georges-Albert Tremblay  
Office de planification et de  
développement du Québec  
Québec City, Québec

The persons listed below were former members of the Panel:

Fernand Hurtubise  
Envirocon Limited  
Ottawa, Ontario

Raymond Dufour  
Economic adviser  
Québec City, Québec

Gaston Ouellet  
Office de planification et de  
développement du Québec  
Québec City, Québec

Luc Ouimet  
Bureau d'audiences publiques sur l'environnement  
Montreal, Québec



### 3. Description of the Final Project

In November 1983, the proponent presented the Panel with an Environmental Impact Statement (EIS) in support of a modified project covering only 42.5 hectares.

The modified project would not encroach on the tidal flats. Its extreme northern limit would reach the low-tide mark and the newly proposed expansion's perimeter would abut the inter-tidal zone at the north-eastern limit of the existing facility.

The expansion would comprise 38 hectares for port activities and include a 4 hectare greenbelt as well as a 4.5 hectare beach at low tide. The maximum length would be approximately 600 metres.

Material dredged from the river would be used as fill. The required 2,600,000 cubic metres of fill would be dredged from the wharf areas and their approaches to a depth of 18 metres.

The first step would involve constructing the wharves by means of caissons that would be built on dry land and sunk on the wharf sites. Dredged material would be used to create the service areas.

Construction would proceed in three phases according to the proponent:

- Phase One: Expansion of Pier 54 to a length of 183 metres.
- Phase Two: Construction of Pier 55 (305 metres) and a 25 hectare pad.
- Phase Three: Construction of Pier 56 (305 metres) and completion of the 38 hectare pad.

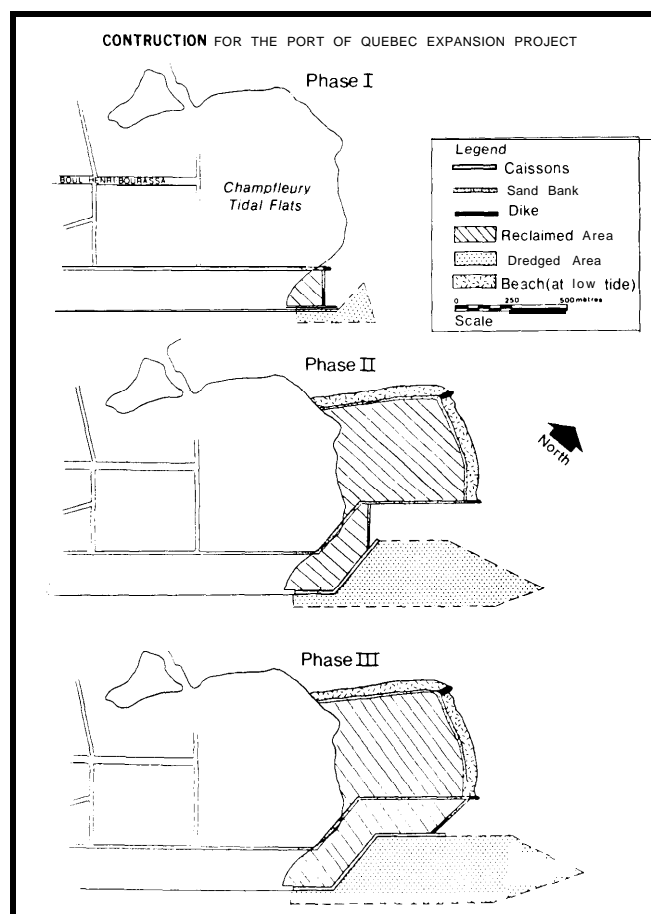
Actual construction time for all three phases would be 26 weeks but, since the timetable would be determined on the basis of the needs of clients whose needs are as yet unknown, construction work is expected to spread over a period of several years. The total cost of constructing the 42.5 hectare expansion is assessed at \$40 million (1982).

The necessary infrastructure (expansion of the existing road and rail network) would be built as needed. Hydroelectric, water and sewer services would be extended on the same basis.

The development would include a beach and a 4 hectare greenbelt area, which will provide a buffer zone between the recreational area and the port. The beach and greenbelt would be open to the public. The beach would be completed at the end of phase two and the greenbelt during phase three.

As for the port area itself, the proponent noted that although it cannot specify the ways in which the area would be used, future users would have to abide by rules that would form part of a development plan to be prepared by the Quebec City Urban Community authorities.

The accompanying map illustrates the three phases of construction.



EXTRACTED FROM THE ENVIRONMENTAL IMPACT STATEMENT FOR THE PORT OF QUEBEC EXPANSION

### 4. Review of the Final Project

The Panel was satisfied that the proponent's new studies had responded to the questions it had raised in its January 1979 guidelines, and in its request for a supplementary analysis in May 1982. The Panel held public meetings to receive written and oral comments from interested citizens and groups on the new expansion proposal. The meetings were held on March 14, 15, 19, 20 and 21, 1984. In addition to the oral presentations made by individual citizens, the Panel received 45 written briefs, of which 25 were discussed at the meetings.

The Panel has issued a written transcript of the meetings and copies may be obtained from the Federal Environmental Assessment Review Office. The compendium of briefs submitted to the Panel is also available from the Office.

The names of the individuals, interest groups and other organizations that submitted briefs to the Panel are appended to this report. Also appended is a listing of all documents used by the Panel.

## 5. The Need for an Expansion

Throughout the review of the proposal, and particularly during the public meetings, the need to expand the port's facilities was both supported and questioned. The Panel has presented the arguments put forward by those supporting and those opposing the project, but it has not commented on this issue since it is beyond the Panel's mandate.

The EIS presented by the Port of Quebec provides many arguments to support its claim that there is a real need to expand its facilities. The Port's presentation began with arguments justifying construction of an expansion and explained why, in its view, the Beauport area is the most suitable of all the available sites.

Studies carried out by the proponent indicate that the Port of Quebec must expand its facilities to meet the needs of new clients, if it is to maintain its competitive edge. The Port of Quebec expressed its opinion as follows:

"The prevailing trends in the technology attendant upon maritime transport indicate that the Port of Quebec is destined to play an increasingly important role as a trans-shipment centre for inland and ocean-going ships plying the St. Lawrence River. The steady increase in cargo capacity and the lack of facilities with which to serve new clients have led the Port Authority to consider construction of a new expansion perimeter that will be environmentally acceptable." [*Étude des répercussions environnementales de l'extension du Port de Québec. Aspects socio-économiques.* p. 4.1]

According to the study made in 1977 by the consulting firm Asselin, Benoit, Boucher, Ducharme, Lapointe, Inc. (ABBDL), the Beauport site was chosen over l'Anse-aux-Sauvages on the basis of such factors as construction and operational costs. Many spoke in support of the proponent at the public meetings. Ports Canada based its support of an expansion on prevailing economic trends in national and international maritime transport. La Société Inter-Port also supported the Port Authority's rationale for the project and compared the lack of an expansion to "a mortgage that has yet to be paid." The Department of Regional Industrial Expansion [DRIE] echoed the arguments of flexibility and long-term planning. It also stressed the Port's role as an economic catalyst, adding that, in view of the unfavourable state of the region's economy, the jobs that would be directly and indirectly created by the project must be taken into account. DRIE also cited opinions voiced at the Quebec Region Economic Summit to the effect that the tertiary sector, which had long been the area's prime economic mover, "has stabilized since the end of the seventies owing to the decline of employment in the public sector and to the severe slowing of activity in the business sector as a result of the 1981-1982 recession." Many of the region's economic

interests backed the Port Authority's claim that construction of the proposed project would create jobs and thus meet a real need.

On the other hand, the Conseil de développement du Québec Métropolitain [CDQM], the Association des citoyens de Beauport and the Écoville research group questioned the need for the project. CDQM, in particular, argued that the Port Authority's decision to reduce the area of expansion from that initially proposed reflected badly on its credibility and casts doubt on the actual need for expansion.

"The Port Authority has been so inconsistent in recent years that it can no longer propose projects to the population with any pretense of credibility." [CDQM brief, pp 2-3.]

Other participants stated that the Port's administrators were justified in their planning but they voiced several reservations. Environment Canada agreed that expansion was justified but said that currently unused space must be taken into account before new facilities are built. The department added that the proposed expansion should not exceed 42.5 hectares and that any other major development within the Port's jurisdiction would undermine the claim that the Beauport facility must be expanded. Environnement Québec, on the other hand, believed the project is justified in itself, but it questioned the validity of the criteria used in selecting Beauport over other available sites.

The Panel notes that no one has seriously challenged the arguments on which the Port Authority based its proposal. The Port Authority showed that existing wharf capacity is stretched to the limit and that there is no space left on which to build new wharves.

The same situation exists in the service areas. When the 25 hectares that are currently available have been put to use, the Port will be unable to serve new clients unless its facilities are expanded.

As for the decision to reduce the size of the area proposed in 1978, the Panel points out that this meets the requirements concerning protection of the tidal zone at Beauport and, further, that the 42.5 hectare limit applies to a short and medium-term development, whereas the 440 hectare and 210 hectare areas had been considered in relation to medium and long-term projects. Although most of the changes made to the original plan arose from closer scrutiny of the project, it is clear that some were made for other reasons. Additional elements of the new plan that were considered during the Panel's study and discussed at the public meetings will be examined further on in this report. In any event, the Panel is satisfied that the proposal does, in fact, apply to the Port's immediate and medium-term future.

**ENVIRONMENTAL IMPACT,  
PROBLEMS AND CONCERNS**





## 1. General Considerations

During the review of the proposal and, more particularly, during the public meetings, the Panel heard the views of many individuals, groups and organizations concerning the anticipated impact of the proposed expansion and other related problems.

Little criticism was heard concerning the EIS prepared by the Port of Quebec and its consultants, Roche et Associes. The briefs presented to the Panel made little mention of the project's impact on the biophysical environment. Most of those who referred to the biophysical environment were satisfied with the proponent's analysis and the proposed mitigation measures.

On the other hand, the briefs contained widely diverging views on the proposal's socio-economic impact. Some pointed out the benefits, among them job creation and development of the regional economy. Others, citing a recommendation made at the Quebec Regional Economic Summit in September 1983, asked that the proposal be shelved pending study of the site's recreational and tourist potential.

## 2. The Biophysical Environment

### 2.1 Introduction

In May 1982, the Environmental Assessment Panel on the Port of Quebec Expansion Project forwarded its assessment of the Pluram report to the Port Authority. Taking into account the many comments made by participants at the 1982 public information meeting, the Panel indicated that the Pluram report, submitted in the fall of 1981, concerning a 210 hectare expansion was deficient in its study of the biophysical and socio-economic environments. The letter included a list of the deficiencies in question.

The Panel therefore requested that the proponent provide it with a detailed description of the project, including the use that would be made of the facility and an analysis of all the environmental impacts at each stage of construction. To that end, the Panel identified several characteristics of the physical environment that would have to be considered, namely, noise levels, climate, air quality, geomorphology of the shores, hydrodynamics, ice formation, sedimentation, and the quality of both the sediments and the water. The Panel also asked for supplementary information on the biophysical habitat; specifically, the area's intertidal flora and the benthic fauna, fish and bird populations. In addition, the visual impact of the proposed facility would have to be fully described so that the project's socio-economic impact could be reviewed.

In November 1983, the Port of Quebec presented the Panel with a new EIS. The EIS, part of which had been prepared by Roche et Associes, included the Port of Quebec's response to the Panel's request in May 1982 for additional information on the project's impact on the biophysical environment.

Most of the individuals and organizations that participated at the March 1984 public meetings and who commented on the

Roche et Associes study lauded the way in which it had handled the question of the biophysical environment.

It seems that the decision to reduce the new facility from 210 hectares to 42.5 hectares was based on the realization that the project, as initially proposed, would have caused considerable damage to the biophysical habitat. The EIS states that based on experiments that were made with a hydraulic model, there would be a disruption of the river's flow and of the sedimentation process if the expansion was beyond the hypothetical limit of 55 hectares examined by the model. Most of the participants at the public meetings approved the modified project; some of them, however, with the proviso that it be definitely limited to 42.5 hectares. The proponent pointed out that its modelling study of a 55 hectare project had led it to conclude that any expansion beyond that limit could have a serious effect on water quality in the St. Lawrence to the north of the Ile d'Orléans. Further study would be needed if an expansion exceeding 55 hectares was to be considered, since it would alter both the hydrodynamic and the sedimentation processes in the Beauport area.

The following section will examine the biophysical aspects of the proposal as described in the EIS and as discussed at the public meetings. It first of all summarizes the opinions expressed by the proponent and the various intervenors, and concludes with the Panel's comments.

### 2.2 The Beauport Tidal Flats and the Proposed Expansion

#### 2.2.1 The Beauport Tidal Flats

As previously noted, the area referred to as the Beauport tidal flats is composed exclusively of the intertidal zone to the east of the mouth of the St. Charles River, whereas the man-made peninsula that was constructed during the early sixties (see map) is called the Champfleury tidal flats. Several participants pointed out that the Beauport tidal flats are rich in natural resources such as marine vegetation and birdlife.

The Beauport tidal flats owe their current shape mainly to the many encroachments made on the river since the last century. In fact, the EIS estimates that encroachments on the tidal flats and on the river itself between 1887 and 1978 now cover a total of 219 hectares. Some participants, among them the Société Linneenne, les Ami(e)s de la terre and l'Association des citoyens de Beauport, wondered whether or not the encroachment would be stopped, before the St. Lawrence River is completely closed to recreation, tourism or any other use. It is worth recalling that the Port of Quebec, the Reed papermill (formerly, the Anglo Pulp mill), the Quebec Department of Transport and CN Rail are among those responsible for the various encroachments.

The EIS describes the Beauport tidal flats as a low-gradient intertidal zone with average tides of 4 metres and spring tides reaching up to 5.6 metres.

The western and central portions of the tidal flats consist of light sediment covered here and there with very soft silt.

Deposits up to 1 metre thick are found in the central part of the foreshore, and soundings that were carried out during construction of Highway 440 indicated a layer of sediment reaching depths up to 10 metres.

The tidal flats' configuration begins to change 1.4 kilometre to the east of the mouth of the Beauport River. At that point, it consists of a rocky platform with a sandy sediment overburden.

The EIS describes two types of shoreline along the upper reaches of the existing tidal flats. The shoreline abutting the extreme edge of the man-made encroachments consists, along its entire length, of an uneven slope that was formed following a series of backfilling operations. It varies in height from 5 metres at its eastern end to somewhat less than 1 metre at its southern end. The beach at the foot of the Champfleury tidal flats consists of sandy sediment eroded from earlier backfillings and alluvial deposits from the St. Charles and Beauport Rivers.

From the shoreline outward, the tidal flats' geomorphology consists of the mud-like soil from the backfill, tidal flats covered with marine vegetation, and the outer mud-flats, which are bare.

### 2.2.2 The Area Covered by the Proposed Expansion

The expansion envisaged by the Port of Quebec is between the mouth of the St. Charles River on its western flank and the Beauport River to the east. It is actually an expansion of the existing facility, which was built in the early sixties and is known today as the Champfleury tidal flats. As can be seen on the accompanying map, the new expansion would extend the existing facility further into the river. For that reason, it would not encroach on the Beauport tidal flats as outlined in section 2.2.1 of the EIS. Many participants at the public meetings agreed with the proponent's claim that the 42.5 hectare expansion is unlikely to have a significant impact on the Beauport tidal flats.

## 2.3 Intertidal Vegetation

Two species of marine plant life which grow on the Beauport tidal flats are zizania (wild rice) and bullrushes. Zizania grows on the upper reaches of the flats' middle zone and bullrushes grow in its lower reaches; their range being determined by hydrodynamic and sedimentary processes and coastal characteristics. The presence of zizania seems to be affected by the depth of the tidewater, the river current and the wind pattern. Large colonies of zizania can thus be found in sheltered areas, mainly in the lowlands to the south-west and the north-west.

Construction of the now fully serviced Champfleury facility (mentioned in section 3.2.2 of the EIS) has led, first, to an accumulation of sediment and, later, to the formation of an intertidal flat providing fertile ground for certain types of vegetation.

Depth of sediment seems to have no effect on the growth of zizania; rather its distribution seems to be related to the depth of the tidewater. It grows in an area 35 to 283 metres wide and

between 4 metres and 1.6 metres above the zero mark on the tide gauges.

Because bullrushes endure faster currents than zizania and have greater resistance to icing conditions, they survive in the far reaches of the midzone, between 2.6 metres and 1.1 metre above the zero mark on the tide gauges.

The EIS noted that the expansion would eventually prove beneficial to marine vegetation along the tidal flats. The current would be slower in the vicinity of the inlet to the south-west and consequently additional light sediment would be deposited causing marine vegetation to take root and spread. The EIS also notes that the tidal flats bordering on the south-west inlet would likewise expand, and consequently concern for the conservation and preservation of the habitat in the area should be reduced.

While a number of intervenors noted the fragility of the Beauport tidal flats vegetation, all seemed convinced that the 42.5 hectare project would not harm the intertidal marshes. Finally, the Panel was requested to ensure that the situation be monitored by means of a continuing ecological survey to assess the net productivity of the region's intertidal marshlands.

## 2.4 Birdlife

The project's potential impact on birds was also an issue of concern at the 1982 public information session, and the subject was included in the Panel's list of deficiencies.

The proponent, along with many participants at the public meetings, including the Association des biologistes du Québec, the Club des ornithologues, the Société Inter-Port, Environment Canada and Environnement Québec commented at length on the wealth of the birdlife found on the Beauport tidal flats.

The proponent and many participants pointed out that the tidal flats provide an exceptional habitat for a large number of permanent bird species (140 species) as well as for thousands of waterfowl, particularly during the spring and fall migrations. Chief among them are limicolae (snipes, plovers, marsh sandpipers, etc.), anatidae (ducks and geese) and laridae (gulls).

The diversity and abundance of the birdlife in the Beauport area is directly related to the wide variety of habitat provided by the tidal flats. The expanse of eelgrass and shoals shelter large flocks of anatidae, and the barren portion of the tidal flats is home to large numbers of limicolae.

The south-west inlet has long been known as a favoured bird haven as a result of its wealth of marine vegetation. The participants unanimously agreed that the area must be designated as a protected bird habitat. In fact, the Club des ornithologues du Québec cited the apparent emergence of a "political will" to preserve valued ecological areas along the shores of the St. Lawrence River.

Most often mentioned was the concern over noise and the movement of trucks, machines and boats, which could cause birds to abandon an area several hundred metres wide in the

vicinity of the construction site. Some participants conceded that sediment re-suspended during dredging operations would probably not affect birdlife but feared that the noise generated by construction activity probably would.

The proponent was willing to carry out phase two of the construction schedule between May 15 and August 15 when, according to the proponent, construction would not adversely affect birdlife. Environnement Quebec suggested that construction take place during the summer months, while Environment Canada would like the habitat to be left undisturbed between July 15 and September 15. The Panel, aware that shore birds are the most likely to be disturbed by construction operations, recommends that the proponent reach an agreement with the responsible authorities (e.g., Environment Canada and Environnement Quebec) about the period that would be best suited to construction activity.

The EIS indicated that activities at the construction site would not likely disturb the limicolae that gather in relatively secluded but noisy areas such as the south-west and north-west inlets. However, work on the expansion would affect the shallow areas that are used as a resting place by diving ducks during their spring migrations. The impact was considered to be minor because the expansion would cover only a small part of the relatively large habitat, which extends eastward as far as the Ile d'Orléans. The Panel was informed that diving ducks make little use of the shallow areas in the autumn because they are deterred by windsurfers. The impact on the diving-duck colony would be slight, but permanent.

There was some disagreement whether a port, a combined port and recreational area, or a unique recreational area would least disturb birdlife. La Societe Inter-Port pointed out in its brief that the impact of a facility devoted either to a combined port and recreational area or solely for recreational purposes would be greater than if it served strictly as a port. The EIS noted that birds stay clear of the beach area when windsurfers are present. In addition, as previously noted, the impact would be positive along the south-west inlet where the tidal flats would be enlarged through sedimentation.

The Panel believes that in light of the many presentations it has heard requesting the preservation of the large bird habitat in the south-west inlet, all interested parties should ensure that it be protected and designated as a bird sanctuary.

## 2.5 Sedimentation

Following the Pluram report, which proposed a 210 hectare expansion, many participants expressed concern over the effect of the project on the process of sedimentation. Their concern was reduced however once the proposed expansion had been reduced to 42.5 hectares.

According to the EIS, sedimentation would be slightly altered as a result of the project. There would be a slight increase in sedimentation, particularly in the vicinity of the south-west inlet.

The proponent claimed that the change would be minor, but Environnement Quebec believed that aspect of the project needed further study.

The Societe Linneenne informed the Panel that it did not agree with the evaluation of the rate of sedimentation in the EIS and, particularly, with the assessment of the biological changes that would result from the net accumulation of sediment in the south-west and north-west inlets, "Is it not to be expected," the Societe declared "that sedimentation will in fact increase substantially and that, sooner or later, sediment will accumulate to the point where that part of the bay, behind the new jetty, will be completely filled in? Will Nature refrain from slowly but surely prolonging the encroachment, and will the area north of the jetty not become unusable for recreational purposes?"

Following an exchange of views between the Societe Linneenne and consultants from the Groupe Roche, it was agreed that the area north of the proposed jetty is not now used for recreation but is, in fact, a habitat for shore birds. The consulting firm has even suggested that the sector be utilized exclusively as an ecological and observation area, a suggestion that met with the approval of many groups at the meetings. As noted earlier, the anticipated sedimentation is not expected to disrupt the sector's birdlife.

The Panel is satisfied that the proponent has provided satisfactory information on sedimentation and has fully complied with the Panel's request in this regard.

## 2.6 Ice Formation and Breakup

A number of those who participated in the 1982 public information meeting wanted more information on the effects the Port of Quebec expansion might have on the formation and breakup of river ice. Their overriding concern was that the expansion might delay the spring breakup and, hence, the growth of marine vegetation. The Panel had requested further information on this subject in its list of deficiencies.

The Panel is satisfied with the answers provided in simulation modelling tests conducted by the Lasalle Hydraulic Laboratory (LHL) comparing the present situation with what would happen after construction. The proponent made a field survey of the ice cover in March and April 1983 to verify its initial assumptions and validate the results it had obtained using the hydraulic model.

LHL's main conclusion was that the 42.5 hectare expansion would cause the riverbed to rise in the vicinity of the south-west inlet and thus bring about expansion of the intertidal zone at low tide. Since winter ice tends to melt on the spot in the Beauport area, those two factors in combination would cause faster ice formation at the onset of winter and slower thaws in the spring.

There was little discussion of ice conditions at the public meetings, although Environment Canada noted that the studies of the hydraulic model constituted a major component of the analysis of the project's probable impact on the river's hydraulic and ice forming processes and that the conclusions drawn in the EIS were sound.

The Panel agrees with the proponent's view that the expansion's impact on ice behavior will be minimal.



## 2.7 Water Quality in the Beauport Area

Water quality was discussed briefly at the public meetings. Some groups mentioned it in connection with recreational activities, and one group was concerned that the project might raise water pollution levels. The Port of Quebec Authority examined whether construction of the expansion might raise the pollution level in the river. The question can be studied in three parts: 1) the existing conditions and those that are likely in the future if the project does not proceed, 2) the impact of construction activity on water quality, and 3) the effect that port activity might have on water quality.

### 2.7.1 The Situation Today

The EIS indicated that the water quality off the Beauport shore ranges from average to fairly good. It identified the main problems as high turbidity, a high coliform count and high concentrations of mercury. The high turbidity is attributed to the St. Charles and Beauport Rivers, to effluent from the cities of Quebec, L'Isle and Beauport, and from the Reed Paper Company.

The total coliform count, exceeds the level considered safe for swimming. The water seems to have lower concentrations of fecal coliforms near the tidal flats than downriver from Beauport.

With respect to mercury content, the EIS mentioned that concentrations off the Beauport tidal flats should be the same as those that were found upstream and which are higher than current standards.

According to the EIS, the St. Lawrence River's capacity for self purification is higher than it is at the Beauport tidal flats. The study stressed however that there is a great difference between the water surfaces of the two sectors.

### 2.7.2 Water Quality During Construction

Dredging, construction of the sand dikes, the sinking of the caissons and the backfilling of the service areas would affect water quality.

During the sinking of the caissons, the building of the dikes and the hydraulic dredging, sediment would be disturbed and the concentration of suspended solids in the waters adjacent to the site would increase. The EIS estimated that suspended solids would be released at the rate of 8 cubic metres per hour. Taking into account the current's speed and the river's diluting capacity in the Beauport area, such activities would not significantly increase turbidity in the area. The proponent estimated that dredging operations would have only a minor effect on water quality in the Beauport area. It even suggested that the dredging would help cleanse the surroundings by removing the contaminated sediments that now cover the river-bed. However, it was noted that this would occur only in proximity to the work site and that the benefits would be short-lived since the current continuously carries contaminated sediment from upstream.

Construction of the sand dikes would increase local turbidity, which would gradually diminish, however, until it would no

longer be noticeable a few hundred metres from the point of origin. It is evident that with the existing current no sediment will move upstream at any time. Downstream, sedimentation would be sufficiently diluted to the extent that it would not affect water quality at l'Anse-aux-Sauvages, where the city of Lauzon draws its drinking water. Finally, the consultants pointed out that dike construction and backfilling operations were not likely to affect the water's chemical quality.

The dredging program proposed by the Port of Quebec, includes several measures designed to mitigate the impact of dredging operations on the marine environment. The Port intends to identify these measures when tenders are called for the dredging contract.

The proponent recommended a monitoring program so that the dispersion of fine particulate matter and the concentration of contaminants released during dredging and backfilling operations can be monitored. It further recommended that the contaminants contained in the top layer of the sediment on the riverbed be analyzed both before work begins and while it is in progress.

The Panel agrees with the suggested measures proposed in the EIS and urges the proponent to implement them under supervision by Environment Canada.

The Panel also accepts the mitigation measures proposed by the proponent to ensure that water quality is maintained during construction of the expansion. The proposed measures include installation of chemical toilets and the safe storage of petroleum products. In addition, as construction finishes the contractor will be bound to recover left-over materials and dispose of them in an environmentally safe manner. He must also ensure that solid waste, drainage from storage areas containing toxic materials, and other products such as cement and residual oil and dust are removed without contaminating the water.

### 2.7.3 Water Quality and Port Activities

Since the nature of products and merchandise which would be handled or stored on the site is unknown at present, the proponent was unable to provide any more than a general description of the environmental effects of post-construction activities. It believes that the most severe impact would result from accidental spillage and that cannot be assessed at present. In order to assess possible effects, the toxicity of the products must be known as well as the ease with which they can be recovered.

The proponent maintained throughout the meetings that the new facilities would be used predominantly for trans-shipment. Even though the nature of the products is unknown, it suggests, based on the results carried out on the hydraulic model, that a contingency plan be drawn up to prevent and control any spillage of hydrocarbons that may occur on the new site. The plan should be specifically tailored to the type of activity that would take place and the products that would be involved. The proponent has gone so far as to recommend in its written presentation that a study of the environmental impact of specific products be made each time a new activity begins in the harbour area.

The Panel agrees, for it believes that the transshipment of liquid bulk products, loading fuel oil on the ships and the accidental spillage of ballast or any other product could harm the environment. The Panel recommends adoption of the measures put forward by the proponent to minimize such hazards. The Panel is particularly interested in such precautions as the installation of floating barriers around the ships when they load liquid bulk products and when they refuel. Further, the proponent should also construct impermeable barriers around all liquid-bulk storage tanks on the site.

The Panel recommends that a contingency plan be drawn up to contain and recover any accidental spillage. In addition, it recommends that an environmental assessment be carried out every time a new installation is considered for the new area of expansion. All such assessments should conform to the policies in force at the time.

## 2.8 Air Quality

Some participants at the public meetings were concerned about air pollution. They seemed to agree with the proponent's assessment of the project's impact on air quality as well as the proposed mitigation measures. They were anxious for the Panel to hear their views, particularly in regard to the proponent's commitment to the proposed mitigation measures.

Other participants such as the City of Quebec, Environment Canada and Environnement Quebec, expressed a special interest in problems relating to airborne dust, which already exceeds accepted levels in the district of Limoilou and in the neighborhood of the port. Environnement Quebec emphasized the difficulties in determining the contribution that can be ascribed specifically to port operations. However, it was acknowledged that high dust levels result from north-easterly winds, which are often strong.

The EIS conceded that air quality would be affected by construction and possibly during subsequent port operations. Given that the Port of Quebec does not know who would use the new facilities, forecasts of the impact of future operations could only be generalized. Yet the proponent has attempted to present some information to the Panel for some types of general cargo such as grains and ores.

The main sources of air pollution during construction would result from the movement of trucks carrying dike and caisson building materials, the construction materials themselves, any cement that may be manufactured on the site, and other related operations, such as trash burning. In this regard the Port of Quebec Authority reminded the Panel that trash burning is forbidden in all areas under its jurisdiction.

Notwithstanding the proponent's contention that construction would only have a minor impact on the environment, federal and provincial departments of Environment insisted that the mitigation measures in the EIS must be seriously considered.

The proponent proposed several mitigation measures to minimize the possible deterioration of air quality on the worksite. These included spraying the site's roadways with water or,

alternatively, the application of dust abatement substances. As for the transport of construction materials, the proponent cited provisions of the provincial *Loi sur l'environnement* and of section 418 of the highway code requiring that all loads likely to generate dust must be covered with tarpaulins. It also mentioned that problems related to noise and noxious gasoline fumes could be alleviated by routing the trucks through major traffic arteries and, preferably, through those that avoid residential areas.

The City of Quebec has urged the Panel to recommend installation of a greenbelt approximately 30 metres wide, consisting of a grassed area, a hedge and a row of trees, to form a screen to reduce the wind and hence the transport of airborne dust. As a result of discussions between the City and the Port, the Port of Quebec undertook to study Quebec City's proposal to implement an effective dust abatement program. Environnement Quebec further recommended in its brief that a row of trees be planted on the new expansion and, if possible, elsewhere in the port complex so as to isolate nearby residences from port activities.

The Quebec City presentation suggested other abatement measures, some of them echoing sections of the Roche report. The measures favoured by the Port Authority include using dust-abatement equipment such as closed, or sealed, conveyor systems, spraying on-site materials in dry and windy weather, and either covering products that are subject to wind erosion or placing them in buildings. The EIS also suggested other means of inhibiting air pollution.

Environment Canada announced that it intends to install a weather station on the existing facility to determine the local wind pattern at the port. The station's prime purpose would not be to monitor air quality, but rather, to gather data that would enable meteorologists to determine the precise way in which wind circulates in the area. Environment Canada added that the station would be dismantled at the conclusion of the 1984 marine festival.

During the discussion on the question of a new weather station the Port of Quebec representatives informed the Panel that air quality has been monitored at three stations for slightly more than two years. These stations complement the Quebec Urban Community's existing network. The stations are located at the Port's property boundary and measure the pollutants most likely to result from marine operations. Port spokesmen have advised the Panel that these stations have reported a reduction in pollutants in 1983.

The Panel concludes that the port expansion project will have an adverse effect on air quality but that abatement measures are available that can minimize the impact. The Panel is satisfied that the proponent has suggested a variety of effective abatement measures and recommends that they be implemented as and when necessary.

The Panel has noted the proponent's promise to look into the possibility of creating a greenbelt if it appears to be effective and required. The Panel recommends that this possibility be studied further and if the results show that greenery would help filter the air in the designated sectors, then the proponent

should proceed to implement the necessary mitigation measures.

Finally, the Panel recommends that the weather station at the existing facility be kept in service.

### 3. Noise Abatement

The EIS claimed that most of the expected noise would originate on the construction site and that, even then, it would not carry far. Noise levels have been measured in the residential area lying between Henri Bourassa and Ste. Anne Boulevards and d'Estimauville Street as well as in the area bordering on Lavoie and des Marinieres Street and du Fleuve Avenue. Noise levels are already high in those sectors, owing in large part to the heavy traffic on Ste. Anne Boulevard. It is anticipated that, the noise emanating from existing sources and that from the construction site would not appreciably exceed current levels in the daytime.

At night, however, depending on the type of construction work and its source, the area bordering on du Fleuve Avenue and

Lavoie and des Marinieres Streets would experience an increase in noise levels ranging from 0 to 14 db (A).

The proponent suggested several mitigation measures. Since the increased noise levels would be caused by truck traffic, it is proposed to examine the trucking routes carefully. The use of arterial routes which have fewer residences was recommended. In addition truck traffic would cease from 11:00 p.m. to 6:00 a.m.

In the event that truck movement cannot be halted because certain activities cannot be stopped or because scheduling would be dependent on the tides, it was suggested that trucking occur in the daytime and with the material being stored temporarily on the site.

As for noise emanating from the port activity, the proponent advised that, following simulation of a specific noise source equivalent to 120 db [A], the residential areas closest to the facility would experience no appreciable increase in noise levels.

The Panel accepts the recommendation that measurement of day and night-time noise levels be included in the environmental monitoring program for the project.

The participants accepted the proponent's analysis, and the Panel has concluded that the proponent should take steps to reduce noise levels in residential areas by applying the abatement measures recommended in the EIS, in particular those concerning the selection of truck routes and a ban on trucking and construction work from 11 p.m. to 6 a.m.

## 4. Socio-economic Impacts and Concerns

### 4.1 Economic Considerations

With the full support of the administration of Ports Canada, the proponent strongly emphasized the important role the new expansion would play within the general framework of national and international maritime transport. The Panel paid particular attention to the economic spin-offs that would result from the project, notably job creation in the surrounding communities. A large number of participants, among them elected representatives of a majority of the local population, expressed both local and regional views on this matter.

#### 4.1.1 Regional Employment

Groups favouring the project supported the proponent's contention that the Port of Quebec plays an important role both nationally and internationally and added that the port's status might be jeopardized if the Port Authority was denied the right to expand to provide specific facilities which they judged to be environmentally acceptable.

However, it is more difficult to identify the probable local and regional benefits accruing from the 42.5 hectare project given the nature of the activities projected for the Champfleury expansion and the construction method that would be used to





should proceed to implement the necessary mitigation measures.

Finally, the Panel recommends that the weather station at the existing facility be kept in service.

### 3. Noise Abatement

The EIS claimed that most of the expected noise would originate on the construction site and that, even then, it would not carry far. Noise levels have been measured in the residential area lying between Henri Bourassa and Ste. Anne Boulevards and d'Estimaerville Street as well as in the area bordering on Lavoie and des Marinieres Street and du Fleuve Avenue. Noise levels are already high in those sectors, owing in large part to the heavy traffic on Ste. Anne Boulevard. It is anticipated that, the noise emanating from existing sources and that from the construction site would not appreciably exceed current levels in the daytime.

At night, however, depending on the type of construction work and its source, the area bordering on du Fleuve Avenue and

Lavoie and des Marinieres Streets would experience an increase in noise levels ranging from 0 to 14 db (A).

The proponent suggested several mitigation measures. Since the increased noise levels would be caused by truck traffic, it is proposed to examine the trucking routes carefully. The use of arterial routes which have fewer residences was recommended. In addition truck traffic would cease from 11:00 p.m. to 6:00 a.m.

In the event that truck movement cannot be halted because certain activities cannot be stopped or because scheduling would be dependent on the tides, it was suggested that trucking occur in the daytime and with the material being stored temporarily on the site.

As for noise emanating from the port activity, the proponent advised that, following simulation of a specific noise source equivalent to 120 db [A], the residential areas closest to the facility would experience no appreciable increase in noise levels.

The Panel accepts the recommendation that measurement of day and night-time noise levels be included in the environmental monitoring program for the project.

The participants accepted the proponent's analysis, and the Panel has concluded that the proponent should take steps to reduce noise levels in residential areas by applying the abatement measures recommended in the EIS, in particular those concerning the selection of truck routes and a ban on trucking and construction work from 11 p.m. to 6 a.m.

## 4. Socio-economic Impacts and Concerns

### 4.1 Economic Considerations

With the full support of the administration of Ports Canada, the proponent strongly emphasized the important role the new expansion would play within the general framework of national and international maritime transport. The Panel paid particular attention to the economic spin-offs that would result from the project, notably job creation in the surrounding communities. A large number of participants, among them elected representatives of a majority of the local population, expressed both local and regional views on this matter.

#### 4.1.1 Regional Employment

Groups favouring the project supported the proponent's contention that the Port of Quebec plays an important role both nationally and internationally and added that the port's status might be jeopardized if the Port Authority was denied the right to expand to provide specific facilities which they judged to be environmentally acceptable.

However, it is more difficult to identify the probable local and regional benefits accruing from the 42.5 hectare project given the nature of the activities projected for the Champfleury expansion and the construction method that would be used to



under construction and those to be built in future. Mainly because of the influence of those who are sceptical, developments of that sort will experience a higher vacancy rate and/or it will take longer to sell them." The Chamber repeated this statement at the meetings.

The Panel wondered whether the view of the beach and of the windsurfers' manoeuvres would not add to the quality of the environment rather than subtract from it. The Panel noted that, if account is taken of such recreational assets as bicycle paths, scenic lookouts, roadside rest stops, parklands and scenic buffers, as well as greater protection for birdlife, then it is possible to consider that adjacent properties could benefit from the development.

Of course, such observations are based on the premise that the proposed mitigation and control measures would be implemented both during construction and operation of the new facility. Several participants, among them the Quebec Urban Community, have drawn up an inventory of the various mitigation measures proposed. They are outlined in the next chapter, and are referred to in the Panel's list of recommendations.

The Panel also notes that the hydroelectric lines leading to the facility would apparently be buried, and thus would not have a visual impact.

#### 4.2.2 Recreation, Cottagers and Tourism

From the beginning of the environmental review process, participants emphasized the project's impact on recreation and tourism. It appears that interest in the Champfleury sector's recreational potential was inspired by what developed at the Champfleury tidal flats following a succession of expansions by the Port of Quebec over the past two decades. In effect, the expansions led to an accumulation of sand and, eventually, a natural beach formed along the man-made peninsula. The Port of Quebec's administration had included this recreational function in their expansion proposal.

In that respect, the Panel noted that the Quebec Urban Community and the City of Beauport have requested the completion of the recreational aspects of the project, at least in part, by 1992, when sewage treatment should ensure a higher water quality.

Most participants, primarily representatives of local and regional government bodies responsible for land development, indicated that on the whole they were satisfied with the way the proponent had dealt with the recreation and tourism aspects of the project. They insisted nonetheless that the proponent honour the many commitments it had made as well as the suggestions outlined in their own briefs and in their interventions at the public meetings.

Those who advocated that an unconditional priority be granted to the project's recreational aspect remained opposed to the proposal as it now stands. Some said they were willing to discuss the proposal as a whole but wanted the Panel to impose a moratorium until recommendations of the comprehensive study on the recreational role of the area are known. (The comprehensive study had been recommended at the

1983 Quebec Economic Summit.) This group included the Association des citoyens de Beauport, the Association des biologistes du Québec, the Société Linneenne du Québec, the Conseil de développement du Québec métropolitain, the Club des ornithologues, Groupe Ecoville and the Rassemblement populaire de Québec.

Finally, the Panel found no evidence that the proposed project would appreciably affect the lifestyle of vacationers. That is hardly surprising, since there are no cottages on the shores in that area and the cottages at the western tip of the Ile d'Orléans are probably too remote from the proposed expansion to be affected by it.

## 5 Mitigation Measures and Their Implementation

The proponent proposed mitigation measures to minimize the project's environmental impact, both during construction and operation of the facility. Most of the mitigation measures to be applied during construction have to do with air and water quality, noise, sedimentation and birdlife. The Port Authority also proposed to minimize effects of marine operations by restricting activities relating to cargo handling, stockpiling of general merchandise, containers, and solid and liquid bulk products, and related operations of a nonpolluting nature. The proponent stated that any new development would be subject to an environmental assessment.

### 5.1 Mitigation During Construction

During construction a number of specific measures would be implemented to minimize negative impacts.

Some participants favoured rapid completion of the expansion. The City of Beauport felt that rapid completion of Phases one and two would be advantageous to its citizens since it would allow earlier access to the beach. The Quebec Urban Community would prefer all construction to proceed in a single phase before 1992, when the sewage treatment facility is scheduled to go into operation. The Panel recommends that Phases one and two be completed simultaneously to reduce the negative impact on those who will make use of the beach and of the recreational facilities.

On the basis of the proponent's intended mitigation measures and similar suggestions by many participants the Panel believes that there is a consensus on what must be done. Experience has shown, however, that agreements in principle often lead to serious differences of opinion in matters of detail. It would appear that the proposed mitigation measures would be more likely to succeed if all interested parties were to come to an agreement before construction begins. Consequently, the Panel believes that it would be appropriate for the main parties involved to meet as members of a monitoring committee to determine exactly what measures ought to be taken. The committee would also have a role of ensuring that the agreed upon mitigation measures are actually implemented.

No suggestion can be found, either in the proponent's proposal or in the presentations made by the intervenors, about

which organizations should be involved in ensuring that mitigative measures are implemented. The Panel believes that the responsibility lies with the Port Authority and that government bodies familiar with local conditions and having the required expertise should be invited to collaborate with the Port Authority. Specifically, the government authorities are the City of Quebec, the City of Beauport, the Quebec Urban Community, Environnement Quebec and Environment Canada.

## 5.2 Port Activities

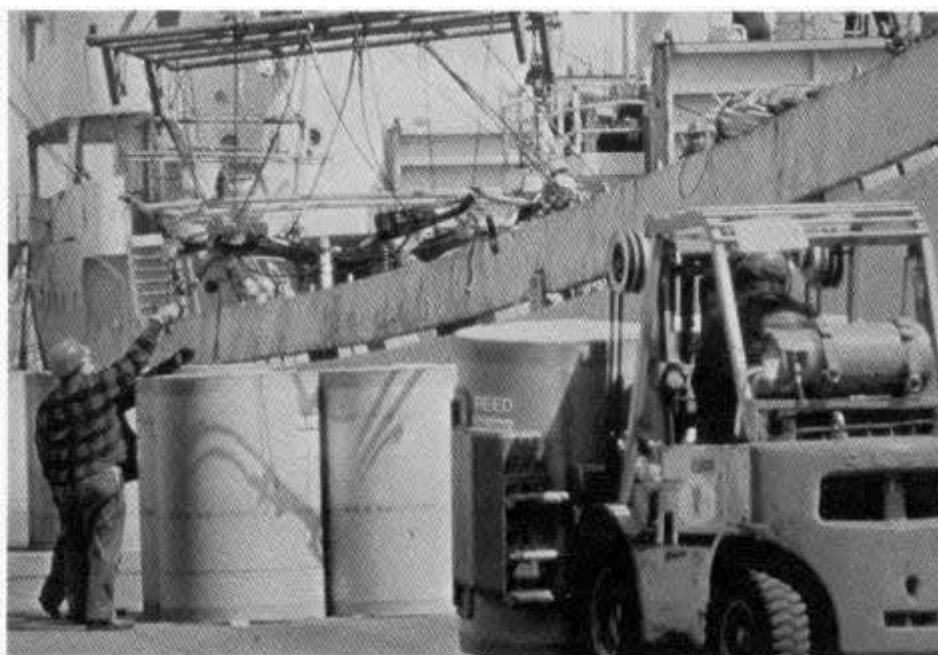
With respect to specific mitigation measures to be applied in the operation of the new facilities, Environment Canada pointed out that "experiments carried out on the hydraulic model indicate that an action plan will have to be developed to control hydrocarbon spillages on the new site and to determine ways of preventing spills from new activities and products". Environnement Quebec proposed mitigation measures similar to those put forward by the proponent but underlined the importance of the implementation mechanism. Environnement Quebec pointed out that "Considering that certain negative effects are to be expected, and considering that in some cases the effects cannot be predetermined, the Port of Quebec administrators should ensure that preventive measures designed to protect the tidal flats and the neighboring populations can be implemented by a clearly defined decision-making process."

Municipal authorities were primarily concerned with the mitigation of negative impacts in urban areas. The City of Quebec was particularly concerned about air quality in Limoilou and consequently has proposed measures to reduce the spread of dust to urban areas. The Communauté urbaine de Quebec cited the need to adopt similar measures to ensure that construction of the facility and in particular future operations on

the site, would not cause any further deterioration of air quality in adjoining urban areas. The CUQ also stressed the importance of "holding public consultations before any new industry is established on the tidal flats site." The City of Beauport likewise emphasized the need for consultations between the proponent and the various local governments regarding the establishment of any new facility on the proposed site.

The proponent will abide by the federal Environmental Assessment and Review Process when it has been determined precisely how the additional space will be used. The Panel believes that whenever a new development is considered for the site, the Port should formally consult with the principal local governments concerned early in the initial environmental assessment. The Panel also believes that the Port of Quebec should set up a monitoring committee to ensure implementation of all mitigation measures when new activities occur at the new site.

In addition, the Panel points out that use of the beach and recreational facilities (scenic lookouts, bicycle paths, etc.) might have an undesirable impact on the environment on the north-eastern side of the proposed expansion. Lack of maintenance or even inadequate maintenance of the facilities could not only lead to an accumulation of waste and litter but it might also jeopardize the safety of users. Therefore, access to the site and use of the facilities will have to be controlled. The Panel hopes that the Port of Quebec, while retaining ownership of that part of the site, can entrust the administration to a public agency. The City of Beauport has volunteered to assume responsibility for the planning and administration of the site's recreational facilities. The Port Authority has accepted the offer and has undertaken to discuss it with City of Beauport officials. The Panel welcomes that development and expects that it will expedite an agreement.



## **POLITICAL ISSUES**



Throughout the public meetings, and in several briefs, two topics were repeatedly brought to the Panel's attention: land-use planning and the cumulative effects of other anticipated projects in the Beauport tidal flats area. These two topics were very important in the view of some participants and relate to the biophysical and socio-economic aspects of the project that are reviewed in this report. In the opinion of the Panel, neither question can be resolved within the framework of the Panel's assessment of the proposed port expansion as such. Since the required solutions involve local and provincial authorities to whom this report is not directed, the Panel does not consider it appropriate to make recommendations on this matter. At the same time, the Panel wishes to summarize the views that it has received for those who may be concerned with this issue.

## 1. Land Use

In both written briefs and at the public meetings, some participants asked the Panel to suspend the project until a study of the Beauport area's recreational and tourist potential is completed. The intervenors were echoing one of the suggestions put forward at the Quebec Economic Summit in September 1983. These participants had previously written to the Panel requesting that the public meetings be postponed pending announcement of the results of the study. The letter was jointly signed by eight organizations: Les Ami(e)s de la Terre, l'Association des citoyens de Beauport, l'Association cooperative d'économie familiale, le Club des ornithologues, le Club de veliplanchistes du Québec, le Conseil de développement du Québec métropolitain, Projet Ecoville and la Société Linéenne du Québec.

The same parties recalled how utilization of the site of the proposed expansion had changed over the years. The site on the Champfleury tidal flats was developed as an expansion of the port of Quebec in the early sixties. The combined formation of a natural beach and under-utilization of the area behind piers 53 and 54 was an attraction for local people. The participants pointed out that the area now attracts thousands of people, whereas five years ago, it attracted a mere handful of wind-surfers. The Association des citoyens de Beauport alluded to the celebration of "Beauport Tidal Flats Day," on September 25 1983, organized by the Port of Quebec and other organizations — in which some 5,000 people participated. The Association des citoyens de Beauport polled the participants and forwarded the results to the Panel.

The uses that the above organizations favour for the future site are contrary to those favoured by the Port of Quebec. These organizations have made it clear that they question the assurances given by the Port Authority to set a part of the new expansion aside for recreational purposes. They contend that the elected representatives have not adequately consulted the population about the site for other than port-related purposes. They underlined the lack of a management plan that would provide the basis for discussion on the importance of maintaining access to the river in the region.

## 2. The Cumulative Impact of Other Developments

A number of participants reminded the Panel that the proposed expansion was not the only project under consideration for the Beauport area. There is, firstly, the beach proposed by the Port Authority, which would provide access to the south-west arm and improve it as an observation point. In addition, there is the proposed construction of the sewage treatment facility to serve the eastern portion of the Communaute Urbaine de Québec. The CUQ told the Panel that it was considering locating the treatment plant on one of two possible sites, both near the south-west inlet. If the site which is favoured by the CUQ and other parties to this review is chosen, there would be no need to fill part of the south-west inlet which, according to Environment Canada, is an important ecosystem. Other groups such as the Association des biologistes du Québec, the Ecoville project and the Société Linéenne stressed that the proposed treatment plant could have a negative effect on tidal flats and underlined the importance of protecting this area. It should also be noted that some of the above participants proposed intensive development of the sector for exclusively recreational and sightseeing activities, and that, too, could have a negative effect on the bird habitat at the south-west inlet.

Assessment of the impact of projects other than the port expansion does not fall within the Panel's mandate. Moreover, it would be difficult to discuss other projects since very little relevant information is available. The Panel does, however, recognize the importance of weighing the cumulative impact of all activities planned in the tidal flats area.

## CONCLUSIONS

The Panel concludes that the Port of Quebec Expansion Project, as presented in November 1983 and as discussed at the public meetings, can be implemented without unduly harming the biophysical environment. The Panel also concludes that the anticipated socio-economic impacts directly related to the biophysical environment are acceptable. In this regard, the Panel notes that the project will have a positive impact on employment and on municipal finances. Consequently, the Panel considers that there is no foreseeable negative impact sufficient to prevent the project from proceeding.

The Port of Quebec authority has on their own considerably reduced the scale of the original plans, no doubt because it was realized that the first two proposals would not be considered acceptable by the Panel. In the opinion of the Panel, the 42.5 hectare expansion project appears to be an acceptable solution.

## RECOMMENDATIONS

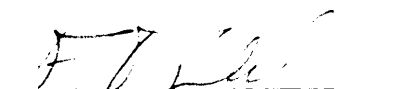
**The Panel recommends that the project, including plans for recreation and a green area, be accepted subject to the following conditions:**

- 1) The proposed expansion in the Beauport area be limited to an area of 42.5 hectares and that no further expansion beyond 42.5 hectares be allowed.
- 2) The first two phases of the port expansion be carried out simultaneously.
- 3) Construction activity in connection with the expansion occur outside of the spring and fall movement of migratory birds and that this period be determined precisely with the assistance of Environment Canada and Environnement Quebec.
- 4) When and where required, measures be taken to minimize the impact on air quality during construction. These measures have been described by the proponent and include: the spraying of truck routes on the worksite, the application of dust abatement substances, and the use of tarpaulins to cover loads that are likely to produce dust.
- 5) Measures be implemented to reduce ambient noise and noxious emissions in residential districts from trucks carrying materials through selection of the routes to be used by trucks and cessation of trucking activities between 11 p.m. and 6 a.m.
- 6) A monitoring program be maintained for each construction activity to ensure strict application of the mitigation measures considered necessary in this report and in particular that measurement of day and night-time noise levels be undertaken within the framework of this program to ensure that levels do not exceed those predicted in the EIS.
- 7) A Monitoring Committee be formed and that it include representatives of the Port of Quebec, Environment Canada, Environnement Quebec, the cities of Quebec and Beauport and the Quebec Urban Community.
- 8) An environmental assessment, in accordance with existing policies, be made each time the Port considers a new activity for the proposed expansion and that the Port consult with interested parties at the beginning of the initial evaluation for each project.
- 9) A contingency plan be developed to contain and recover any accidental spills.
- 10) Measures such as the installation of floating barriers around ships, construction of impermeable barriers around storage tanks etc. be implemented to reduce environmental risks associated with the trans-shipment of liquid bulk products.
- 11) The proponent examine the effectiveness of greenery (trees, shrubs etc.) to remove dust and undertake this measure if the results are positive.
- 12) The proponent reach agreement with Environment Canada to ensure that the existing weather station continues its operation.
- 13) The proponent ensure that the south-west inlet, which is an important bird habitat, will be protected.

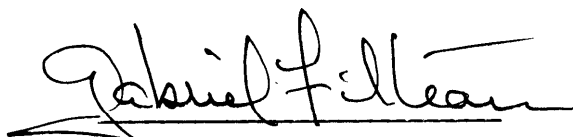
ENVIRONMENTAL ASSESSMENT PANEL  
PORT OF QUEBEC EXPANSION PROJECT



Marcel Lortie  
(Chairman)



Fernand Tremblay



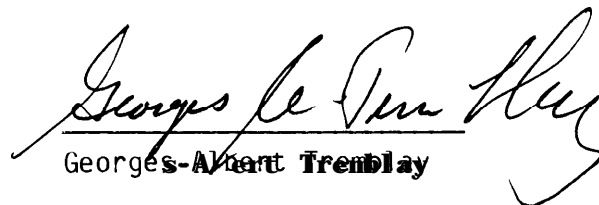
Gabriel Filteau



Frederic De Vos



Vincent Lemieux



Georges-Alexandre Tremblay



## APPENDIX A

### BIOGRAPHICAL NOTES

#### Marcel Lortie (Panel Chairman)

In 1956, Marcel Lortie graduated in Applied Science (Forest Engineering) at Laval University and in 1962 obtained a Ph.D. at the University of Wisconsin.

A member of the Canadian Institute of Forestry and of the Order of Engineers of Quebec, of which he was chairman in 1966, Mr. Lortie was also chairman of the Beauport School Board (1963-1968), founding chairman of the Orleans Regional School Board (1964-1967) and Vice-President of the Federation of Catholic School Boards of Quebec (1966-1967).

From his graduation in 1956 until 1963, he was a research scientist within the Canadian Forestry Service.

He was appointed forest pathology professor by the Forestry and Geodesy Faculty of Laval University in 1963 and held this position until 1970.

In this period, he was also Director of the Forest Management and Sylviculture Department (1966-1969), member of the University's Executive Committee (1966-1968) and Laval University representative on the Joint Committee of the Education and Finance Departments of Quebec (1968-1969).

In 1970, the Canadian Forestry Service appointed him Regional Director for Quebec, a position he held until 1974 while chairing Environment Canada's Regional Directors Council in Quebec.

From 1974 to 1980, Environment Canada required his services first as Regional Director General of the Environmental Management Service in Quebec and then as Director General of all Services in the Quebec Region.

In 1980, he returned to his teaching position at the Forestry and Geodesy Faculty of Laval University.

#### Frédéric De Vos

Mr. De Vos was born in Belgium and studied in Antwerp, Brussels and at the University of Cologne where he graduated with a doctorate in Transport Sciences.

In 1959, after working for 15 years in private enterprise, Mr. De Vos joined the federal Department of Commerce. In 1961, he was an economist with the Economic Research and Methods Directorate in the federal Department of Transport. A few years later, he became senior economist and was involved in many technical and economic feasibility studies. These studies dealt with national and international transport by water, rail and pipeline, including their intermodal aspects. In 1971, Mr. De Vos was appointed economic adviser to the Canadian Marine Transport Administrator, and was assigned with the main responsibility of assisting him in all socio-economic and

policy aspects of marine works, ports and coast guard services.

From 1974 to 1978, Mr. De Vos was chief economist for Economic Research and Statistics in the Ports and Harbours Service of the Canadian Marine Administration. From 1978 until he retired in 1982, Mr. De Vos was Chief of the Planning Division of the National Harbours Board. Among other responsibilities, he designed development plans for port infrastructures in Canada.

Mr. De Vos has published many articles on transport economics and he has participated in many international conferences and seminars. He holds life membership in the Canadian and International Ports and Harbours Associations and in the Permanent Association of Navigation Congresses.

#### Gabriel Filteau

Having obtained a D.Sc. in Biological Oceanography at Laval University and after 10 years of teaching and research (St. Lawrence biological Station) experience, Gabriel Filteau became full professor in the Science Faculty of that University.

He directed the Biology Department from 1961 to 1969, when he became Executive Vice-Dean of the Science Faculty at Laval University.

The same year, with the cooperation of professors from various Quebec universities, he founded the Quebec Inter-university Oceanographic Research Group (QIORG) of which he was elected chairman, and re-elected since.

In 1977, the federal Department of Fisheries and Oceans invited Dr. Filteau to set up a marine science research laboratory for the Quebec Region. Two years later, he was requested to direct all activities of the federal Department of Fisheries and Oceans in Quebec.

Gabriel Filteau has been a member of many scientific organizations including the Fisheries Research Board of Canada, Science Council of Canada and the National Research Council.

He has contributed to the drafting of several scientific publications, particularly in the marine science field. In 1976, he was elected to the Royal Society of Canada.

Dr. Filteau has often been invited to represent Canada as delegate to international scientific meetings such as the XIVth Pacific Congress, held in Siberia, the International Council for the Exploration of the Sea, in Warsaw, and the Scientific Delegation to the People's Republic of China.

He has contributed to the work of many associations including the Association Canadienne Française pour l'Avancement des Sciences (ACFAS), of which he was elected president in 1973.

Since the end of his secondment on August 1, 1981, he has returned to Laval University.

### **Vincent Lemieux**

Born in Levis, Vincent Lemieux obtained a Masters degree in Political Science at Laval University in 1957. From 1957 to 1960, he took a postgraduate program in Political Studies at the Ecole Pratique des Hautes Etudes (Paris) and the College de France. In 1969, he obtained a doctorate in Political Studies from the Universite de Paris.

In 1960, Dr. Lemieux became assistant professor at the Social Science Faculty of Laval University, where he later was associate professor (1966), full professor (1969), Director of the Political Science Department (1967-1970) and Head of the Masters Program in Policy Analysis (1975- 1979).

A member of the Research Commission of the Council of Universities from 1972 to 1977, Dr. Lemieux co-directed, from 1973 to 1976, the Canadian Review of Political Science. Since the beginning of 1981, he has been a member of the Quebec Science and Technology Council.

Vincent Lemieux has written many political science books which make him an authority in that field.

In addition to lecturing at Laval University, he is furthering his studies and research on politics in Canada and in Quebec. In 1978, l' Association Canadienne Française pour l' Avancement des Sciences (ACFAS) awarded him the Parizeau medal for excellence in his contribution to the human sciences.

Dr. Lemieux is a member of the Canadian Political Science Association, the Société Québécoise de Science Politique and the Institute of Public Administration of Canada.

### **Fernand Tremblay**

After graduating in modern teaching and educational methods at the University of Montreal, Fernand Tremblay began, in 1949, very successful studies in architecture at the Montreal School of Fine Arts.

In 1956, having graduated as an architect the previous year, he became a member of the A.A.P.Q. and entered the Mont-

real School of Architecture as Chief of the Technology Department.

In 1958, he associated with Evans St-Gelais to open an architectural firm within which his many successes included the Massey silver medal for St-Raphael church in Jonquiere.

While continuing to practice architecture, Fernand Tremblay directed, from 1967 to 1969, the School of Architecture at Laval University, where he had taught for a few years. He was elected a fellow of the Royal Architectural Institute of Canada in 1969.

He was, from 1972 to 1977, a member of the Advisory Committee of the Quebec Public Works Department on the choice of artists responsible for integrating artwork to public buildings.

Mr. Tremblay has been chairman of the National Battlefields Commission in Quebec City since 1975.

### **Georges-Albert Tremblay**

Mr. Tremblay holds a degree in Civil Engineering from Laval University in Quebec City. He has specialized in hydraulics and hydrology in Quebec and in France. He has also participated in training assignments in technical cooperation and economic development in France and in land use in Quebec.

Mr. Tremblay worked as a project officer in the Quebec Department of Natural Resources from 1962 to 1970. Since 1970, he has held a number of positions in the Office de Planification et de Développement du Québec (OPDQ). He was responsible for the Yamaska project and Director of the Resource Studies Service. From 1975 to February 1979, he was Assistant Regional Director for Development. He is currently Director of the service managing the regional development fund of the OPDQ.

Mr. Tremblay was also associated with the Committee responsible for establishing the Department of Environment.

## APPENDIX B

### AUTHORS OF BRIEFS SUBMITTED TO THE PANEL CONCERNING THE 42.5 HECTARE EXPANSION PROJECT

- Albert G. Baker Limitee \*
- Les Ami(e)s de la terre \*
- Association des biologistes du Quebec \*
- Association des citoyens de Beauport \*
- Association des manufacturiers de bois de sciage du Quebec
- Association internationale des débardeurs \*
- Michel Brind'Amour
- Canada Steamship Lines Inc.
- Centrale des syndicats démocratiques \*
- Chambre de commerce de Beauport \*
- Chambre de commerce et d'industrie du Quebec metropolitain \*
- Davie Shipbuilding Limited
- Ciment St-Laurent
- Club des ornithologues du Quebec \*
- Club des veliplanchistes de Quebec \*
- CN Rail
- Canadian Dairy Commission
- La Communauté urbaine de Quebec \*
- Conseil de développement du Quebec metropolitain \*
- Conseil économique Levis-Lauzon
- Cooperative agricole du Bas St-Laurent
- Corporation des pilotes du Bas St-Laurent \*
- CP Rail
- Dolbec Logistique Internationale Inc.
- Federation quebecoise du cerf-volant \*

- Great Lakes Transcaribbean Line Ltd.
- Groupe Maritime Quebec \*
- Groupe de recherche "Ecoville" \*
- Intertank Quebec
- IVI Inc.
- Kuehne and Nagel International Ltd.
- Environment Canada \*
- Ministère de l'Environnement du Quebec
- Department of Regional Industrial Expansion \*
- Ministère des transports du Quebec
- Les Pilotes du St-Laurent Central Inc.
- Ports Canada \*
- Ramsey Greig et Cie Ltee
- Rassemblement populaire de Quebec \*
- Société immobilière du Canada (Vieux-Port de Quebec) \*
- Société Inter-Port de Quebec \*
- Société Linneenne du Quebec Inc. \*
- The City of Beauport \*
- The City of Quebec \*
- The St. Lawrence Seaway Authority

### INTERVENTIONS DURING THE MEETINGS WITHOUT PREVIOUS SUBMISSION OF BRIEF

- Charles Lecours (Association des payeurs de taxes de Beauport)
- Diane Morneau

---

\* Briefs discussed at the public meetings (March 14, 15, 19, 20, 21 1984)

## APPENDIX C

### MAIN DOCUMENTS USED BY THE PANEL DURING THE PROJECT REVIEW

- Port de Quebec, Pluram Inc.; Schema d'aménagement des battures de Beauport 1977.
- Commission d'évaluation environnementale du projet d'extension du port de Quebec; Verbatim, reunions publiques tenues a Quebec les 28 et 29 novembre, 1978.
- Environmental Assessment Panel, Port of Quebec Expansion Project; Guidelines for the preparation of an Environmental Impact Statement; Port of Quebec Expansion Project, Beauport Tidal Flats, January 1979.
- Port de Quebec; 1. Le Port de Quebec: un atout pour les citoyens de la region de Quebec; 2. Le projet d'extension du Port de Quebec: les citoyens sont impliqués; 3. Statistiques et informations générales sur le Port de Quebec; août 1981.
- Port de Quebec, Pluram Inc.; Etude des repercussions environnementales de l'extension du Port de Quebec, volume 1: inventaires et analyses des sites, novembre 1981.
- Port de Quebec, Pluram Inc.; Etude des repercussions environnementales de l'extension du port de Quebec, volume 2: extension a Beauport, novembre 1981.
- Port de Quebec, Pluram Inc.; Etude des repercussions environnementales de l'extension du port de Quebec, annexes, novembre 1981.
- Port de Quebec, Pluram Inc.; Etude des repercussions environnementales de l'extension du port de Quebec, resume, novembre 1981.
- Grandir avec les citoyens, projet d'extension du Port de Quebec; conçu et realise par la firme AGIR pour le Port de Quebec, decembre 1981.
- Port de Quebec; l'avenir du port, ça nous concerne tous, mars 1982.
- Commission d'évaluation environnementale du projet d'extension du Port de Quebec; Verbatim, reunion d'information tenue a Beauport le 17 fevrier 1982.
- Commission d'évaluation environnementale du projet d'extension du Port de Quebec; Recueil de commentaires sur l'Énoncé d'incidences environnementales, 10 mai 1982.
- Environmental Assessment Panel, Port of Quebec Expansion Project; Additional information required by the Panel, May 10, 1982.
- Port de Quebec, Roche Associates Ltée; Etude des repercussions environnementales de l'extension du Port de Quebec, aspects biophysiques, octobre 1983.
- Port de Quebec; Etude des repercussions environnementales de l'extension du Port de Quebec, aspects socio-economiques, octobre 1983.
- Port de Quebec; Etude des repercussions environnementales de l'extension du Port de Quebec, aspects socio-economiques, annexes, octobre 1983.
- Port of Quebec; Beauport Sector, port development perimeter (Summary of the Environmental Impact Statement).
- Commission d'évaluation environnementale du projet d'extension du Port de Quebec; Memoires présentés a la Commission en vue des reunions publiques du 14, 15, 19, 20, 21 mars 1984; recueils publiés en fevrier et mars 1984.
- Commission d'évaluation environnementale du projet d'extension du Port de Quebec; Verbatim des reunions publiques des 14, 15, 19, 20, 21 mars 1984, tenues a Beauport.

### ACKNOWLEDGEMENTS

The Panel would like to thank all those who have participated in the review, particularly the following individuals:

Yvan Vigneault	Panel Secretariat
Barry Leblanc	Panel Secretariat
Michel Guenet	Panel Secretariat
Suzanne Latour	Panel Secretariat
Helene Lamoureux	Panel Secretariat
Guy Riverin	Panel Secretariat
Carol Martin	Panel Secretariat
Ginette Crites	Word processing
Paulette Smith	Word processing
Jean Pouliot	Editor

## ANNEXE E

### PRINCIPAUX DOCUMENTS UTILISÉS PAR LA COMMISSION AU COURS DE L'EXAMEN DU PROJET

- Port de Québec, Pluram Inc., Schéma d'aménagement des battures de Beauport 1977.
- Commission d'évaluation environnementale du projet d'extension du port de Québec; Verbatim, réunions publiques tenues à Québec les 28 et 29 novembre, 1978.
- Commission d'évaluation environnementale du projet d'extension du port de Québec; Directives environnementales (Guide d'étude d'impact sur l'environnement), Projet d'extension du Port de Québec, Battures de Beauport, janvier 1979.
- Port de Québec; 1. Le Port de Québec: un atout pour les citoyens de la région de Québec; 2. Le projet d'extension du Port de Québec: les citoyens sont impliqués; 3. Statistiques et informations générales sur le Port de Québec; août 1981.
- Port de Québec, Pluram Inc., Étude des répercussions environnementales de l'extension du Port de Québec, volume 1: inventaires et analyses des sites, novembre 1981.
- Port de Québec, Pluram Inc., Étude des répercussions environnementales de l'extension du port de Québec, volume 2: extension à Beauport, novembre 1981.
- Port de Québec, Pluram Inc., Étude des répercussions environnementales de l'extension du port de Québec, annexes, novembre 1981.
- Port de Québec, Pluram Inc.; Étude des répercussions environnementales de l'extension du port de Québec, résumé, novembre 1981.
- Grandir avec les citoyens, projet d'extension du Port de Québec; conçu et réalisé par la firme AGIR pour le Port de Québec, décembre 1981.
- Port de Québec; l'avenir du port, ça nous concerne tous, mars 1982.
- Commission d'évaluation environnementale du projet d'extension du Port de Québec; Verbatim, réunion d'information tenue à Beauport le 17 février 1982.
- Commission d'évaluation environnementale du projet d'extension du Port de Québec; Recueil de commentaires sur l'Énoncé d'incidences environnementales, 10 mai 1982.
- Commission d'évaluation environnementale du projet d'extension du Port de Québec; Information additionnelle requise par la Commission d'évaluation environnementale, 10 mai 1982.
- Port de Québec, Roche Associés Ltée; Étude des répercussions environnementales de l'extension du Port de Québec, aspects biophysiques, octobre 1983.
- Port de Québec; Étude des répercussions environnementales de l'extension du Port de Québec, aspects socio-économiques, octobre 1983.
- Port de Québec; Étude des répercussions environnementales de l'extension du Port de Québec, aspects socio-économiques, annexes, octobre 1983.
- Port de Québec; Secteur Beauport, périmètre de développement portuaire (sommaire de l'étude des répercussions environnementales).
- Commission d'évaluation environnementale du projet d'extension du Port de Québec; Mémoires présentés à la Commission en vue des réunions publiques du 14, 15, 19, 20, 21 mars 1984; recueils publiés en février et mars 1984.
- Commission d'évaluation environnementale du projet d'extension du Port de Québec; Verbatim des réunions publiques des 14, 15, 19, 20, 21 mars 1984, tenues à Beauport.

### REMERCIEMENTS

La Commission tient à remercier tous ceux qui ont participé à cet examen, spécialement les personnes suivantes:

Yvan Vigneault  
Barry Leblanc  
Michel Guenet  
Suzanne Latour  
Hélène Lamoureux  
Guy Riverin  
Carol Martin

Ginette Crites  
Paulette Smith

Jean Pouliot

Secrétariat de la Commission  
Secrétariat de la Commission  
Secrétariat de la Commission  
Secrétariat de la Commission  
Secrétariat de la Commission  
Secrétariat de la Commission  
Secrétariat de la Commission

traitement de textes  
traitement de textes

éditeur