



National Library
of Canada

Bibliothèque nationale
du Canada

Acquisitions and
Bibliographic Services Branch

Direction des acquisitions et
des services bibliographiques

395 Wellington Street
Ottawa, Ontario
K1A 0N4

395, rue Wellington
Ottawa (Ontario)
K1A 0N4

Qualité de la reproduction

Qualité de l'impression

NOTICE

The quality of this microform is heavily dependent upon the quality of the original thesis submitted for microfilming. Every effort has been made to ensure the highest quality of reproduction possible.

If pages are missing, contact the university which granted the degree.

Some pages may have indistinct print especially if the original pages were typed with a poor typewriter ribbon or if the university sent us an inferior photocopy.

Reproduction in full or in part of this microform is governed by the Canadian Copyright Act, R.S.C. 1970, c. C-30, and subsequent amendments.

AVIS

La qualité de cette microforme dépend grandement de la qualité de la thèse soumise au microfilmage. Nous avons tout fait pour assurer une qualité supérieure de reproduction.

S'il manque des pages, veuillez communiquer avec l'université qui a conféré le grade.

La qualité d'impression de certaines pages peut laisser à désirer, surtout si les pages originales ont été dactylographiées à l'aide d'un ruban usé ou si l'université nous a fait parvenir une photocopie de qualité inférieure.

La reproduction, même partielle, de cette microforme est soumise à la Loi canadienne sur le droit d'auteur, SRC 1970, c. C-30, et ses amendements subséquents.

Canada

**THE DECISION-MAKING PROCESS
FOR PUBLIC TRANSPORTATION INFRASTRUCTURE INVESTMENTS:
A CASE STUDY OF THE PORT OF GROS-CACOUNA**

Danielle Vallée

**A Thesis
in
the Department
of
Geography**

**Presented in Partial Fulfilment of the Requirements
for the Degree of Master of Arts in Public Policy and Public Administration at
Concordia University
Montréal, Québec, Canada**

December 1994

©Danielle Vallée, 1994



National Library
of Canada

Acquisitions and
Bibliographic Services Branch

395 Wellington Street
Ottawa Ontario
K1A 0N4

Bibliothèque nationale
du Canada

Direction des acquisitions et
des services bibliographiques

395, rue Wellington
Ottawa (Ontario)
K1A 0N4

Your file - Votre référence

Our file - Notre référence

THE AUTHOR HAS GRANTED AN
IRREVOCABLE NON-EXCLUSIVE
LICENCE ALLOWING THE NATIONAL
LIBRARY OF CANADA TO
REPRODUCE, LOAN, DISTRIBUTE OR
SELL COPIES OF HIS/HER THESIS BY
ANY MEANS AND IN ANY FORM OR
FORMAT, MAKING THIS THESIS
AVAILABLE TO INTERESTED
PERSONS.

L'AUTEUR A ACCORDE UNE LICENCE
IRREVOCABLE ET NON EXCLUSIVE
PERMETTANT A LA BIBLIOTHEQUE
NATIONALE DU CANADA DE
REPRODUIRE, PRETER, DISTRIBUER
OU VENDRE DES COPIES DE SA
THESE DE QUELQUE MANIERE ET
SOUS QUELQUE FORME QUE CE SOIT
POUR METTRE DES EXEMPLAIRES DE
CETTE THESE A LA DISPOSITION DES
PERSONNE INTERESSEES.

THE AUTHOR RETAINS OWNERSHIP
OF THE COPYRIGHT IN HIS/HER
THESIS. NEITHER THE THESIS NOR
SUBSTANTIAL EXTRACTS FROM IT
MAY BE PRINTED OR OTHERWISE
REPRODUCED WITHOUT HIS/HER
PERMISSION.

L'AUTEUR CONSERVE LA PROPRIETE
DU DROIT D'AUTEUR QUI PROTEGE
SA THESE. NI LA THESE NI DES
EXTRAITS SUBSTANTIELS DE CELLE-
CI NE DOIVENT ETRE IMPRIMES OU
AUTREMENT REPRODUITS SANS SON
AUTORISATION.

ISBN 0-612-01315-4

Canada

ABSTRACT

The Decision-making Process for Public Transportation Infrastructure Investments: a Case Study of the Port of Gros-Cacouna

Danielle Vallée

Transportation infrastructure has always played a part in Canadian politics, through its role of nation-building, and as a means of resolving some of the country's regional economic disparities. Commercial maritime ports can play an important role in attracting industry to a resource region, by making it simpler and less expensive for export-based businesses to operate out of areas from which their often low-value-added products originate.

The administration of a public port system, therefore, is by no means simply a matter of providing infrastructure to enable maritime transportation to flow smoothly. It also involves the issue of equity versus efficiency, especially with regards to the allocation of scarce public resources. Thus, it is about public perceptions and their ability to influence government decision-makers, whose actions supposedly reflect rational, informed planning guidelines.

In the last two decades, the Canadian government has had to tighten its belt and become more accountable for its expenditures. This has led to a rationalization of the

public port system. Since 1982, there has been an attempt to make more efficient use of existing installations, by introducing long-range regional traffic scenarios and individual port asset management plans.

This thesis explores the decision-making process for capital infrastructure investments in the context of public maritime transportation objectives in Canada. It is argued that capital investments at the port of Gros-Cacouna, in the Bas-Saint-Laurent region of Québec, continue to be of a very incremental, and highly political, nature. Furthermore, there appears to be little attempt to examine the assumptions underlying capital infrastructure decisions, which may or may not realistically portray regional needs, or those of the maritime transportation system.

The timeliness of this case study is reflected in the fact that at present, the basis of the allocation of capital funds for public ports remains largely unexplored. In addition, a new approach to infrastructure planning for the next decade is presently being implemented by Transport Canada. In view of the questionable results of the last attempt, such a study is of potential significance to policy-makers and taxpayers alike.

ACKNOWLEDGEMENTS

I would like to thank my thesis supervisor, Dr. Brian Slack, for his support and friendship; my advising committee members, Drs. Claude Comtois, Jim Young, and Alan Nash; and Pierre Deslauriers, for his willingness to listen.

I am very grateful for the important contributions of certain people at the Canadian Coast Guard (Laurentian region), without whom this thesis could not have been written, especially Denis Bastien, Denis Galarneau, and others who helped out in some way. I also wish to thank Paul-Emile Drapeau (Harbours and Ports Directorate); along with Jacques St-Laurent, Réal Lebel and Gilles Desrosiers, harbour masters at the ports of Rimouski, Gros-Cacouna and Matane, for graciously offering their information and time.

Special acknowledgement goes to Tina Skalkogiannis, Annie Pollock-McKenna, David Frost, Andy Scheid, and Jessica Burpee, for patiently putting up with my ignorance of computers, and for their general helpfulness.

And for their tremendous understanding, support and inspiration: Barclay, Mom, Dad, Emily, and "toute la famille"; Sue, Fran, and my friends in the Geography department who helped me get through these past 4 years.

TABLE OF CONTENTS

List of Figures	ix
List of Tables	x
PREFACE	xi
 1.0 INTRODUCTION	 1
1.1 Public Ports in Canada	1
1.2 Significance of Capital Investments in the Public Port System	2
1.3 National Transportation Objectives and the Emphasis on Efficiency ...	3
1.4 Public Port Investment Planning in the 1980s	4
1.5 Purpose of this Thesis	4
1.6 Methodology	5
1.7 Organization of this Thesis	7
 2.0 A LITERATURE REVIEW - DECISION-MAKING AND TRANSPORTATION INFRASTRUCTURE INVESTMENTS: THEORY AND PRACTICE ...	 8
2.1 Introduction	8
2.2 Theories of Public Decision-making	9
2.2.1 Types of Decisions	9
2.2.2 Rational-Comprehensive Theory	11
2.2.3 Bureaucratic-Structuralist Theories	13
2.2.4 The Decision Environment	17
2.2.5 Incremental Theories	23
2.2.6 Ranking Multiple Goals: Searching for a Synthesis	26
2.3 Decision-making and Public Transportation Infrastructure Investments .	29
2.3.1 The Lack of Studies on Public Port Investment Decision- making	29
2.3.2 General Literature on the Financing of Public Transportation Infrastructure	30
2.3.3 The Case of Mirabel	34
2.4 Maritime Transportation Literature	37
2.5 Summary	42

BIBLIOGRAPHY - CHAPTER 2	44
3.0 THE FORMAL DECISION STRUCTURE AND PROCESS AT TRANSPORT CANADA	49
3.1 Introduction	49
3.2 Structure of the Organization	50
3.3 Structure of the Canadian Coast Guard, Harbours and Ports Division ..	54
3.4 Approval of Funds for Port Investments	59
3.5 Planning the Public Port System	62
3.6 Summary	65
4.0 INVESTMENT DECISIONS FOR THE PORT OF GROS-CACOUNA, 1982 TO 1991	67
4.1 Introduction	67
4.2 Strategic Planning in the Laurentian Maritime Region, 1982-86	67
4.2.1 Planning Considerations for the Bas-St-Laurent/Gaspé	67
4.2.2 Long-term Traffic Scenarios	71
4.3 Gros-Cacouna's First Asset Management Plan (AMP), 1982-86	73
4.3.1 Short- and Medium-term Development Plans for the Port ...	73
4.4 Investments at Gros-Cacouna, 1982-86	75
4.4.1 The Plan de l'Est	76
4.5 Traffic Situation at Gros-Cacouna, 1980-86	76
4.6 Evolution of Maritime Traffic in the Laurentian Region, 1982-86	80
4.6.1 Evolution of Forest Products Traffic in the Laurentian Region	81
4.7 Strategic Planning in the Laurentian Maritime Region, 1987-91	83
4.7.1 Planning Considerations for the Bas-St-Laurent	83
4.7.2 Long-term Traffic Scenarios	84
4.8 Gros-Cacouna's Second Asset Management Plan, 1987-91	85
4.8.1 Short- and Medium-term Development Plans for the Port ...	85
4.9 Investments at Gros-Cacouna, 1987-91	88
4.9.1 Environmental Considerations Related to Miron's Activities ..	89
4.10 Traffic Situation at Gros-Cacouna, 1987-92	90
4.11 Evolution of Maritime Traffic in the Laurentian Region, 1987-92 ...	92
4.12 Summary	93
5.0 AN ANALYSIS OF INVESTMENT DECISIONS FOR THE PORT OF GROS-CACOUNA	95
5.1 Introduction	95

5.2	1982-86 Capital Investment Plans	95
5.3	1987-91 Capital Investment Plans	100
5.4	User Consultations	103
5.5	The Stakeholders	105
5.6	Summary	110
6.0	CONCLUSION	112
6.1	Decision-making Constraints and the Public Bureaucracy	112
6.2	The Regional Basis for Public Port Infrastructure Investments	114
6.3	Future Prospects for Public Port Planning	116
6.4	Recommendations for Future Port Planning	117
	REFERENCES	120
	APPENDICES	126
	GLOSSARY	130

List of Figures

Figure 1.	Road and Rail Links to the Bas-St-Laurent	xvi
Figure 2.	Structure of Transport Canada since 1986 52	52
Figure 3.	Structure of Transport Canada, pre-1986	53
Figure 4.	Coast Guard Sub-activities / Harbours and Ports	56
Figure 5.	Harbours and Ports Directorate (Port Development)	57
Figure 6.	Laurentian Region, Harbours and Ports	58
Figure 7.	Public Harbours and Ports, Laurentian Region, 1982	70-a
Figure 8.	Public Harbours and Ports, Laurentian Region, 1987	83-a

List of Tables

Table 1.	Costs vs Revenues of Canadian Public Ports, 1983-92	2
Table 2.	Levels of Capital Funding and Approval Authorities	62
Table 3.	Proposed vs. Actual Investments, Gros-Cacouna, 1982-86	75
Table 4.	Traffic by Cargo Type and Number of Ships, Gros-Cacouna, 1980-86	78
Table 5.	Traffic by Cargo Type and Number of Ships, Matane, 1982-86	80
Table 6.	Traffic by Cargo Type and Number of Ships, Gros-Cacouna, 1987-92	91

PREFACE

The Bas-St-Laurent is located on the south shore of the St. Lawrence River. Its territory of 22 377 square kilometres extends from the Chaudières-Appalaches Mountains in the west to the Gaspé region in the east. It borders New Brunswick and Maine to the south (see figure 1). The region has a population of 211 000, one-quarter of which lives in Rimouski (Québec 1991). This is considered to be one of Québec's "less favoured" regions. The economy is characterized by resource-extraction (forestry, agriculture and mining), and transformation (food and drink) industries. The city of Rimouski has developed a large tertiary sector as a result of the recent decentralization of provincial government activities. The largely export-based economy is subject to severe fluctuations in national and international demand for its raw materials. The Bas-St-Laurent is plagued by problems of low, often seasonal, employment, low per capita income, and much out-migration of the population (Québec 1991).

Overland transportation in the region is rudimentary: in terms of road transport east of Rivière-du-Loup, only one major provincial highway, Autoroute 20, goes as far as Cacouna Village; Route 132 is a two-lane highway which circles the Gaspé peninsula; and Route 195 links Matane to Amqui, in the Vallée-de-la-Matapédia (figure 1). The Bas-St-Laurent lies on the Montréal-Halifax rail axis. CN Rail carries cargo, including paper, aluminum, petroleum and chemical products. Passenger traffic is served by Via

Rail. There are local airports in Mont-Joli, Rimouski, Matane, Rivière-du-Loup and Causapscal (Morissette 1991)

For the resource-based industries of the Bas-St-Laurent, the St. Lawrence River is a very practical means of exporting low-value-added products such as wood and other bulk cargoes, since maritime transport is often the cheapest for moving large quantities over long distances (Gubbins 1989). Trade at the commercial public ports in this region¹ consists mostly of coastwise, rather than international, traffic. These ports have traditionally fulfilled two functions: supporting the local industrial base, and supplying provisions for local or regional consumption. Maritime trade in the region comprises four major commodities: gas and fuel, road salt, and forest products.

There are three major ports in the Bas-St-Laurent: Gros-Cacouna, Rimouski and Matane. For the past few decades, Rimouski and Matane have supported the regional and international import and export activities of local sawmills, as well as the region's mines and petroleum distributors. In addition, Rimouski is an important supplier of goods to the North Shore. Since the start of operations at Gros-Cacouna in 1980, however, there has been a decline in traffic at the other two ports.

The port of Gros-Cacouna has been on the regional agenda since the late 1800s². In 1897, Sir Wilfrid Laurier agreed to promote the proposal for a new jetty,

¹as at most of Québec's public ports (Brian Slack et al, "Le rôle et la fonction des ports de petite et moyenne taille dans le système Saint-Laurent". Cahiers de géographie du Québec, 37, #100, April 1993, 17-33)

²the following information is taken from "Port de mer: Gros-Cacouna" (1980-81?). Documentation régionale de l'est du Québec. n.p. UQAR Library.

with the arrival of the Grand Trunk Railway to the region in 1860 and the Temiscouata regional branch line to Edmunston in 1889. The geographic location was considered ideal, given the harbour's depth; it was also a transition point between central Québec and Gaspé, and was on a convenient axis for trade with New Brunswick and Maine. Local, provincial and federal politicians, as well as businessmen from the region and from Maine, lobbied for the port throughout the first half of the Twentieth century, insisting that exporting industries needed it. Very little was done, however, until 1962, when the newly-elected prime minister, L.B. Pearson, wrote to the mayor of Rivière-du- Loup to say that the port would be built as a regional development initiative.

As with all major capital infrastructure works, the construction was to be done in phases. Work at Ile-du-Gros-Cacouna began in 1964, after ice flow studies done by the federal Department of Public Works (DPW) indicated there would be no problem. During construction, regional businessmen and politicians sought potential port clients from far and wide. In 1966, a grain enterprise was expected to set up in the village of Cacouna, but it never materialized. By 1970, work on the project (now estimated at \$9 million) was suspended due to a lack of potential users.

In the early 1970s, Havre Champlain, a division of the Ontario-based freight-forwarding company Misener Corporation Ltd, began to discuss plans for the site with the federal government. The U.S. Department of Commerce (Maritime Administration) wished to set up a North Atlantic Deepwater Oil Terminal (NADOT) to accommodate "supertankers"³ which would soon set the pace for international oil

³ships of 500 000 dwt.

shipping. The port of Québec had a 100 000 dwt maximum capacity, and Sept-Îles was already oversaturated. Havre Champlain argued that the new oil terminal could be established at Gros-Cacouna.

With this new impetus, lobbying began again in earnest. This time it involved municipal councils, industrial commissions and chambers of commerce of Rivière-du-Loup and Cacouna, as well as those from New Brunswick and Maine. Prospective users included international oil refineries, Maine and New Brunswick paper companies, Maine feed grains and potatoes, a passenger ferry to Tadoussac, and aluminum smelters which were to be built along the St. Lawrence. Construction continued, with Havre Champlain promising to recruit customers.

The port officially opened on January 31, 1980, at a total cost of \$21.3 million (\$78 million in 1991-equivalent) (Canada DPW 1992). Of course, the international oil crisis of the mid-'70s spelled disaster for the NADOT, and many of the aluminum smelters never materialized. Transport Canada was strongly criticized for having built a port which was not needed. Nevertheless, it was built, for reasons which are apparent: public pressure was put on federal politicians at opportune moments, such as elections. But everyone, including Transport Canada, assumed that the new port would generate growth in the regional economy, even though the potential impacts of this new facility were not known. There seemed to be very little regard for the results of a 1971 report by the firm SORES,⁴ which stated that while Gros-Cacouna benefitted from a favourable geographic situation, it had an under-developed hinterland. This meant that

⁴Société de recherches économiques et scientifiques Inc. (Montréal)

unless the port could bring new industries to the region (which as yet did not seem likely), it would take traffic away from surrounding ports.

Since Gros-Cacouna was now operational, many argued that some attempt at recuperating the taxpayers' investment should be made. Ironically, the new port flourished during the 1980s, becoming the main forest products exporter in the region.

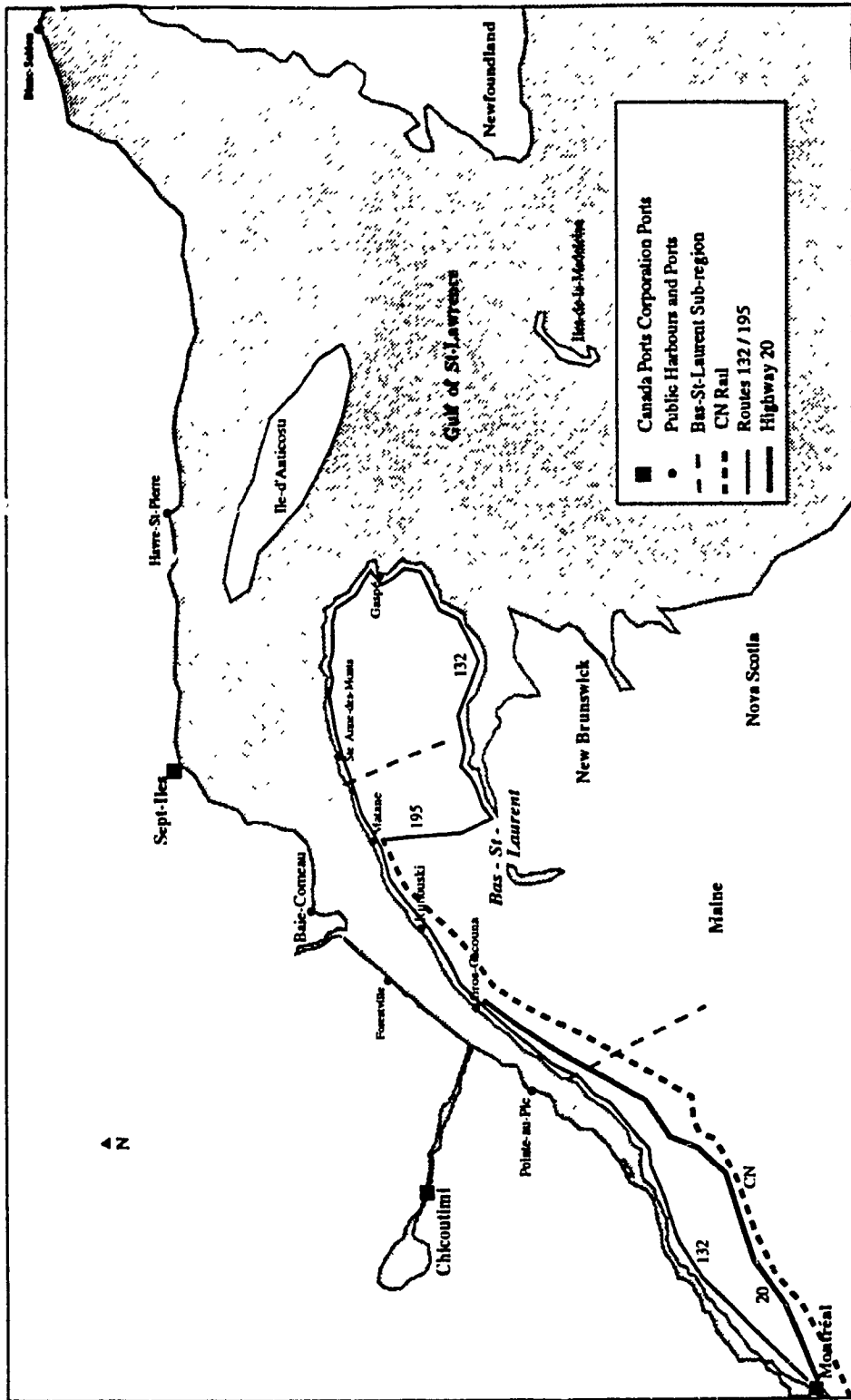


Figure 1. Road and Rail Links to the Bas-St-Laurent

CHAPTER 1

INTRODUCTION

1.1 Public Ports in Canada

Public harbours, wharves, piers and breakwaters are the property of the government of Canada. They come under the authority of the Department of Transport (DOT), and are administered by the Canadian Coast Guard. There are 526 public maritime sites across Canada, with port infrastructure existing at 341⁵ of them. Many of these sites are multi-functional, providing areas for fishing, pleasure craft, ferries, and so on. Transport Canada's mandate with regards to ports, however, is primarily to assist commercial transportation. Commercial public ports handle 20% (86 million tonnes) of all Canadian waterborne traffic.⁶ Ports can be instrumental in attracting industry to regions, by making it less expensive for export-based businesses to operate out of areas from which they obtain their often low-value-added products (Bird 1980, Hoyle 1973, Blonk 1979). Maritime facilities can also generate local, regional or national economic spin-offs by creating jobs, especially in the service sector (ship maintenance, insurance,

⁵Canada, Department of Transport, Harbours and Ports, Annual Report on Financial Operations (Minister of Supply and Services, Canada, 1993)

⁶about 35 public ports handle 80% of this traffic. The other 80% of Canada's maritime trade is handled at Canada Ports Corporation, Harbour Commission, private or municipal ports (F. Shane Foreman, A Matter of Semantics: The Canadian Port System Defined. Unpublished paper for the Canada Ports Corporation, 1988).

provisions); and through the re-spending of port-related income (Slack et al 1993).

1.2 Significance of Capital Investments in the Public Port System

Canada's public port system is not financially self-sustaining. Its infrastructure is aging and needs much work. The replacement of Canada's national air and marine (not including Crown Corporation-owned) infrastructure is estimated at \$23 billion (Canada, DOT 1993). Ports are particularly capital intensive, as Robinson (1985) has suggested (see glossary). Table 1 illustrates that Canada's public ports generate an average loss of close to \$50 million per year.

Table 1
Costs Versus Revenues of Canadian Public Ports, 1983 to 1993

YEAR	EXPENDITURES	NET REVENUES	DIFFERENCE
1983-84	43.8 M	(7.6 M)*	36.2 M
1984-85	55.5 M	6.9 M	48.6 M
1985-86	68.5 M	6.8 M	61.7 M
1986-87	60.0 M	(9.8 M)*	50.2 M
1987-88	46.3 M	9.9 M	36.4 M
1988-89	72.7 M	10.5 M	62.2 M
1989-90	67.3 M	10.9 M	56.4 M
1990-91	71.0 M	12.0 M	59.0 M
1991-92	50.9 M	11.8 M	39.1 M
1992-93	48.3 M	11.0 M	37.3 M

Source: Canada, DOT, H&P, 1984-1993. *only Gross Rev. data are available

1.3 National Transportation Objectives and the Emphasis on Efficiency

The ability of a public transportation system to respond to traffic fluctuations and competition in trade is critical to its smooth functioning. In the last decade and a half, maritime trade in Canada has experienced very little growth, due to international and intermodal competition,⁷ and the global recession. Transport Canada has been criticized for subsidizing ports which incur large annual losses. In response to such criticism and to difficult economic times, the DOT has had to become more accountable in its management of public resources. Greater emphasis is now placed on cost-efficiency.

Thus, while Canada's formal transportation objectives⁸ have remained essentially unchanged in the last half-century, various government documents since the mid-'70s,⁹ have questioned the utility of subsidizing transportation infrastructure. They advocate more provincial and private sector involvement, and a benefit-cost approach to investments, in view of increasingly restricted budgets. To reflect this new emphasis on efficiency, Transport Canada instituted a comprehensive strategic planning process for

⁷U.S. demand for Canadian lumber has declined due to increased domestic supply along with less housing construction, and demand for agricultural exports has also weakened. In addition, trucking competes with maritime shipping in Canada

⁸which are set out in the National Transportation Acts of 1967 and 1987, and include:
regional and local economic objectives;
efficiency;
the provision of equitable transportation services

⁹such as Canada, DOT, Strategic Planning Directorate, Transportation Policy: A Framework (1975); Canada, DOT, SPD, Planning Outlook to the Mid-1980's (1981); and Canada, DOT, SPD, Freedom to Move: A Framework for Transportation Reform (1985)

public port investments. Regional Integrated Maritime Transportation Plans, along with individual Port Asset Management Plans, were developed in the early 1980s.

1.4 Public Port Investment Planning in the 1980s

The main objective of the new planning process was to determine which public ports should be abandoned, maintained, or turned over to other authorities (BBL Inc. 1982a, 1). It also required that port investment plans satisfy the following criteria:

- 1) Development must be based on the needs of existing traffic;
- 2) Cost recovery: if development is undertaken for the benefit of a single user, costs should be recovered (preferably over a 10-year period from the start of construction);
- 3) Rationalization: construction of new infrastructure should be avoided if the targeted traffic can be handled at other ports;
- 4) Intermodality: whenever possible, other modes should be used in coordination with the maritime transportation system (CCG, H&P, Laurentian region, phone interview, 1992).

1.5 Purpose of this Thesis

The purpose of this thesis is to examine the decision-making process for capital investments during two planning periods (1982-86 and 1987-91) at the port of Gros-Cacouna, in the Bas-St-Laurent region of Québec. This study will attempt to show that despite efforts to avoid mistakes of the past, the reality of public port planning differs

greatly from the intended process. Specifically, it will illustrate that:

- 1) infrastructure investments at Gros-Cacouna in the 1982-86 period led to an unwanted increase in inter-port competition;
- 2) the 1982-86 investments, as well as those which were planned but not yet approved for the 1987-91 period, reflect pre-determined political choices, rather than a comprehensive strategic planning process.

It is argued that decisions regarding public port investments are politically motivated, as a result of local lobbying. This imposes time constraints on the planning procedures put in place by Transport Canada; certain steps of the process are therefore circumvented, resulting in expenditures based on scant knowledge about the impacts of port development on the regional economy and port system. In spite of the recent focus on proactive strategies to make the public port system more efficient, planning remains incremental and reactive.

The purpose of this thesis is not to question the regional economic impacts of public ports. However, it does question the legitimacy of a public port authority which makes no real attempt to study these impacts, yet uses economic impact theory to justify expenditures which might not be justifiable on any other basis. As this thesis will show, Gros-Cacouna is not an isolated example of poorly-planned investments.

1.6 Methodology

The approach used in this paper is a qualitative one. Identifying the basis of

decisions regarding investments of such a politically sensitive nature is complex. For this reason, the decisions made by Transport Canada are examined in light of the department's stated priorities regarding investment. Obtaining the necessary internal documents (often, incomplete engineering reports), as well as crucial, unofficial details, depended on the sometimes reluctant cooperation of certain individuals.

Written information:

- Integrated Maritime Transportation Plans of 1982 and 1987, and their accompanying user consultations;
- Canadian Coast Guard submissions and approval documents relating to investment decisions;
- 1983-88 ERDA (Plan de l'est), and the Ecole nationale d'administration publique's evaluation of the Plan's projects;
- Gros-Cacouna's Public Harbour Advisory Council report;
- Rimouski's port promotion commission's report;
- press release of the Member of Parliament for Rivière-du-Loup;
- newspaper articles;
- Harbours and Ports traffic statistics

Interviews: in-person, open-ended interviews were conducted with:

- harbour masters from Gros-Cacouna, Matane and Rimouski (on 3 separate visits to the region);
- Laurentian Region Coast Guard officials in Québec City (on 3 occasions);
- an official from the Harbours and Ports Directorate in Ottawa;
- the secretary of the MP for Rivière-du-Loup.

In addition, I conducted telephone interviews with a member of Gros-Cacouna's Public Harbour Advisory Council, and with an official from the Bureau fédéral de développement régional (Québec). I also maintained regular phone contact with the above-mentioned Coast Guard officials.

1.7 Organization of this Thesis

Doern and Phidd (1983) have said that in order to examine the public decision-making process, one must identify the ideas, structures and processes associated with the decision environment. This chapter has briefly outlined the ideas (objectives and current focus) at the root of Canada's transportation policy. Chapter 2 is a literature review on decision-making theory and the practice of decision-making in the field of transportation. Chapter 3 describes the organizational structure at the DOT / Harbours and Ports Division, and the formal planning process for public port investments. Chapter 4 is a narrative of the planning decisions and investments at Gros-Cacouna for the periods of 1982-86 and 1987-91. Chapter 5 is an analysis of the decision-making process for planned and actual investments at the port. Chapter 6 (conclusion) discusses the prospects for future port planning, and offers a few suggestions for improving it.

CHAPTER 2 - A LITERATURE REVIEW -
DECISION-MAKING AND TRANSPORTATION INFRASTRUCTURE
INVESTMENTS: THEORY AND PRACTICE

2.1 Introduction

This chapter provides an overview of the literature on decision-making. The first section deals with the theoretical work on the subject, from the fields of public administration and sociology. It is virtually impossible to explore fully the extensive writing on the subject, partly because of the various typologies of models used. For instance, Allison (1971) discusses three models of decision-making: *rational actor*, *bureaucratic processes*, and *governmental politics*; Lynch (1975) identifies the *incremental change*, *budgetary process*, *satisficing*, *ideal-rational*, and *optimum models*; and so on. There is thus an almost infinite number of theories and variations, some of which have proven to be more widely accepted than others over the years.

For the purposes of this chapter, however, which is primarily to review the work done on capital investment decisions with regard to transportation infrastructure, I have identified the major theories and related themes which prevail in the literature. The first section is not a comprehensive examination, but it is hoped that the ideas contained herein will provide an adequate background for Section Two.

The second section discusses what has been written regarding public expenditures

for transportation infrastructure in general, and maritime installations in particular. Unfortunately, the literature pertaining to public port investment decision-making is scarce. Therefore, I have used examples from other public transportation modes to illustrate the government decision-making process (such as the case of Mirabel Airport).

2.2 Theories of Public Decision-making

"Organization theory is all about the way individual decisions come together"

(Lindblom 1959, 79).

2.2.1 Types of Decisions

When discussing decision-making, it is helpful to use Simon's (1976) dichotomy of decision types. He labels them: *procedural* (i.e. triggered by stimuli which are recurring and familiar); and *decisional*, or *substantive* (i.e. a totally new, or rare, situation, with no routine response). For the first type, standard operating procedures and programs have been developed to meet similar situations; therefore, there is no need for a lot of deliberation and new data collection. The second type of decision, however, may involve controversial, value-laden issues that have a variety of political implications. These two types of decisions may also be referred to as *programmed* or *unprogrammed*

(Kernahan 1985).

By virtue of their office, public administrators are frequently faced with having to make unprogrammed decisions. As Lindblom has suggested, there is a difference between individual and organizational decision-making. Administrative activity is group activity, and thus the decision-making process relieves the individual of some of his or her decision autonomy. It does this by specifying individual functions, allocating authority, and setting limits to individual choice in order to co-ordinate activity (Simon 1976).

Lynch (1975) has said that models can be useful tools for either improving decision-making (i.e. by providing normative methodologies which explain the proper way to proceed); or for examining how decisions are actually made (descriptive models). He suggests that models are abstract representations of reality, or what we would like reality to be. Doern and Phidd (1983) say that at the least, models help to classify a phenomenon into "manageable chunks of reality" (p. 138); more specifically, they can help us to generate theories to both explain and predict behaviour. However, the authors suggest that achieving the latter is unlikely, given that the limitations which are inherent to social science must also apply to public policy models.

Several decision-making theories and their variations are outlined in this section, beginning with the *ideal-rational* administrative model. This model, based on Weber's (1947) theory of bureaucracy, was developed by various authors during the first half of the century. For reasons which shall become apparent, it is considered to be a normative or prescriptive model, rather than a realistic description of decision-making. The

incremental models (examined later in this chapter) are generally seen as being at the opposite end of the decision-making spectrum, from the rational model; they are also considered to be the truest descriptions of how decisions are normally made (Doern and Phidd 1983).

2.2.2 Rational-Comprehensive Theory

This theory of bureaucracy provides a model of decision-making which entails comprehensive knowledge, and a thorough, time-consuming procedure. It suggests that an organization is a paragon of efficiency, and that the bureaucracy operates with speed and precision, based on complete information.

Faced with a decision to make, an administrator would, according to this model:

- 1) identify the problem;
- 2) clarify the goals, and rank them in order of importance;
- 3) list all possible means for achieving these goals;
- 4) assess all costs and benefits that would result from each alternative;
- 5) select the goals and associated alternatives that would achieve the greatest benefits or the least costs (Lindblom 1968).

Criticism of Weberian theory, both in the administration and sociology literature, revolves around its basic assumptions of human behaviour. Its main weakness, in fact, is its comprehensiveness, and its assumption that humans can be perfect. Zey (1992), for instance, in an examination of critiques of the rational model, identifies ten separate assumptions underlying it. They are all based on the concept of *rational man*, and the

goal of efficiency¹⁰. Some of these assumptions are: man (or woman) as self-interested, having full knowledge about the decision problem, and being utility-maximizing, with the ability to rank alternatives to get the best outcome. Zey argues that this model implies that goals and the means used to achieve them form part of a process which is value-neutral.

While its usefulness as a description of actual decision-making is very limited, Doern and Phidd (1983) state that this can be one of the rational model's strengths. As a normative theory, it serves as a standard against which many decisions are tested. It helps identify causality, as well as separate *fact* from *value*.¹¹ In general, the theories which follow have emerged as a result of the inadequacies of the Weberian model, with certain authors trying to illuminate and expand on its elements. What they all have in common, whether they propose a new model or a variation of one, is their preoccupation with the means-end chain which characterizes decision-making.

Dahl's well-known work from 1947 is a critique of what he says is an attempt to create a science of public administration by formulating universal laws, as though it were analogous to the natural sciences. Indeed, rational theory incorporates elements of Taylor's (1947) principles of scientific management. Dahl criticizes one assumption of rational theory, which is that efficiency is the ultimate goal of public administration. He argues that in a democracy, efficiency must be tempered with other values:

¹⁰"efficiency" refers to "keeping costs down in achieving benefits, as measured by benefits minus costs, or benefits divided by costs" (Lynn and Wildavsky 1990, 429).

¹¹"fact" = behaviour, while "value" = the ethical premise at the basis of this behaviour (see Simon 1976).

The necessarily wider preoccupation of a study of *public* administration, as contrasted with *private* administration, inevitably enmeshes the problems of public administration in the toils of ethical considerations (Hodgetts and Corbett, 1960, 27).

Another major assumption is that while individuals sometimes do not act rationally, an organization can provide control (through domination) over individual preferences. Dahl argues that this is a highly unrealistic portrayal of the way in which organizations are run, given that such domination would only result in frustration and bitterness among subordinates.

2.2.3 Bureaucratic - Structuralist Theories

March and Simon (1958) have dedicated much of their time to the study of organizations. Together and separately, they have developed a model which tries to make up for the rational model's lack of recognition of the human factor in organizations. The authors argue that the second step of the rational model, goal selection and prioritization, is not treated with enough importance. They suggest that the only instance where goals can be easily ranked is when the top priority is efficiency. If this were the case, the alternative course of action chosen would be the one which takes the shortest path and the cheapest means towards an objective. When efficiency is the main priority, the steps following goal identification are mechanical.

Their critique centres on the fact that in reality, efficiency is not often the highest priority in an organization. *Rational man* does not exist, and thus individual biases and

goals affect the decision-making process. Perrow (1986) suggests that the individual goals being pursued within an organization can differ greatly from the aims of the organization. Such goals can include security, power, survival, discretion, autonomy, and so on.

In his book entitled Administrative Behavior, Simon (1976) discusses the idea that decisions conceal both *fact* and *value*. There is an ethical premise (value) at the basis of every imperative (fact, or behaviour). In order to evaluate decisions, those values must be made clear. Simon says that judgment is used by administrators, however, because value and fact are often difficult to separate, due to the very general aims and intermediate objectives of an organization.

Partly because of this potential for conflict, Simon and March argue that an organization must be structured in such a way as to minimize these constraints, in order to operate efficiently. Simon (1976) suggests that a mere description of functions within organizations presents only a small part of the picture. In reality, decision-making functions are the most important. Because an organization can only function properly if the actions of individuals complement the common goals, superiors in an organization give few orders. Rather, they focus on setting priorities, and on structuring "...the subordinate's environment and perceptions in such a way that he or she sees the proper things and in the proper light" (Perrow 1986, 125).

While conflicting goals within an organization is the essence of this theory, Simon argues that there also exist real limits to human rationality which make the comprehensiveness suggested by the rational model highly implausible. These limits take

three forms:

- 1) limits on an individual's ability to perform (i.e. physiology, such as mental processes and capacity);
- 2) limits on one's ability to make correct decisions (values, conception of purpose, loyalty, initiative);
- 3) limits on the extent of an individual's knowledge, related to the job requirements (Simon 1976, 40).

There are also organizational barriers to rational decision-making, such as size and geographic decentralization. Because of these constraints on rationality, vertical integration in an organization is recommended, in order to achieve increased coordination. Simon's *satisficer* theory (as it is called) is thus a structural one, because it emphasizes the impact of an organization's structure on human activity.

Tied to a structural analysis of decision-making is the topic of organizational communication. Simon (1976) devotes a chapter to it, saying that the proper functioning of decision-makers depends on adequate channels of communication. Within any administration, however, there exist formal and informal channels of communication; it is through both of these that information is passed on (or withheld). An example of this formal and informal power is job training, which may or may not be successful, depending on the trainee's popularity within a department.

Nigro (1965) distinguishes between three types of communication flows: downward, upward, and lateral. Based on a number of empirical studies, he identifies barriers to all three flows. He says that whereas traditional views of decision-making focus on downward communication (i.e. from superior to subordinate), in actuality, it

can rarely take place without upward communication occurring first. Reasons for this include unclear instructions which have been passed down through numerous intermediaries, and worker resistance to unrealistic expectations. The upward flow of information is even less smooth, and may be impeded by physical distance, distortion of information at various levels, supervisor attitude, and so on. Lateral communication is the most difficult.

Richardson and Baldwin (1976) have elaborated on the notion of impediments to rationality, saying that differences between individuals (not only in terms of goals, but also the operating styles of administrators) can render decision-making difficult. They suggest that time constraints, the merit system which exists in the civil service, high costs of collecting and processing information, as well as external pressures all have some effect on how decisions are made.

Therefore, the wide variety of human and organizational constraints is bound to result in decisions which involve some uncertainty (what Simon calls "uncertainty absorption" - 1976, 45). In addition, establishing a purpose when multiple goals are involved introduces a relative element, which implies weighting each goal and looking for compromise. Thus, the satisficer model of decision-making can be seen as:

- a limited search process that is only infrequently innovative;
- specialization of functional roles so that attention is focused on a limited number of goals.

This decision process is not a maximizing one, but rather one which looks for the least disruptive of solutions. As Perrow (1986) says, innovation occurs only when

stabilization in the organization is required, to allow routine to be re-established. The real role of an organization is to acknowledge individual goals and direct them. Changes are only made when objectives are clearly not met.

Simon's model is related to Allison's (1971) *bureaucratic processes paradigm*, in that it examines conflicts within organizations. In his theory, Allison says that a key priority of organizations is risk avoidance, rather than efficiency as suggested by the rational model. Decisions are made in order to resolve conflicts, which are inherent to any group. Thus, change is often incremental. Unlike Simon and March, Allison says that inter-organizational conflicts play a strong role in influencing decisions.

This model suggests that organizations tend to function on the basis of standard operating procedures, or habit. Accommodation within and amongst agencies is the norm. As with each of his models, Allison summarizes his argument by stating that a limited number of questions can be answered by the bureaucratic processes paradigm, namely: which organizations have traditionally played a part in certain policy fields? And what is the relative influence of the organizations involved?

2.2.4 The Decision Environment

Thus far, we have seen that there is a degree of uncertainty and compromise in decision-making, due to the ambiguity of the means-end relationship; and that the rational view of the traditional chain of command is not an adequate description of

reality. We now turn to theories that incorporate a concept which, many argue, is central to a discussion of the decision environment: *stakeholders*. Smith (1993, 34) defines stakeholders as "the full range of participants in a decision environment".

As we saw earlier in Dahl's work (1947), in a pluralistic society, a public organization must also deal with external constraints on decision-making. According to Atkinson and Chandler (1983, 272), these include "special interests, ideological and cultural perspectives, political timing, and media reaction...". The following theories deal with the issue of stakeholders and how goals get prioritized.

As Kingdon (1984) points out, it is often difficult to determine which of the many actors is (or are) responsible for a decision. He adds that the traditional view of the way in which information flows through an organization

... misses that extraordinary looseness of the information system. Ideas, rumors, bits of information, studies, lobbyists' pleadings - all of these float around the system without any hard-and-fast communication channels (p. 81).

Cohen, March and Olsen (1972) developed their *garbage can* theory of decision-making on the basis of this state of affairs. This theory suggests that at any given time, almost any solution can be paired with a problem, since the search for solutions does not necessarily follow the identification of the problem. At any time, argue Cohen et al, decision-makers have ready solutions which they can apply to almost any problem which arises.

According to the authors, there are four separate "streams" running through organizations. These are: problems, solutions, participants, and choice opportunities.

As Kingdon (1984, 90) puts it, "participants drift in and out of decision making, carrying their pet problems and solutions with them...". A choice opportunity and its outcome, therefore, ultimately depend on the mix of these four streams which is present in the can at any one time.

While this might be a pessimistic, and perhaps not very useful, model for predicting future behaviour of public administrators, it serves to re-introduce a related topic: goal prioritization. Kingdon has revised the garbage can model, in an examination of sets of processes which he says dictate government agenda-setting: problem recognition; the formation and refining of policy proposals; and politics.

Key to these processes are the actors who may participate in them. Kingdon suggests that actors both within and outside the formal decision-making structure can play a role. For instance, problems in society capture the attention of ordinary citizens and government. In addition, a variety of specialists (bureaucrats, academics, interest groups, and so on) looks at policy. Each group or individual has "pet ideas" which are carried around. The political stream consists of shifts in national mood or public opinion, elections or changes of administration, and pressure campaigns. The model describes how these processes come together at optimal decision-making times, or *policy windows* (Kingdon 1984, 94). For instance, a participant with a "pet idea" is faced with a sudden swing in public opinion in his or her favour (a window of opportunity), and thus pushes to get the idea onto the public agenda.

The author cites various mechanisms which can bring topics to the fore, some of which are more successful than others. Among them are: feedback (i.e. on a situation

under study); focusing events (crises, disasters, symbols, and so on); and budgets (which can act as a constraint, by serving to push one decision into the background as another gains prominence). For instance, an airplane crash on its own might not make air safety jump to the top of an agenda, unless it is perceived as being symptomatic of a widespread problem. However, the reality of thousands of individual automobile accidents every year can take a back seat to the visibility of one aviation disaster involving many victims.

Thus, public perception plays a role in swaying decision-makers. Kernahan (1985) says that in Canada, pressure groups (which he defines as "...organizations composed of persons who have joined together to seek their mutual interest by influencing public policy" - p. 308) are very pervasive in Canadian politics. He uses a common typology to classify interest groups: *institutional* and *issue-oriented* groups. The first type is characterized by knowledge of the decision-making process, and of how to gain access to public officials. These groups tend to have broad aims so that they cover a wide range of decisions, and they are highly organized with a stable membership. Issue-oriented groups are seen as being the opposite of this. Kernahan also makes the distinction between *special interest* groups, and *public interest* groups. The latter are motivated by the interests of the public at large - an example would be a consumers group.

In his book entitled Impact Assessment and Sustainable Resource Management, Smith (1993) says that these interests, or stakeholders, seek representation in existing institutional arrangements. These arrangements are "a definable system that provides

both opportunity for and constraints upon policy-making" (p. 34). Because stakeholders involve a wide range of actors, decision-making can be seen as being the interaction of several variables, including legislation, regulations, policies/guidelines, economic/financial arrangements, political structures, historical and traditional customs or values, and so on. External stakeholders are characterized by persuasion, organization and continuity, articulation and aggregation of a common interest, and the desire to influence power rather than exercise responsibility for government.

Allison (1971) has developed a decision-making model which almost exclusively deals with the interactions between government and stakeholders. His *governmental politics* model suggests that decisions are the result of bargaining and compromise, due to the conflicts which arise between people. The implication is that in order to have an effect on decision-makers, one must play a political game by both explicit and implicit rules. Outside interests must use persuasion and influence to gain access to decision-making channels - therefore, the implication is that power resides with key individuals.

This is not a very systematic model. The only question it addresses is: where and with whom did foul-ups occur? However, the assumptions underlying this model raise the issue of the political representation of public interests, and thus the concept of the public good.

Corbett (1953) makes this interesting reflection:

If the state can be taken as representing the public interest, conflicts between the state and the group demonstrate the separateness of group interest and public interest (Hodgetts and Corbett 1960, 453).

(He qualifies this statement by adding that the state's protection of the public interest is obviously a matter open to debate).

Corbett suggests that the public interest is for the preservation of society, implying a consensus of values and ideals. By extension, therefore, specific groups represent specific interests which are not necessarily held by all. He suggests that the inequality of representation in government which exists between groups (we spoke earlier of institutional versus issue-oriented groups, and so on¹²), and even the complete exclusion of some interests, make the original purpose of democratic representation somewhat less relevant.

The point which Corbett makes is reiterated in Edwards and Sharkansky (1978), in a section on "bargaining and compromise". These authors suggest that the initial intent of interest representation has been lost in an attempt by decision-makers to compromise in order to satisfy everyone.

There are differing views of the functions of interest groups, including the neo-Marxist approach, which sees the (capitalist) administration as being a system of agencies and departments surrounded by a cluster of groups seeking access. However, through a process of legitimation and coercion, these groups become instruments of social control for the state (Paltiel 1982). *Class analysis* models of decision-making also incorporate this notion. Basically, they suggest that while there are constant struggles (among classes) in society, these struggles do not result in changes to the system, but rather just reflect the balance of power between the classes. This theory takes the cynical approach that any

¹²of course, "public interest" groups have also been mentioned

social program produced by government is an attempt to placate the subordinate classes (Doern and Phidd 1983).

2.2.5 Incremental Theories

The focus on bargaining in public decision-making brings us to the last set of theories, those which deal with the subject of *incrementalism*. As Kingdon (1984) has said, decision-makers often make small, marginal adjustments in their current behaviour, the basis of which goes unquestioned. Politicians, when unable to calculate the political "fallout" of a decision, shy away from "grand departures" in policy tradition (p. 84). A discussion of Canadian public administration from the late 1960s to early '80s suggests that decision-making during those years was characterized by "chance, incrementalism, at best serendipity, not system..." (Pross 1982, 521).

Incremental theory is generally associated with the *successive limited comparisons* model put forth by Charles Lindblom in his seminal work of 1959, entitled "The science of 'muddling through' ". It is argued that the means-end chain is virtually indistinct, which has important implications for the selection of goals. In fact, Lindblom suggests that whereas proceeding by trial and error is usually looked upon negatively by critics, it should be seen not only as a useful tool, but also as a purposeful philosophy. Thus, administrators choose incremental goals, not because they cannot do otherwise, but in order to be relevant.

Incrementalism suggests that the best predictor of future policy is the recent past.

Therefore, administrators make:

- small, marginal adjustments to the existing policies;
- restricted evaluation of alternatives and consequences;
- adjustment of objectives to policies;
- reconstructive treatment of data (Doern and Phidd 1983, 42).

The test of a good decision is not only good results, but whether it can command a consensus (the "relevance" to which Lindblom has referred). A series of small adjustments helps to avoid large errors, and thus allows administrators to have greater control. In a way, this model makes up for a weakness of the rational model, by explaining limits to human problem-solving capabilities, as well as the difficulties in obtaining and processing information (Doern and Phidd 1983). Atkinson and Chandler (1983) would add that a strategy which attempts to satisfy all interests often results in policy which is ill-defined, with very ambiguous goals.

Blaug (1985), in an article by Keech (1991) which examines the positivist paradigm in economics and its inapplicability to public policy, illustrates the notion of the relevance of decisions:

...decision makers do not try to get what they want; rather they learn to want what they get. Means and ends are indissolubly related... (p. 607).

In other words, says Keech, policy is defined by what we learn is feasible.

Goodin and Waldner (1979) have identified three incremental approaches in public decision-making. The first is a process not grounded in any theoretical base,

where administrators make small interventions; if these do not meet with success, small steps in another direction are taken. The second type is an approach which advocates taking small steps in order to interpret the results as empirical data which test a current theory about the way in which the world works. The third type is a purposeful process of making small changes, based on the belief that such incremental decisions are easily reversible if need be.

In a number of sociology essays (Granovetter 1985, Powell 1985) which look at decision-making, a concept related to incrementalism, called *embeddedness* (or habit), is discussed. The authors suggest that it is an important factor in the way decisions are made. Granovetter argues that while embeddedness is not considered in traditional theories, it has, in psychology and sociology literature, consistently provided an explanation for seemingly non-rational human behaviour.

If incrementalism and habit characterize so much of public decision-making, when and how are fundamental decisions ever made? *Are* there such things as fundamental decisions? While Lindblom (1959) would argue that innovation is not required in public decisions, others say that when organizations are faced with new situations, non-procedural responses are required. In the case of a crisis or shifting public opinion, "thinking small"¹³ proves to be dangerous.

The question of innovation is addressed by Etzioni (1967), in his variation on incremental theory. His *mixed scanning* model suggests that while compromise and partisanship are considered the norm in decision-making, at some point an organization

¹³a term taken from Goodin and Waldner, 1979

must inevitably make fundamental, innovative decisions, in order to set the context for numerous incremental ones. Thus, while it may seem that all decisions are small, at some point in time a fundamental, purposeful decision guiding these smaller ones had to be made.

Etzioni suggests that fundamental decisions require a rational, comprehensive search (or "scanning") for alternatives, since they are "policy-establishing" (p. 389); incremental ones, on the other hand, need only a truncated search. The model sets forth a number of criteria by which a decision-maker would know when to use each level of scanning. Etzioni argues that by establishing such a set of criteria, his model makes up for a weakness of traditional incremental theory. That weakness has to do with the inability of incrementalists to scale values, and thus evaluate the pertinence of a policy, since fundamental decisions are supposedly never made. By acknowledging that there are multiple goals guiding a decision, ranking them consists of assigning a greater weight to what is considered to be the overriding objective of a decision.

2.2.6 Ranking Multiple Goals: Searching for a Synthesis

Hopefully, the reader feels that the structure of this brief exposé of decision-making theories has brought the discussion full circle, to tie up the subject of the relationship between means and ends. There remains, however, one lacuna in this discussion, which has to do with the problem of assigning weights to the many objectives

which often factor into a decision.

Proponents of the theories which lie along the decision-making spectrum (i.e. *rational* through *incremental*) all seem to suggest that in order for organizations to proceed with any rationality at all, there must be a ranking of goals. Rational theory, especially, is often associated with benefit-cost analysis, because of its assumption of efficiency as a goal. Simon (1976, 179) says that, given the usual scenario of a scarcity of resources in the public sector, "the criterion of efficiency dictates that choice of alternatives which produces the largest result for the given application of resources". Hence, efficiency is seen as the relationship between inputs and outputs.

Assigning weights to objectives in public administration is obviously difficult, if not impossible. This is partly due to the indivisible nature of many public goods (such as national defence, medical research, pollution abatement and so on, which benefit all members of society). Using measures such as a population's willingness to pay for certain public services, or effects on quality of life, is tenuous at best. In addition, some programs, while considered by governments to be in the public interest, are not very well understood by many citizens - for instance, a space program (Edwards and Sharkansky 1978, 187-190).

Edwards and Sharkansky also address the question of efficiency. They argue that efficiency is ultimately difficult to evaluate, given the non-quantifiable, non-economic issues often involved in public policy. As an example, the authors cite the selection of job training over income-maintenance strategies in the fight against poverty. While the latter might prove to be more efficient in achieving their goal, the former is preferred

because the decision-makers value self-reliance (as a far-reaching, development goal which transcends immediate poverty).

In an optimistic discussion of the topic, Hill (1973) suggests that benefits must be evaluated against specific goals. This implies a time lapse at the end of which such benefits can be measured, which is not very useful for planning new situations. However, his work offers some insights into the variety of objectives which might be targeted by transportation policy, revealing the complexity of making related decisions. They can include: increased accessibility, single project efficiency, system efficiency, fiscal efficiency, resource utilization, and income distribution.

Obviously, the multiple criteria involved in most public decisions add to the difficulty of proceeding rationally. The theories explored in this section have illuminated the variety of constraints facing public administrators. These can include conflicting goals, both within and outside of an organization. In addition, human limits to knowledge, time considerations, and organizational structure can impede progress.

Some of the theories have suggested that decision-makers try to avoid making innovative decisions in order to limit what one author called political "fall-out". These models argue that compromise and political manoeuvring dominate the decision-making process. All of the theories and their variations revolve around the central concept of the means-end chain. It quickly becomes apparent that the selection of means does not always follow the identification of ends, and that in fact, the opposite can occur. The relationship between the two often seems to be fuzzy at best.

2.3 Decision-making and Public Transportation Infrastructure Investments

2.3.1 The Lack of Studies on Public Port Investment Decision-making

There exists a certain amount of literature in the fields of economics, public administration, and transportation on investment decision-making for various transportation modes. However, few studies address the decision process with regards to public port expenditures. Perhaps, as Feldman and Milch (1983) say, this is because ports are not as prominent as airports, which have traditionally been the object of much public scrutiny. Such public awareness is due to the inherent issues of noise and safety, increased traffic flows, as well as tremendous land requirements. Only relatively recently has the subject of environmental degradation become a topic of debate with regards to maritime port developments.

The reader may wonder about what seem to be important omissions in this section. For purposes of compatibility with my topic, I have excluded the literature on rail and urban transit expenditures, because they differ by virtue of the multiplicity of jurisdictions involved. Transport Canada exercises full control mainly over marine and aviation activities. Since road and rail modes fall under municipal, provincial and/or crown corporation authority, any attempt to compare the modes becomes very complicated. It has been suggested that an examination of decision-making should consider underlying ideas, structures and processes (Doern and Phidd 1983). Yet very few case studies have been attempted. The general and maritime-related transportation

literature tends to approach the subject of infrastructure expenditure decisions from a normative perspective. Brushing off non-rational planning processes as the result of "politics" (which has a negative connotation and is seen as a constraint), many authors make suggestions as to how to achieve the most efficient use of resources. Decisions are often perceived to be the result of poor planning and conflicting goals. The inadequacies of the maritime literature stem from the distinctiveness of commercial public ports, not only in terms of their jurisdiction and funding, but also because of their important functional and regional roles.

2.3.2 General Literature on the Financing of Public Transportation Infrastructure

The first section of this literature review described the variety of potentially conflicting goals which may be involved in public decision-making. Included are efficiency, accessibility, and so on. Carter (1984) suggests that the expenditures by the British Department of Transport are often couched in ambiguous statements of purpose, due to the very broad objectives of transport policy, which are:

...that the system as a whole operates safely, effectively and efficiently, with due regard to the wider interests of the environment and economic and social objectives (p. 26).

In an optimistic attempt to promote greater efficiency in various departments, Carter proposes that planners develop narrower definitions of what constitutes the public

good, with regards to specific sectoral investments.

Interestingly, when the first Canadian National Transportation Act was passed in 1967, it brought with it claims by the Treasury Board and Privy Council that Transport Canada's "service" approach to planning was due to the department's narrow view of its role within the "national transportation framework" (Langford 1982). In response, a list of very broad objectives was drawn up, including increasing the efficiency of the transportation system, safety, and promoting economic and social development.¹⁴

These objectives were reflected in a departmental re-organization that began in 1969. The new ministry system gave the minister and deputy minister strong centralized control over operational, regulatory and development areas. Langford argues that the meshing of politics with bureaucracy (with regular reviews by advisory boards) created successful policy-making, as it allowed for innovation in planning, and better communication in both upwards and downwards directions.

Doern (1982) discusses the environment in which Transport Canada must make decisions regarding capital investments. Formal emphasis is placed on cost-recovery, and restricting spending to the renewal of aging or overloaded infrastructure; however, these long-range plans must be placed in what Doern calls "the wider socio-economic, institutional, and political environments..." (p. 162). Budgets, economic development envelopes and interest groups, combined with demand for transportation services, are some of the factors involved in decision-making.

¹⁴ironically, this has brought more criticism and a renewed attack against the department's "service" philosophy (this is especially prevalent in the maritime literature).

Burns (1973) has examined Canadian transportation policy from a historical perspective, saying that since Confederation, the dominance of national aims over transportation needs has resulted in an inconsistent focus of federal transport policy. He argues that while demand for commercial transportation is a derived one, based on the exchange of goods, duplication of facilities (i.e. rail lines) has occurred more for political than for economic reasons.

Another important author on the subject of Canadian transportation policy is Studnicki-Gizbert. He suggests (1992) that the MacPherson Royal Commission Report (1961) which underlies current Canadian transportation policy, naively assumes that its first function is to define the needs of national transportation in an attempt to maximize economic efficiency, and then secondarily to deal with national policy. Studnicki-Gizbert argues that, realistically, sectoral policies must reflect national goals. The federal transportation system in Canada is an instrument of national integration, as well as providing access to markets and serving regional development needs.

In an article comparing public investment decision-making to the fable of the blind men and the elephant (where "selected perceptions of the elephant's anatomy are interpreted as representative of the whole" - p. 235), Carroll (1992) very superficially discusses the wide variety of factors which can lead to a fragmented response to consumption-investment balances. He suggests that the trend towards disinvestment and efficiency, small budgets, divided government, special interests and disincentives to long-range planning (such as electoral cycles) all affect the way in which decisions are made. He argues for a strategy of reinvestment, due to its potential for breaking what Sherraden

has called the " 'need - transfer payment - bureaucratic services' " response (Carroll 1992, 236).

Haefele (1969) makes some attempt to describe transportation decision-making by presenting five decision scenarios, each successive one more complex than the last. The first two consist of improving the cost-efficiency of a system, based on such factors as tonnage, speed, reliability and safety, and ignoring all externalities. The last three incorporate value judgments, such as which transport investments to make in a certain area, and developing priorities for investment. In cases such as these, argues the author, goals are often not explicit, and are much harder to define than cost-efficiency. The result is that transport planners consciously or unconsciously use judgment to come to a decision.

It is argued therefore that decision-making advances in an incremental fashion, because of the conflicting objectives involved. Haefele suggests that when policy-makers favour specific outcomes, transportation planners become their pawns, in that their expertise is used to support a policy which has been decided upon in advance.

Studnicki-Gizbert (1992) characterizes the development of Canadian transportation policy as a series of deliberately incremental decisions. The advantages of such a strategy are:

- 1) the need for less precision in the formulation of instructions;
- 2) reduced uncertainty;
- 3) ease in forecasting.

He says that the logical precursor to any proposed change in policy, due to dissatisfaction with an existing situation, is a diagnosis of the prevailing conditions.

However, the perception that the system works well for most of the people, most of the time, is the main reason that radical shifts in policy do not occur. Because of the wide range of objectives to be met, Studnicki-Gizbert suggests that the term "steering", rather than "planning", best describes transportation decision-making (p. 103).

Kaplan (1990) explains why infrastructure planning tends to be so inconsistent. It is on the one hand characterized by disinvestment, and yet on the other, poorly-planned expenditures at a time when there may be less need for new infrastructure. The reasons for this "episodic" response are:

- unbelievably high estimates for capital, maintenance and repair (i.e. \$3 trillion to improve American infrastructure);
- the subject does not interest the average citizen (unless it is a local problem);
- there is no consensus on the nature of the problem, and thus the means to resolve it;
- national infrastructure lacks a unified national constituency;
- jurisdictional issues impede action.

Kaplan goes on to say that only by refining needs assessment, through the use of such tools as benefit-cost analysis to identify long-term plans, will rational decisions be made. Otherwise, he says that incrementalism (i.e. action taken on the basis of public perceptions of crisis) will continue to be the norm.

2.3.3 The Case of Mirabel

The decision-making process for Québec's Mirabel airport has been the subject of

numerous studies, including a simulation exercise describing the conflict over the airport site selection (Gosselin and Brassard 1977). When the project was announced in 1967, the airport was intended to be at Ste. Scholastique, just north of Montréal and only 17 miles from Dorval Airport. The increase in flights out of Dorval seemed to justify another airport. The province's regional development agency, the Office de planification et de développement du Québec (OPDQ), was very interested in the location of the airport because of its potential regional economic impacts. The OPDQ recommended that four sites in the province be identified (north, west, east and south), because more than just technical and capital investment considerations were at stake. Québec threatened to not cooperate with the building of necessary secondary infrastructure (access roads, etc.), if Transport Canada did not comply with the OPDQ's wishes.

Gosselin and Brassard describe the objectives of the concerned authorities. The federal government's (Transport Canada's) included: finding the best site, in terms of safety and efficiency; and trying to achieve the greatest economic benefits for the national economy, while reducing economic disparities in Québec. The province's goals were economic development and the reduction of disparities. The City of Montréal wanted to promote development while avoiding aggravating congestion problems.

The authors suggest that the task force responsible for implementing the necessary studies was faced with the difficulty of weighting often-conflicting issues such as flight operations, convenience, and short- and long-term regional impacts. In addition, there was the question of expropriating a vast tract of land for the project. The Gosselin-Brassard simulation does not draw many conclusions, except to say that the

federal government had the last word in the siting decision. The study leaves out a very important question which was central to the whole debate: was there a real need to invest in a new airport?

Stewart (1979) discusses the factors that went into the final choice of site, factors which were revealed by the consultant who helped make the decision. Although the projection of future air transit needs was questionable, both before and after construction of the new airport, Benjamin Higgins states that Transport Canada was determined to build a second facility, and "...once they had made up their minds to that, they went around looking for reasons why they had to have it." (p. 16).

Higgins says that when he was asked to study the sites, the assumption that the airport was needed was incorporated from the very beginning. His preliminary findings were eventually used as the final argument, since the federal government had in fact already decided where it wanted the airport.¹⁵ Ironically, in the midst of the battle between governments and interested parties, the question of whether the airport was really needed was left unanswered. It soon became apparent, however, that Dorval Airport would have to be de-emphasized to justify Mirabel's existence.

In their critique of the Mirabel decision, Feldman and Milch (1983) suggest that there were too many actors involved in the decision, creating many planning errors. The results were disastrous, partly because Trudeau wanted to appease Québec, and partly because Transport Canada had "absorbed the values and objectives of the aviation

¹⁵Higgins says that political factors - interference with American airspace (southern site), not wanting to offend Québecers by choosing a site near Ottawa, etc. - and not technical ones, were the reason.

industry" (p. 44). The industry favoured a new airport over the costly expansion of existing facilities or the curbing of their clients' behaviour. The federal government paid unduly for not having considered alternatives to maximum demand.

Feldman and Milch state that the overriding difficulties lay in the approach taken by the government, which was that "politics" were only a constraint to what it hoped would be seen as largely technical (i.e. traffic) considerations. The authors also say that inter-agency conflict (between the Department of Regional Economic Expansion, which played a great role, and Transport Canada) resulted in an untimely, poorly-planned action.

2.4 Maritime Transportation Literature

Dosman (1978) has said that interests make seaports competitive, and therefore volatile public issues. For this reason, the provision of infrastructure should be de-politicized. This comment reflects a dominant theme in the maritime transportation literature, that of the structure of the port system in Canada. Dosman states that a common criticism, both within and outside government, is that the "public service approach" of Canada's public port system creates an ideal climate for political patronage (pp. 9, 15). Province-building and national, regional and local social objectives create often unhealthy inter-port competition, because of the multiplicity of port systems in Canada. An integrated national port system is recommended.

In an article entitled "Institutional structure of Canadian ports", Ircha (1993) also discusses the various port authorities in this country. He argues that there should be more autonomy in the public port system, and (in addition to incorporating more ports into the CPC¹⁶), advocates a regional system which would be halfway between centralized control and local autonomy. It is interesting that Ircha suggests that, in order to de-politicize the decision-making process for port investments, members on regional advisory councils should not be politicians, but "representatives of the business and technical community affected by ports in the region" (p. 63). He assumes that these individuals would approach the matter in a purely rational, business-like manner.

A well-known author on the subject of ports and maritime transportation is Goss. He also argues (1983) that there should be less federal involvement in public ports, with responsibility being decentralized to local and regional authorities in such areas as forecasting trade, monitoring technical developments in ship size and cargo-handling techniques, training of employees, marketing of the port, and so on.

In a classic market-based approach, Simms (1989) suggests that the rationalization of the number of ports in the public system could be accomplished by allowing the larger, stronger ports in the system to "phase out" the smaller ones which "frustrate the normal diversion of traffic to strategically-located volume ports" (p. 46). This could be complemented by a marketing strategy within a policy aimed at investing only on the basis of non-incremental traffic. Port promotion is also advocated by Tessier (1990) and others, as the theme becomes more prevalent in the face of international

¹⁶Canada Ports Corporation (a crown corporation)

competition.

Heikkila (1990) is against the privatization of ports, arguing that encouraging competition among the ports within the same nation only leads to aggressive pricing strategies, which ultimately run counter to national economic and transportation goals.

Fosbrooke (1976) says that a lack of co-ordination in British port policy, due to competing interests, has led to a great duplication of facilities. While the National Ports Council has an overall development plan for the system, it relies on project proposals by individual ports to realize this plan. The department of transport is supposed to play a supervisory role, but in reality it does very little to curb inter-port competition.

In a series of articles on economic policies and ports, Goss (1990a,b,c,d) argues that the subsidization of ports (i.e. Canada's public port system) is inefficient.¹⁷ He says that subsidization does not make sense for cost-effective reasons. These are:

- that subsidies ultimately hurt the original producers of an export;
- and that the benefits of subsidies whose purpose is to promote regional development are likely to accrue to the owners of shipping lines, rather than local businesses.

The above arguments illustrate the fact that there is concern in the maritime transportation literature about the ability of a public port system to operate efficiently in the face of a variety of constraints. The assumption, therefore, is that the top priority of any transport department is efficiency, but that this objective is sabotaged by the interactions between politicians and their constituencies. There is little consideration of

¹⁷in the same journal, a whole volume is devoted to the pros and cons of subsidized ports; it is therefore a major issue.

the other decision-making elements described in the first section of this review, such as the limitations imposed by organizational structure, incomplete knowledge, time constraints, and so on.

One topic which does receive much attention in this literature is the weighting of costs and benefits of infrastructure expenditures. It only serves to reinforce the reader's view that the mainstream work seems to be grounded in a scientific management approach. For instance, Robinson (1985) says that:

Pure public goods... are characterized by the existence of externalities... [which] ... arise when the benefits or costs from production or consumption of a good accrue to parties other than those involved in the economic transaction (p. 183).

The author goes on to say that infrastructure project decisions must be based on an evaluation of the benefits (which might be maximizing productivity, reduction of regional disparities, system efficiency, etc.) and costs. In other words, a project must be undertaken in view of achieving a specified objective, in order for its success to be measurable.

Pettifer (1989) suggests that economic impact analyses be used to provide information on the local and regional benefits of a port infrastructure investment. He says that while such studies have traditionally been used as "public relations" exercises, their present level of sophistication can be useful in justifying expenditures. Pettifer seems to recommend a standard approach, whereas others (such as Martin 1987) would argue that economic impact studies need to be tailored to each port in order to be relevant.

In a broad discussion of the many factors influencing infrastructure decisions, Bird (1971) suggests that investment be based on a cost-benefit analysis. He argues that the problem inherent to the traditionally "piece-meal" development of ports is that it places constraints on future development, because of the indivisible nature of the infrastructure (which is often obsolete by the time it is paid off).

Bird acknowledges, however, that while incremental decisions are sometimes harmful with regards to port development, the weighting of what he calls "unknown factors" (i.e. political considerations, budget restraints, regional development, technical innovations and changing policy) is difficult. He argues that only a national, integrated port jurisdiction can make proactive decisions for the system as a whole, and thus avoid the existing lack of coordination.

Hawkins (1991) also addresses the problem of appraising port infrastructure investments. He suggests that two approaches can be taken: a narrow one (such as benefit-cost), which only considers financial rates of return; or a broader, "holistic" one. There are seven facets to the latter approach, including economic, technological, social, financial, political, commercial and organizational considerations (p. 226). However, his proposition only adds to the chicken-and-egg argument. Hawkins says that a decision must be made as to which of these considerations would most directly affect the investment; and that ultimately, such a decision will depend on the value placed on those considerations by the decision-maker. He seems to assume that complete knowledge about various impacts is easily obtainable.

In a recent article, Dowd and Jonson (1993) review the formal process of

decision-making in the U.S. with regards to evaluating capital port projects. The process involves three phases, including the "acceptance" phase, which involves matching the proposed project with what the authors call the "mission statement" of the port authority (i.e. its goals - p. 78); the evaluation of return on investment follows. The second phase is the "capital budgeting" phase, and the third is the "implementation" phase. Offering no real analysis of the accompanying problems, Dowd and Jonson state that failure to adequately meet the requirements of any of these steps is a reason to reject the investment proposal.

2.5 Summary

The literature presented in the second section of this literature review is a representative sample of the work done on capital investment decision-making with regards to transportation infrastructure. There is a very real gap between the depth of analysis required in any examination of public decision-making (as revealed in the first section), and the level of analysis existing at the present time in the maritime transportation literature. In general, the approach taken by many authors tends to be a normative one, which includes many assumptions about the ability of planners to deal with a wide variety of financial and socio-economic objectives.

The case of Mirabel Airport, as an example of government decision-making, helps to reveal the actual environment of public investment decisions, including external

interests, inter-agency conflicts and political manoeuvring.

For a number of reasons, public ports are distinct from other modes of commercial, public transportation. Their jurisdiction, form of funding and regional/functional roles all greatly affect the way in which decisions to develop them are made. These factors, combined with the current lack of research, suggest a timely need for a case study on public port decision-making.

BIBLIOGRAPHY - CHAPTER 2

- Allison, Graham T. Essence of Decision: Explaining the Cuban Missile Crisis. Boston: Little, Brown, 1971
- Atkinson, M.M., and M.A. Chandler (ed.). The Politics of Canadian Public Policy. Toronto: University of Toronto Press, 1983
- Bird, J.H. Seaports and Seaport Terminals. London: Hutchinson, 1971
- Blaug, Mark. "The Methodology of Economics". 1980, in Keech, W.R., "Politics, Economics, and Politics Again". Journal of Politics, vol. 53, 1991, 597-611
- Burns, R.M. Transportation Policy: An Examination of Constitutional and Intergovernmental Aspects of a Coordinated Transportation Policy in Canada. Kingston, Ont.: Canadian Institute of Guided Ground Transport, Queen's University, 1973
- Carroll, J.D. "The public administration of investment: Grappling with the blind men and the elephant". Public Administration Review, May-June, 1992, Vol. 52, #3.
- Carter, Charles. The Purposes of Government Expenditure. London: Policy Studies Institute 1984
- Cohen, M., James March, and J. Olsen. "A Garbage Can Model of Organizational Choice". Administrative Science Quarterly, 17, March 1972: 1-25
- Corbett, D.C. "The Pressure Group and the Public Interest", 1953, reprinted in Hodgetts, J.E., and D.C. Corbett (ed.). Canadian Public Administration, 1960, 452-62
- Dahl, R.A. "The Science of Public Administration: Three Problems", 1947, reprinted in Hodgetts, J.E., and D.C. Corbett (ed.). Canadian Public Administration, 1960, 24-31
- Doern, G.B. (ed.). How Ottawa Spends Your Tax Dollars: National Policy and Economic Development. Prepared by the School of Public Administration, Carleton University. Toronto: J. Lorimer and Co., 1982

- Doern, G.B., and R.W. Phidd. Canadian Public Policy. Agincourt, Ont.: Methuen Publications, 1983
- Dosman, Edgar J. "Canadian Ports Policy: The Canada Ports Act (Bill C-6), Background and Prospects". Research Seminar Series. Canadian Transport Commission, Research Branch, Spring 1978, 2-32
- Dowd, Thomas J. and Candace Jonson. "The process of capital investment at U.S. public ports", Maritime Policy and Management, 1993, Vol. 20, #1, 77-84.
- Edwards, G.C., and Ira Sharkansky. The Policy Predicament. San Francisco: W.H. Freeman and Company, 1978.
- Etzioni, A. "Mixed-Scanning: A 'Third' Approach To Decision-Making". Public Administration Review, 27, #5, December 1967, 385-392.
- Feldman, Elliot J., and Jerome Milch. The Politics of Canadian Airport Development: Lessons for Federalism. Durham, N.C.: Duke University Press, 1983
- Fosbrooke, R.H. Transport Regulation: Review of Selected Foreign Approaches. Canadian Transport Commission, Economic and Social Research Directorate, #76-17, May 1976
- Goodin, R., and I. Waldner. "Thinking Big, Thinking Small, And Not Thinking At All". Public Policy, 27, #1, Winter 1979, 1-23
- Goss, R.O. "Policies for Canadian Seaports", in Research Seminar Series, CTC, Research Branch, Vol.10, Fall 1983.
- _____. "Economic policies and seaports: 1: The economic functions of seaports". Maritime Policy and Management, 1990(a), Vol. 17, #3, 207-219.
- _____. "Economic policies and seaports: 2: The diversity of port policies". Maritime Policy and Management, 1990(b), Vol. 17, #3, 221-234.
- _____. "Economic policies and seaports: 3: Are port authorities necessary?". Maritime Policy and Management, 1990(c), Vol. 17, #4, 257-271.
- _____. "Economic policies and seaports: 4: Strategies for port authorities". Maritime Policy and Management, 1990(d), Vol. 17, #4, 273-287.
- Gosselin, Roger and J.P. Brassard. Mirabel. Toronto: Case Program in Canadian Public Administration, 1977

- Granovetter, M. "Economic Action and Social Structure: The Problem of Embeddedness", 1985, reprinted in Zey, M. (ed.). Decision Making, 1992, 304-33
- Haefele, Edwin T. (ed.). Transport and National Goals. Washington: The Brookings Institute, 1969
- Hawkins, Jeffrey E. "Port investment appraisals for the 1990s". Maritime Policy and Management, 1991, Vol. 18, #3, 225-232.
- Heikkila, Eric J. "Structuring a National System of Ports". Portus, Summer 1990, 19-23.
- Hill, M. Planning For Multiple Objectives. Pennsylvania: Regional Science Research Institute, 1973
- Ircha, M.C. "Institutional structure of Canadian ports". Maritime Policy and Management, 1993, Vol. 20, #1, 51-66.
- Kaplan, Marshall. "Infrastructure Policy: Repetitive Studies, Uneven Response, Next Steps". Urban Affairs Quarterly, Vol. 25, #3, March 1990, 371-388
- Keech, W.R. "Politics, Economics, and Politics Again". Journal of Politics, 53, #3, Aug. 1991, 597-611.
- Kernahan, K. (ed.). Public Administration in Canada (5th edition). Agincourt, Ont.: Methuen, 1985
- Kingdon, J.W. Agendas, Alternatives, and Public Policies. Glenview, Ill.: Scott, Foresman and Co., 1984
- Langford, J.W. "Transport Canada and the Transport Ministry: The Attempt to Retreat to Basics". Doern, G.B., (ed.). How Ottawa Spends Your Tax Dollars: National Policy and Economic Development, School of Public Administration, Carleton University, 1982, 147-171.
- Lindblom, C.E. "The Science of 'Muddling Through' ". Public Administration Review, 19, Spring 1959, #2, 79-88
- _____. The Policy Making Process. Englewood Cliffs, N.J.: Prentice-Hall, 1968
- Lynch, T.D. Policy Analysis in Public Policymaking. Toronto: D.C. Heath and Co., 1975

- Lynn, N.B., and A. Wildavsky (ed.). Public Administration. New Jersey: Chatham House Publishers, Inc., 1990
- March, J.G., and Herbert A. Simon. Organizations. New York: Wiley, 1958
- Martin, John C., "Economic Impact Analysis: A Port-Specific Approach". Portus, Fall 1987, #4, 33-36.
- Nigro, F.A. Modern Public Administration, 1965, reprinted in slightly abridged form in Kernahan, K. (ed.) Public Administration in Canada (5th edition), 1985
- Paltiel, K.Z. "The changing environment and role of special interest groups". Canadian Public Administration, 25, #2, Summer 1982, 198-210
- Perrow, Charles. Complex Organizations (3rd edition). U.S.A.: McGraw-Hill, Inc., 1986
- Pettifer, Graham, "Port as an Engine of Economic Growth". Portus, Fall, 1989, 37.
- Powell, W.W. "The Social Embeddedness of Getting Into Print", 1985, reprinted in Zey, M. (ed.). Decision Making, 1992
- Pross, A.P. "From system to serendipity: the practice and study of public policy in the Trudeau years". Canadian Public Administration, 25, #4, Winter 1982, 520-544
- Richardson, I.L., and S. Baldwin. Public Administration: Government in Action. Columbus, Ohio: Bell and Howell Co., 1976
- Robinson, Grace A. "Capital Investment Decisions: An Investigation of Evaluation Criteria and Their Application to Canada's Public Port Industry". M.B.A. thesis, Concordia University, 1985.
- Sherraden, 1992, p. 236 of Carroll, J.D. "The public administration of investment: Grappling with the blind men and the elephant". Public Administration Review, May-June, 1992, Vol. 52, #3.
- Simms, George C. "Are there too many ports?". Portus, Winter 1989, 46-49.
- Simon, Herbert. Administrative Behavior (3rd edition). New York: Free Press, 1976
- Smith, L. Graham. Impact Assessment and Sustainable Resource Management. Longman Group U.K. Ltd, 1993

Stewart, Walter. Paper Juggernaut: Big Government Gone Mad. Toronto:
McClelland and Stewart, 1979

Studnicki-Gizbert, K.W. Canadian Transport Policies: A Historical Overview of Issues.

Sponsored by Transport Canada, Policy and Coordination (Economic Analysis).
Ottawa, Dec. 1992

Taylor, Frederick Winslow. The Principles of Scientific Management. New York:
Norton, 1947

Tessier, Jean Michel. "Structure portuaire canadienne: concurrence accrue". Portus,
Spring 1990, 26-28

Weber, Max. From Max Weber: Essays in Sociology. Translated, edited and
Introduction by H.H. Gerth and C. Wright Mills. London: Kegan Paul,
Trench, Trubner and Co., Ltd, 1947

Zey, Mary (ed.). Decision Making. Newbury Park, Calif.: Sage Publications, Inc., 1992

CHAPTER 3
THE FORMAL DECISION STRUCTURE AND PROCESS
AT TRANSPORT CANADA

3.1 Introduction

The preceding literature review illustrated the fact that many variables can affect public decision-making. These include factors inherent to organizational structures, such as conflicting goals, hidden agendas, human limitations, and so on (Simon 1976, March and Simon 1958). While it has been argued that the organization chart presents only part of the reality of the decision process (Kingdon 1984), it is nevertheless important to familiarize oneself with the formal decision-making structure. The first section of this chapter describes the organization of Transport Canada (DOT), as well as that of the Canadian Coast Guard, Harbours and Ports Division. The second section outlines the formal strategic planning process for public port investments, which was introduced in the early 1980s. It discusses the priorities for capital expenditures, and the approval process and authorities involved in appropriating the necessary funds.

3.2 Structure of the Organization

Canada's public bureaucracy functions much like any other in a parliamentary system. There are the traditional central agencies (Privy Council, Finance, Treasury Board, Justice, External Affairs), which have broad, horizontal responsibilities (i.e. relating to many activities and agencies of government), much formal authority, and relatively small budgets (except for Finance). Other departments (Public Works, National Revenue, Supply and Services) have a coordinating function. Apart from these, there exist 15-20 vertically-ordered (or "line") departments, which have very large operating budgets (Doern and Phidd 1983).

As a line department, Canada's DOT¹⁸ performs two main functions related to the delivery of services to the public: advising the executive, through the Minister of Transport (MOT), on courses of action (based on the department's expertise and/or the perception of the public interest); and administering policies set out by the legislative assembly, which are passed on by the MOT and the Deputy Minister (Doern and Phidd 1983). The structure of the DOT is hierarchical in nature (see figure 2). It is headed by the MOT, Minister of State, and Deputy Minister, who are career politicians. The Deputy Minister is the administrative head (or manager) of the department, and as an appointed official, works very closely with the Minister of Transport (Van Loon and Whittington 1987). All other positions in the department are filled by civil servants.

¹⁸which was created in 1936 by the amalgamation of the Department of Railways and Canals, Department of Marine, and Civil Aviation Branch of the Department of National Defence

Like many public and private organizations, there is a high degree of specialization of functions in the department.

Transport Canada comprises 6 major activities: Policy and Coordination; four operating groups, which are the Canadian Coast Guard (Marine), Aviation, Airports, and Surface; and Departmental Administration. Also included are Crown Corporations and Agencies, which have varying degrees of autonomy. All of these are responsible to the MOT. There was a departmental re-organization in 1986, which led to certain changes and additions (figures 2 and 3). For instance, three sub-groups (Public Affairs, Security and Emergency Planning, and the Airport Transfer Task Force) were added; and the National Transportation Agency replaced the Canadian Transport Commission. This re-organization was intended to reflect the government's new emphasis on efficiency and coordination, with "strong multi-modal, regional representation in planning, policy and coordination" (Canada, DOT 1992, 1-18).

The role of the recently-created Policy and Coordination Unit is to promote, through its research and development activities, policies to integrate various transport modes. An example of this is the management of transfer payments for various federal-provincial initiatives, such as Economic and Regional Development Agreements (ERDAs), as well as highway and ferry projects. Because of the multiplicity of jurisdictions involved in roads and railways, these "surface" operations are associated with the Policy and Coordination unit.

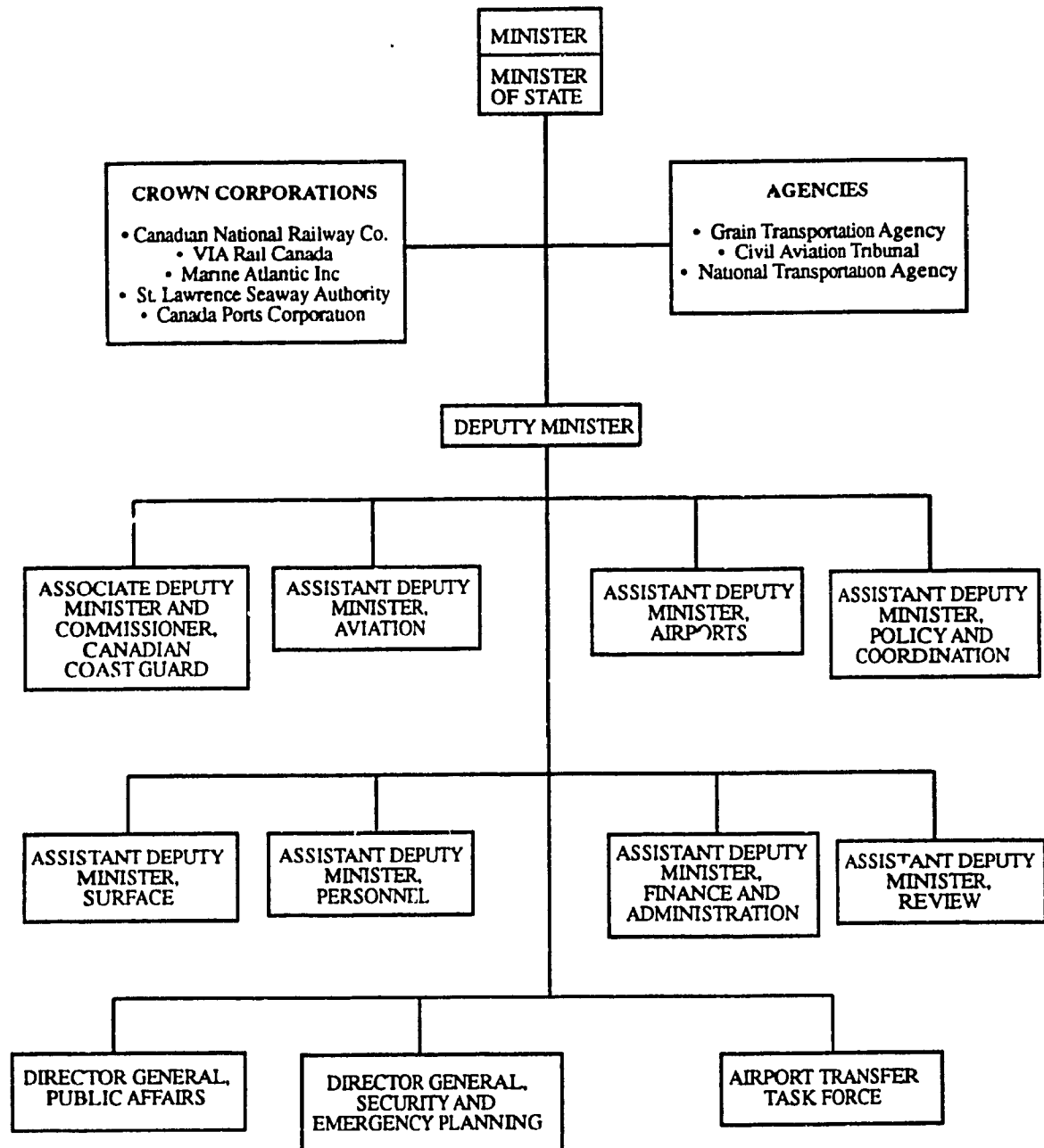
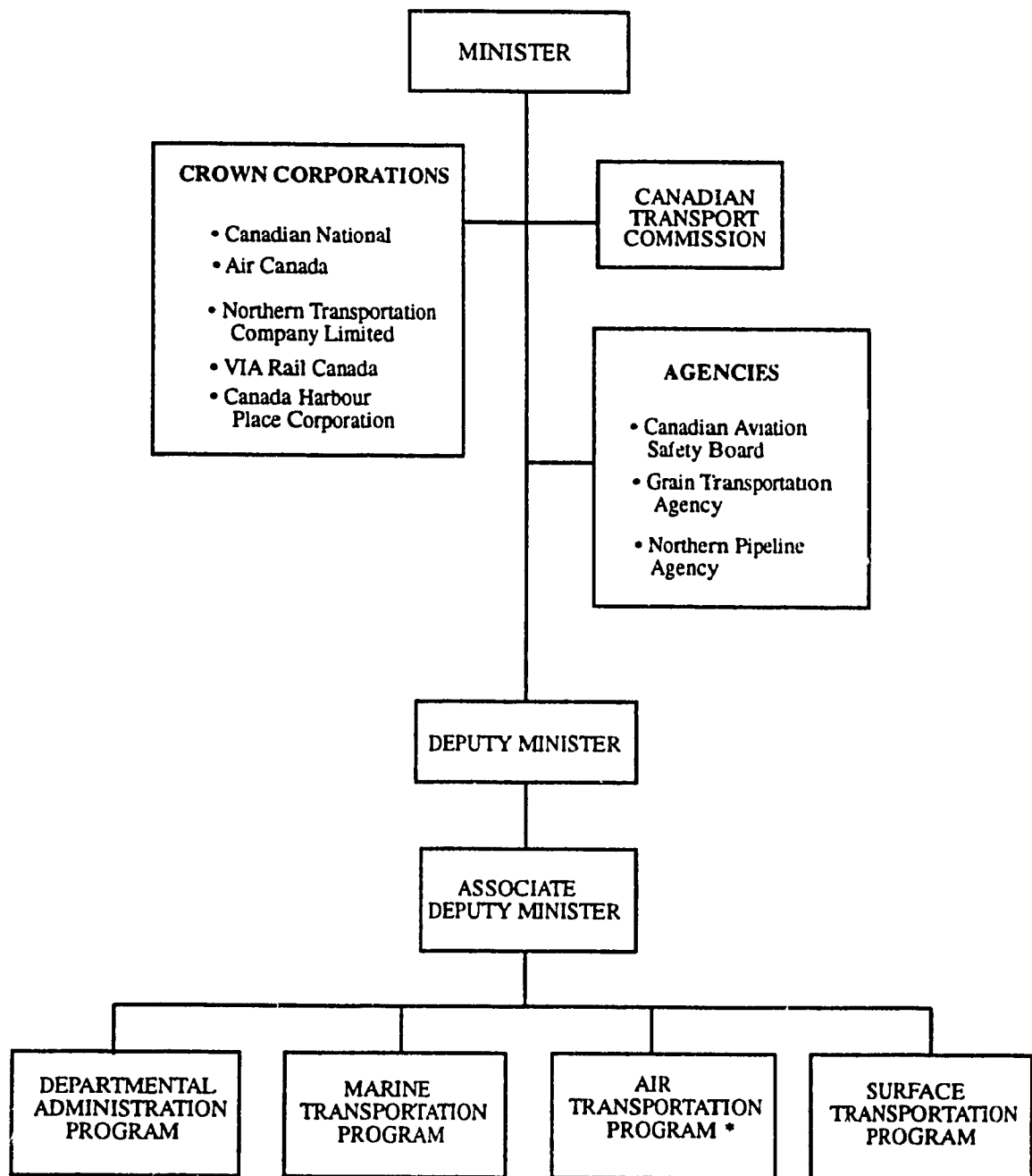


Figure 2. Structure of Transport Canada since 1986.
Source: Canadian Coast Guard.



* Includes the following Crown Corporations:
Ports Canada, St. Lawrence Seaway Authority, Atlantic Pilotage Authority, Laurentian Pilotage Authority, Great Lakes Pilotage Authority, Pacific Pilotage Authority and the Canarctic Shipping Company Limited.

Figure 3. Structure of Transport Canada, pre-1986.
Source: Canadian Coast Guard.

3.3 Structure of the Canadian Coast Guard, Harbours and Ports Division

The Canadian Coast Guard (CCG) is one of four operating groups within the Department of Transport, and also one of the more significant in terms of financial requirements.¹⁹ In 1991, there were 6000 CCG employees across Canada (P.-E. Drapeau, interview, 1992). The CCG is responsible for all activities related to the following sub-groups: Marine Navigation Systems, Northern, Fleet, Marine Search and Rescue/Environment, Harbours and Ports, Pilotage, Ship Safety, and Policy, Planning and Resource Management. As of late 1993, the Search and Rescue sub-activity is amalgamated with Environmental Response/ Emergency Planning, and the Telecommunications / Electronics function no longer exists (figure 4).

Marine operations are decentralized, being administered by five regional offices across Canada. Each marine sub-activity also has its own internal structure, as illustrated by the Harbours and Ports sub-activity in figure 4. The Harbours and Ports Directorate (HPD) is located in Ottawa. It coordinates regional project proposals and finances, for three port-related activities: Program Management, Lands and Real Estate, and Port Development. The Port Development and Maintenance activity, in turn, comprises Port/Technical Development, Environmental Assessment, Economic Analysis, and Data Compilation (figure 5). The planning for port developments is undertaken by engineers;

¹⁹CCG/Marine activities accounted for 1/4 to 1/3 of Transport Canada's net total expenditures in the last decade (Canada, DOT 1992).

the actual work, however, is usually done by the Department of Public Works.²⁰

The regional structure of the Harbours and Ports group is described in figure 6. The Coast Guard maintains, administers and develops 526 maritime sites in 5 regions across Canada: Newfoundland: 59 sites; Maritimes: 199 sites; Laurentian: 78 sites; Central: 52 sites; and Western: 138 sites (Canada, DOT, H&P 1993). The three principle activities of Harbours and Ports (Port Development and Maintenance, Land/Real Estate Holdings, and Resource Administration) are under the direct authority of the Regional Director and Director General. Wharfingers and Harbour Masters, who are the local managers of harbours and ports, are responsible to this marine sub-activity.

²⁰in 1983, the DPW/Marine program was put under the jurisdiction of the CCG. The 1985 Public Harbours and Port Facilities Act stipulates that Transport Canada must use the DPW, whenever possible, to carry out maintenance and construction at public ports.

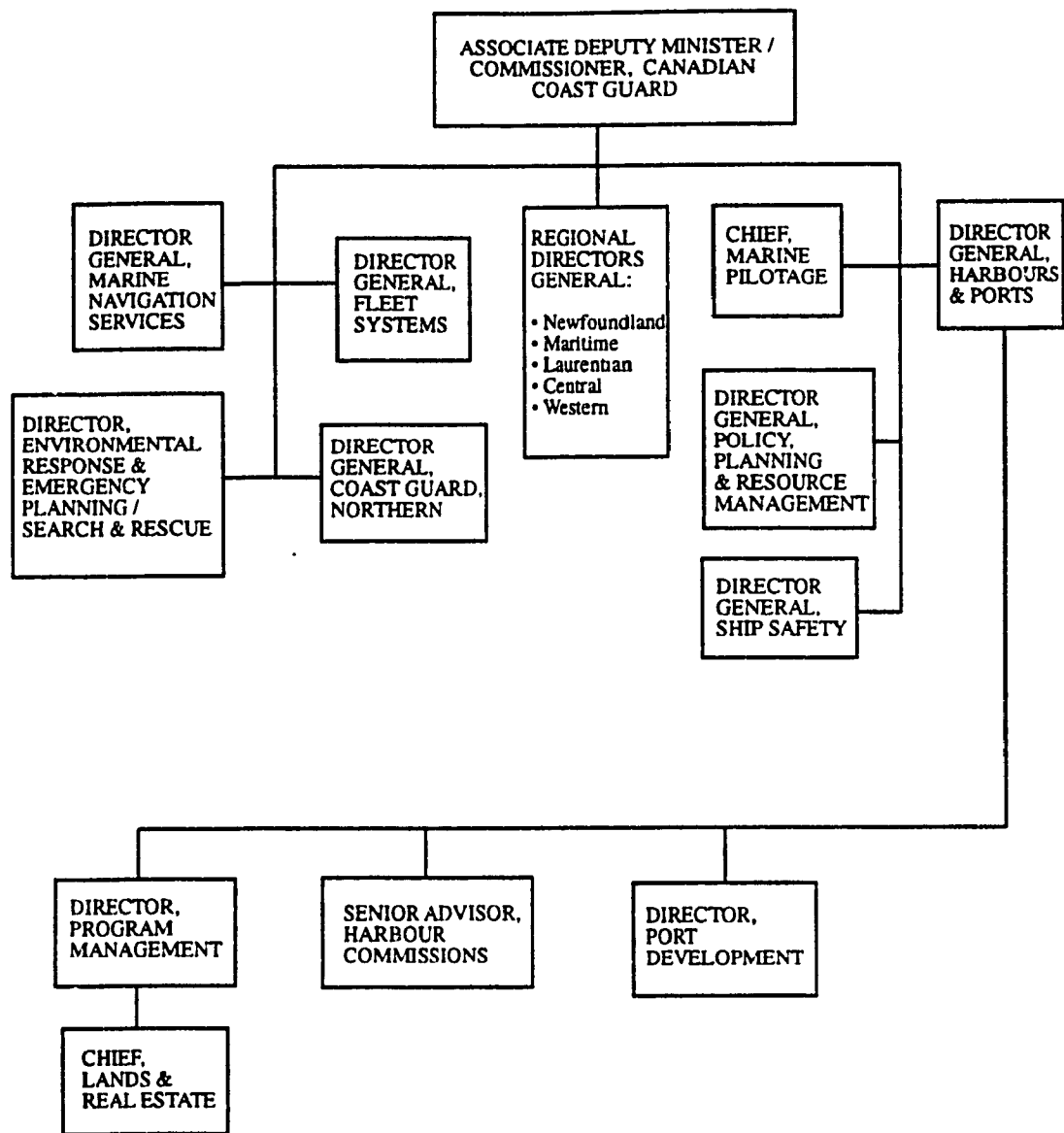


Figure 4. Coast Guard Sub-Activities / Harbours and Ports
Source: Canadian Coast Guard.

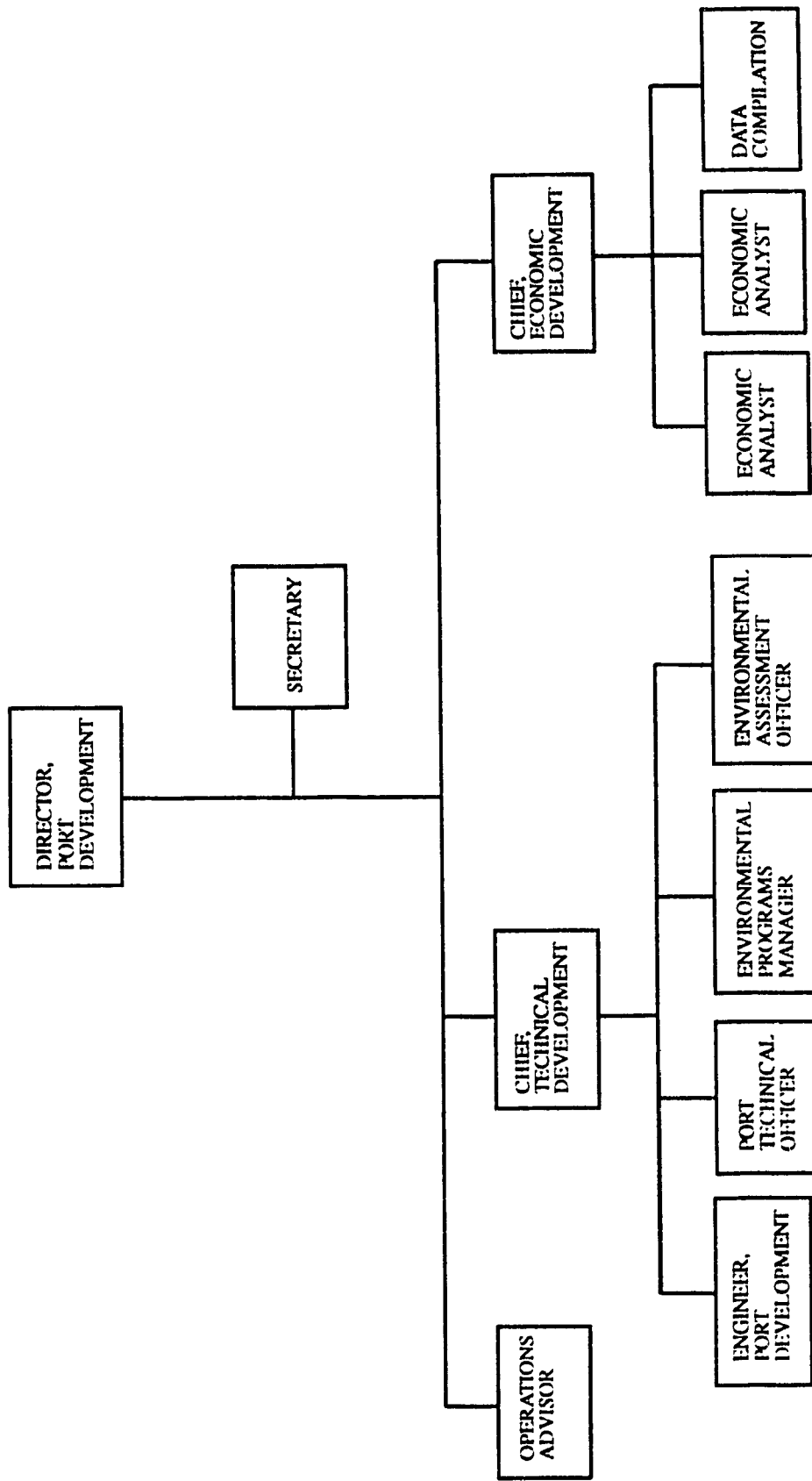


Figure 5. Harbours and Ports Directorate (Port Development)
Source: Canadian Coast Guard.

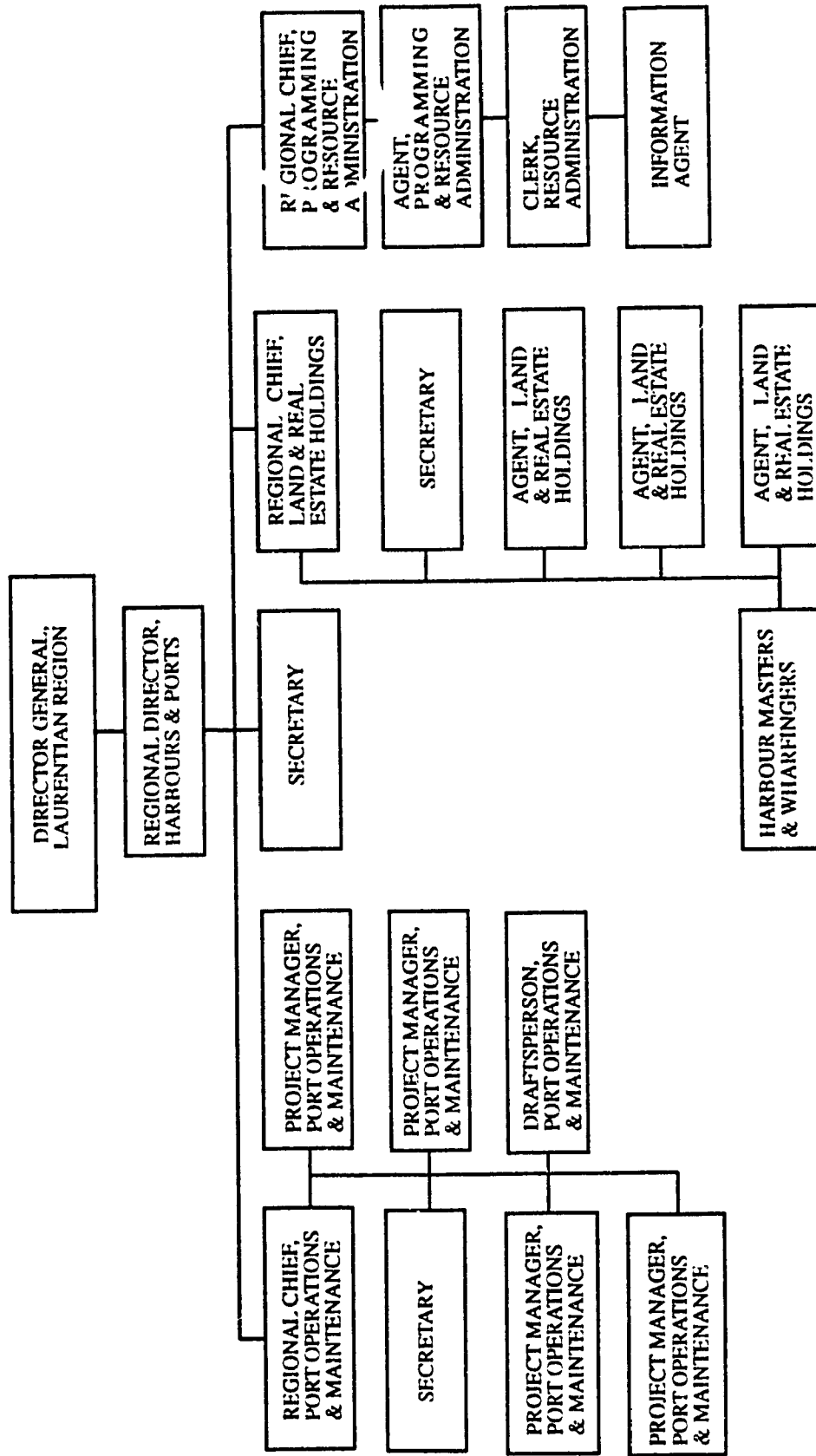


Figure 6. Laurentian Region, Harbours and Ports.
Source: Canadian Coast Guard.

3.4 Approval of Funds for Port Investments²¹

Most public ports are not financially self-sufficient. They are under federal jurisdiction, and therefore, funds for maintaining and developing them are obtained by appropriations through Parliament. Unlike Canada Ports Corporation (CPC), private and other ports, revenues from public ports (which are derived from harbour dues, wharfage, berthage, storage, licenses, leases, recoveries, etc.), are turned over to the Consolidated Revenue Fund of Canada. The Treasury Board of Canada allots an annual budget to Transport Canada (for instance, the 1993-94 budget for all sub-activities throughout Canada, including ships, was \$130 million); in addition, the Treasury Board advises the Minister of Transport on budgetary considerations. This context guides the annual financial activities of the four operating groups within Transport Canada.

Port infrastructure works are divided into two categories:

- 1) Operations and Maintenance (O&M), which includes: wharf repairs and maintenance dredging, as well as operating expenditures related to these;
- 2) Capital (i.e. new construction), which includes: major and minor construction, as well as capital dredging (Canada, DOT, H&P 1992, 36).

There are two distinct funding approval procedures: one for O&M, and another for Capital projects. In both cases, preliminary planning of projects is done one year prior to making requests for funds.

²¹budgetary details and information regarding approval procedures were obtained in an interview with Mr. P.-E. Drapeau of the Harbours and Ports Directorate in 1992.

1) O&M Projects: there are established funding ceilings for O&M projects (which tend to be less expensive than Capital works). There are usually about 700 such projects per year across Canada. The 1993-94 funding envelope was \$23 million, so that each region was allotted between \$4 million and \$7 million (or thereabouts, depending on their needs). The only priorities for O&M works are safety and emergency requirements.

The routing for funding approval of O&M projects is quite simple, and comprises 3 stages:

Stage 1: each regional branch requests preliminary approval of certain O&M projects from HPD. For projects of less than \$500 000, only a descriptive title is required; for more expensive work, the needs must be justified in writing. HPD evaluates the requests from each region, allocating preliminary approval to the most urgent;

Stage 2: HPD asks for confirmation of the lists (which can change) of funding requests from the regions;

Stage 3: after confirmation, the requests for funding are sent to the Deputy Minister of Transport. Funding is usually immediately approved, due to the often urgent nature of maintenance projects and their relatively low costs.

2) Capital Projects: the approval routing for capital investments is more complex, due primarily to the potential variety of projects. The priorities for capital works are determined by each region, and are based on traffic statistics as well as environmental and political considerations.

The ranking of investment priorities for capital projects is as follows:

1) Urgent safety/ security/ environment;

- 2) Cost saving²²/ efficiency/ revenue generation;
- 3) Restoration/ replacement - to maintain current standards and levels of service;
- 4) Expansion to meet demand - to maintain current standards and levels of service;
- 5) Improvements exceeding current standards and levels of service (refers to construction on the basis of potential traffic);
- 6) Discretionary expenditures/ other government priorities (i.e. national or local objectives, etc.) (Canada, DOT, H&P, Ranking Priority Criteria - no date).

In addition to the department's annual budget, the Harbours and Ports Directorate is allowed an annual "discretionary spending" envelope of approximately \$3 million, to be allotted to minor capital works (of less than \$500 000 each). For the majority of projects, however, funding approval follows a more complex route, depending on the funds and type of approval requested. Table 2 indicates the levels of funding and their corresponding approval authorities. For projects costing more than \$15 million, preliminary and final approval must come from the Treasury Board. Each project is approved on an individual basis, which can take more than a year, or even a number of years.

The approval routing for capital funding requests is as follows:

Stage 1 (Approval in Principle): each maritime region, on the basis of the afore-mentioned priorities, identifies certain projects requiring immediate attention. Every project must undergo a thorough analysis to determine its feasibility (see section 3.5);

²²cost recovery is currently an important priority. The 1984 Budget required that Harbours and Ports add an extra \$2 million per year, for 1985-86-87, to the Consolidated Revenue Fund (Canada, DOT, H&P 1990a, 7). Since 1986, cost recovery has officially been incorporated into the planning process; in reality, it's difficult to apply due to the many possible exceptions (see appendix a).

Stage 2 (Preliminary Approval): the requests are usually based on on-going studies of the projects identified in stage 1. The level of authorization depends on the cost of the project (table 2);

Stage 3 (Final Approval): should be based on the results of the studies started during stage 1. The project is approved or rejected (again, by the relevant authority).

Table 2

Levels of Capital Funding and Approval Authorities

AUTHORITY LEVEL	APPROVAL IN PRINCIPLE	PRELIMINARY APPROVAL	FINAL APPROVAL
Treasury Board	N/A	N/A	> \$15M
MOT	N/A	< \$15M	N/A
Deputy Minister	no limit	< \$3M	N/A
Commissioner	< \$5M	< \$3M	N/A
Director General Branch/region	< \$500 000	< \$500 000	N/A

Source: CCG, Harbours and Ports Directorate. 1992

3.5 Planning the Public Port System

With the government's new emphasis on financial restraint, and mounting criticism of a public port system in which only a small number of commercial ports handle 80% of the traffic, the MOT and HPD requested in the early 1980s that the five

maritime regions conduct comprehensive studies of the system, keeping in mind alternative modal and jurisdictional possibilities.²³ Port investments were to be based on regional, five-year, "Integrated Maritime Transportation Plans" (Master Plans), developed as a result of these studies. The primary objective was to determine which public ports would be conserved (and improved), abandoned, or transferred to other jurisdictions. This would be accomplished by establishing the "regional role" of each commercial port in the system (i.e. evaluating its import/export potential for regional products) (BBL Inc. 1982a).

Two Master Plans for the Laurentian maritime region were created during the 1980s, one for the period of 1982-86 (completed by 1984); and one for the period of 1987-91 (completed by 1989). The first plan developed long-term regional traffic scenarios (i.e. to 2000), which were also used as the basis for the second plan. The Master Plans include:

- consultations between the DOT, DPW, and CPC (regarding technical aspects);
- consultations with users, local and provincial government representatives, including the Department of Regional Industrial Expansion (DRIE), regional industrial development corporations, and large industries (regarding potential regional sources of activity);
- observed traffic over a 10-year period, including the number of ships, their types and sizes (in order to better evaluate transport needs) (BBL 1982a, 1,2).

On the basis of these consultations, Transport Canada developed "Asset

²³the CCG has said that until the 1980s, Transport Canada lacked an integrated, system-wide planning approach. Project-by-project planning was the norm.

Management Plans" (AMPs) for each port. The AMP provides a land use scheme to serve as a guide for future development, as well as an investment plan to re-organize and/or improve existing facilities to make them more efficient. The objective of these plans is the following:

To identify and quantify works needed to ensure the development of port activities according to the growth scenario retained for planning purposes.²⁴

Port Asset Management Plans must be flexible enough to allow for unforeseen traffic changes. Because the AMP is often limited by a changeable traffic situation, three investment time horizons (short-, medium-, and long-term) were developed.²⁵ These provisions were intended to allow for shifts in demand and industry needs.

The Asset Management Plan is supposed to serve only as a guide to port development. As mentioned earlier, each project must undergo a thorough analysis to determine its feasibility, prior to obtaining preliminary approval. This analysis consists of:

- 1) a profile of the installations, distance from urban centres, the port's role in the regional economy, other modes of transportation in the region, etc.;
- 2) a description of users, port activities, evolution of traffic (i.e. actual

²⁴"Le plan directeur vise à identifier, qualifier, quantifier les immobilisations et les aménagements requis pour assurer le maintien et le développement des activités portuaires selon le scénario de croissance retenu pour fins de planification." BBL 1989a, 24 (my translation).

²⁵in addition to pessimistic, realistic and optimistic long-term traffic scenarios developed in the Master Plan (see Chapter 4 for details).

- needs versus the AMP scenarios); projected traffic (not withstanding the pending infrastructure project); user (and other) needs; time frame to realize works; cost recovery possibilities, intermodal possibilities;
- 3) possible solutions: status quo, status quo with adjustments, delay of works, intermodal alternatives, other ports/installations (best solution to be retained);
 - 4) costs: engineering studies, financial analysis, possibilities for cost recovery (i.e. benefit-cost, including environmental costs);
 - 5) project management (who, what, number of person-years) (Canada, DOT, H&P, 1991-92? Lignes directrices concernant la rédaction des documents visant l'approbation préliminaire de projet. Internal document).

3.6 Summary

The structure of the Department of Transport and the Canadian Coast Guard (Harbours and Ports) reflects the typical structure of a public bureaucracy. There is specialization of tasks, vertical and horizontal integration of activities, and a clear formal chain of command which leads to the Minister of Transport. The department fulfils two functions related to its public service position: it advises the MOT and government, and its actions are, in turn, determined by them.

The approval process for capital expenditures also reflects this chain of command. Significant appropriations must be authorized by the Treasury Board and/or MOT. In 1982, a new strategic planning procedure for capital infrastructure investments was instituted by the Harbours and Ports Directorate. It set out a very rational, comprehensive process, involving the identification of needs, which were to be based on a list of ranked priorities; alternative strategies for achieving the required level of

efficiency; an assessment of the costs and benefits related to each strategy; and the choice of best solution.

CHAPTER 4

INVESTMENT DECISIONS FOR THE PORT OF GROS-CACOUNA, 1982 TO 1991

4.1 Introduction

This chapter will outline the long-range traffic scenarios developed by Transport Canada for the Bas-St-Laurent/Gaspé, a sub-region of the Laurentian maritime region. It also presents the investment proposals contained in two Asset Management Plans for Gros-Cacouna for the planning periods of 1982-86 and 1987-91. Actual and planned investments are discussed in light of the port's traffic situation since the start of its operations in 1980.

4.2 Strategic Planning in the Laurentian Maritime Region, 1982-1986

4.2.1 Planning Considerations for the Bas-St-Laurent/Gaspé

Consistent with Transport Canada's new system-wide approach to port planning, an Integrated Maritime Transportation Plan was developed for the Laurentian region, for

a 5-year period beginning in 1982. For study purposes, this extensive maritime region was sub-divided into four smaller regions²⁶ (see figure 7):

- 1) The North Shore (including the Lower-, Mid-, and Upper-North Shore sub-divisions), extending from Blanc-Sablon (near Labrador) to the Saguenay River;
- 2) The Lower-St-Lawrence (Bas-St-Laurent) and Gaspé were sub-divided into 3 regions: the Bas-St-Laurent, from Notre-Dame-du-Portage in the west to Pointe-au-Père (Rimouski); Matane was the transition point between the Bas-St-Laurent region in the west, and the Gaspé to the east; the latter extended from Les Méchins to Miguasha;
- 3) The region downstream from Québec (North and South shores of the St. Lawrence);
- 4) The region upstream from Québec (including the ports of Portneuf, Batiscan, Sorel and St-Ignace-de-Loyola) (BBL 1982a, 4).

Long-term traffic scenarios were developed for these 4 sub-regions, based on consultations with port users (see appendix c), as well as industry and government representatives. The traffic scenarios took into consideration certain regional and technical factors which might have impacts on the ports. Factors examined in relation to the Bas-St-Laurent/Gaspé included:

a) Regional factors:

Development of this region was expected to depend on two sectors of activity: extraction (peat, copper, sand and gravel); and forestry. Peat was not considered to have much growth potential. Mineral exploration, on the other hand, held some promise,

²⁶the Bas-St-Laurent and Gaspé sub-region boundaries corresponded to those established by the Québec government in 1979

although it was of a temporary nature and restricted to a few areas (BBL 1982a). Forest products, especially construction wood and newsprint, were the most important commodities handled at the public ports of the region. The main wood-handling ports were: Matane, Mont-Louis, Gaspé, Carleton, Gros-Cacouna and Rimouski (BBL 1982a).

Two prospective industrial projects were also identified for this region:

1) Liquefied Natural Gas (LNG) Terminal: natural gas would come from Melville Island, NWT, where a liquefaction terminal would be built. It would be transported to an eastern seaport, re-gasified, and sent through pipelines to markets. Port infrastructure requirements included an unloading wharf, storage tanks and re-gasification equipment. The project was officially accepted by Cabinet in 1980, assuming land at Gros-Cacouna could be acquired. However, environmental impact studies would have to be done (Québec 1982). But by 1982, there were already rumours that Trans-Canada Pipelines might sell the gas to Europe instead (Echo-Dimanche, August 1982).

2) Rexfor pulp plant: a pulpwood-transformation plant would be set up in the region. There had been a great deal of lobbying for the project, and in 1982, the company decided to locate the plant in Matane (Echo-Dimanche, August 1982).

There were also unofficial plans by Havre Champlain, the company that had given life to Gros-Cacouna, to convert the port into grain and coal terminals, at an estimated cost of \$350 million. The port would boast silos, a grain elevator, new storage spaces, wharves to accommodate ships of up to 300 000 dwt, and a rail link (Progrès-Echo, Feb., 1980). However, various factors made the realization of this project highly unlikely,²⁷ and it was therefore not considered in the scenarios developed by Transport Canada.

²⁷one factor was a lack of guarantee from the Canadian Wheat Board, of wheat shipments, due to competition from other ports such as Montréal, Sept-Îles, Trois-Rivières, and Québec. Also, U.S. coal was being shipped through the port of Québec because the harbour entry at Gros-Cacouna was too narrow. These elements resulted in a serious lack of financing for the company (Le Saint-Laurent-l'Echo, May 13, 1981)

b) Technical factors:

Transport Canada also considered the general evolution of maritime shipping, and its implications for the facilities of the Bas-St-Laurent/Gaspé. Ship size was not expected to vary significantly in the future, since the advancements in capacity had for the most part already taken place. Oil tankers had grown to an average of 200 000 dwt, since their rapid growth after the second world war. To a certain extent, larger tankers had negatively affected some of the ports of the Bas-St-Laurent, such as Matane and Rimouski (BBL 1989a, 9). However, the world oil- shipping trade was on the decline, and remained at pre-1970s levels (Frankel 1989). In Québec, this was partly due to a decrease in consumption (Slack et al 1993).

The size of dry bulk carriers, however, was on the increase, as shippers took advantage of scale economies (Gubbins 1989). As a result, the port of Sainte-Anne-des-Monts in the Gaspé no longer had an adequate depth for wood exports. Nevertheless, this increase was not expected to dramatically change the nature of the predominantly coastwise shipping in the region, since ships using those ports were consistently under 20 000 dwt (BBL 1982a).

Ship engineering and design (Roll-on/roll-off, and self-unloading equipment) were factors which might eventually have an impact on port infrastructure needs.²⁸ However, while noted by Transport Canada, these factors were not specifically planned for (BBL 1982a, 9).

²⁸Roll-on/Roll-off (Ro-Ro) ships require an unloading ramp at the port. Self-unloading ships do not require handling equipment at their ports of call.

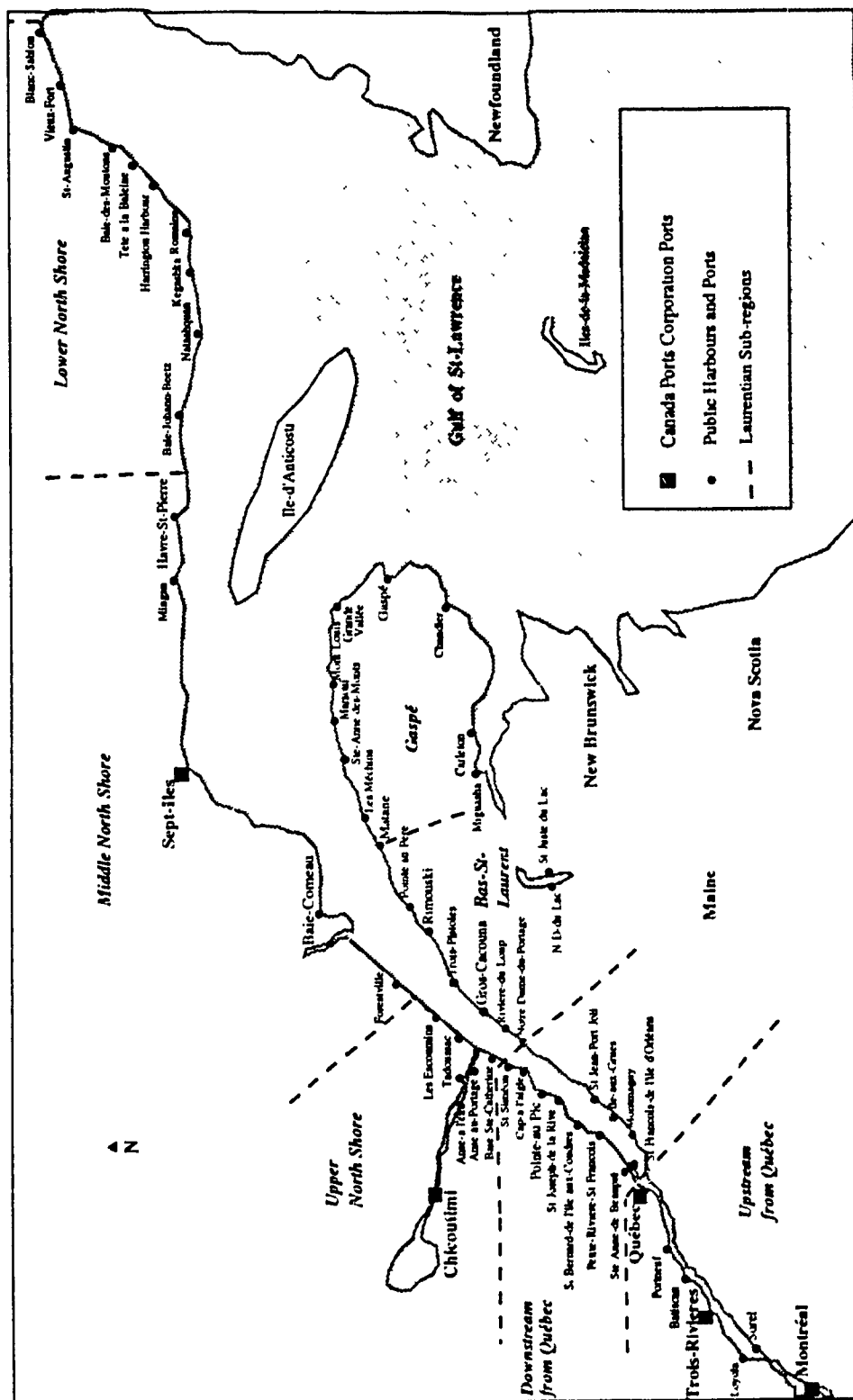


Figure 7. Public Harbours and Ports, Laurentian Region, 1982
 Source: Canadian Coast Guard, Harbours and Ports, Laurentian Region

4.2.2 Long-term Traffic Scenarios

On the basis of these considerations, Transport Canada developed the following traffic scenarios to the year 2000:²⁹

Pessimistic Scenario: predicted a decline in demand and assumed that projects taken for granted in the "realistic" scenario (see below) would not materialize; it also assumed that only "captive" traffic would remain at public ports, while other traffic would go to competing private or CPC ports. For the Bas-St-Laurent/Gaspé, this scenario predicted:

- a real decline in petroleum products;
- stability in dry bulk, general cargo and wood;³⁰

Realistic Scenario: on the basis of firm projections by present and potential users, this scenario made a conservative estimate of future traffic, based on existing infrastructure capacity or improvements already planned for in the short term. For this region, it translated into:

- a real decline in petroleum products;
- a small increase in dry bulk, general cargo and wood;

Optimistic Scenario: took into account projects with a strong probability of materializing; if all indications pointing to traffic increases materialized, this scenario assumed that necessary infrastructure improvements to accommodate the traffic would be

²⁹definitions of these scenarios are taken from BBL 1989b, 6.

³⁰please see appendix b for a description of cargo types.

made. For the Bas-St-Laurent/Gaspé, this meant:

- stability in petroleum products;
- a small increase in dry bulk, general cargo and wood (BBL 1982a, 9-14).

It is evident from these scenarios that the outlook for the region's traffic to the year 2000 was not very bright. The ports were underused at the beginning of the 1980s, and the most optimistic scenario for traffic at a majority of the region's ports was stability or decline. There might be some growth at Matane and Gros-Cacouna, due to the industrial projects mentioned earlier. Therefore, Transport Canada proposed the following rationalization of port facilities:

Gaspé: there were ten public ports in this sub-region in 1982 (see figure 7). Because of a lack of commercial activity and/or major repair requirements at some of the ports, their number would be reduced, so that only Matane, Ste-Anne-des-Monts, Mont-Louis, Gaspé, Chandler, and Carleton would be retained. The others (Miguasha, Grande-Vallée, Les Méchins, Marsoui) would be abandoned or transferred to other jurisdictions. Forest and petroleum products would be concentrated at ports where these cargoes already predominated: Matane, Mont-Louis, Gaspé and Carleton;

Bas-St-Laurent: eight public ports were located in this sub-region in 1982 (figure 7). Activities at the port of Rivière-du-Loup, including the passenger ferry, would be transferred to Gros-Cacouna (a process which was already under way). Those of Pointe-au-Père would go to Rimouski, and the remaining ports (Trois-Pistoles, Notre-Dame-du-Lac, Saint-Juste-du-Lac, Notre-Dame-du-Portage) would be transferred to other jurisdictions. Gros-Cacouna would be the main exporter in the Bas-St-Laurent, with Rimouski retaining its existing commercial traffic (pulp, construction wood and petroleum products), as well as playing an institutional role (there are oceanography and marine institutes located in Rimouski) (BBL 1982a, 18).

The long-term regional traffic scenarios in the Laurentian Master Plan were

developed in order to present a more integrated picture of the needs of the maritime transportation system. Regional and technical considerations pertinent to the Bas-St-Laurent/Gaspé also helped to identify the "regional roles" of the public ports which were to be retained by Transport Canada - specifically, their supporting function as import/export points for the region's industrial activities. Individual Asset Management Plans, such as the one developed for Gros-Cacouna and described herein, were intended to further facilitate decisions regarding both capital and maintenance infrastructure investments.

4.3 Gros-Cacouna's First Asset Management Plan (AMP), 1982-86

4.3.1 Short- and Medium-term Development Plans for the Port

When Gros-Cacouna began its operations in 1980, it was equipped to handle forest products. It had a large external area for storing wood, as well as wood-handling equipment; a 2800 square metre hangar for storing newsprint; and a wharf inside a harbour consisting of two artificial breakwaters. A depth of 10.2 metres could accommodate ships of up to 22 000 dwt. A branch of the CN rail line came to within 6.4 kilometres of the port. Because of the unlikeliness that the LNG, coal or grain terminals would materialize in the next ten years, Transport Canada decided that the port's regional role would continue to be that of forest products exporter.

Chapter 3 mentioned that individual port Asset Management Plans should be flexible enough to allow for often-changing maritime traffic situations. Therefore, on the basis of the "realistic" traffic scenario outlined in the Master Plan, short- and medium-term investment plans were developed for Gros-Cacouna. The AMP proposed the following work aimed at improving the efficiency of Gros-Cacouna:

Short-term (1982-86):

- the paving, repair and addition of external storage spaces for wood;
- an enlarged hangar for newsprint;
- a paved, more direct access route to the port (the existing one deviated too much);
- an area reserved for future passenger ferry parking (to be transferred from Rivière-du-Loup).

Medium-term (1987->): No concrete plans were formulated, but an area at the end of the existing wharf would be reserved for a possible future extension, in the event that the optimistic scenario (and thus crowding), occurred.³¹

It was therefore recommended that the \$1,250,000 required for the short-term improvements be appropriated (BBL 1982a, 32).

³¹"crowding" at Gros-Cacouna would be equivalent to 46 ships/year, by 1986, using the one existing berth (BBL 1982a, 16).

4.4 Investments at Gros-Cacouna, 1982-86³²

Table 3 illustrates the investments which were made at Gros-Cacouna between 1982 and 1986. As planned, the external storage, hangar and access route were built. In addition to these expenditures, however, the existing wharf was extended by 100 metres (resulting in two berthing spaces). Construction began in 1984 and was completed by 1986 (Canada, DOT, H&P 1984-86, and Canada, DPW 1992). The total amount spent during the short term (1982-86) was thus \$6,775,000, instead of the projected \$1,250,000.

Table 3

Proposed Versus Actual Investments, Gros-Cacouna, 1982-86

PROPOSED WORK, 1982-86	ACTUAL WORK, 1982-86
external storage	external storage
hangar	hangar
access route	access route
	wharf extension, 100 m.
PROPOSED COST: \$1,250,000.	ACTUAL COST: \$6,775,000.

Source: Canada, DOT 1982-86 and Canada, DOT, H&P 1984-86.

³²expenditure details are taken from "Details of major capital projects, Marine/CCG", in Canada, DOT, 1982-86. Estimates. Part 3: Expenditure Plan; and Canada, DPW 1992.

4.4.1 The Plan de l'Est

The Asset Management Plan had recommended that Gros-Cacouna's wharf be extended only in the event that the port show evidence of becoming crowded by 1986. However, funds had been earmarked for Gros-Cacouna under the 1983-88 Economic Development Plan for the Lower-St-Lawrence/Gaspé, or informally, the "Plan de l'est" (part of a federal-provincial agreement). Under the transportation sub-agreement, \$6.5 million were to be spent on the port's access route and wharf extension (Canada, FEDC 1985, and ENAP 1987).

A key signatory to the agreement was Québec's Office de planification et de développement du Québec (OPDQ). With a second berth at Gros-Cacouna, the OPDQ hoped to promote the region's commercial ties with New Brunswick. Effective approval for Gros-Cacouna's new access route, and preliminary approval for the wharf extension, were requested by Transport Canada in 1983. These were granted in 1983 and 1984, respectively (Canada, DOT, H&P 1983a). Construction on the wharf began in 1984 even though, as the following section reveals, traffic numbers did not warrant it.

4.5 Traffic Situation at Gros-Cacouna, 1980-86

In the first two years of its existence, the port's traffic grew quickly (see table 4). During this period, Gros-Cacouna handled forest products bound for international

markets. In 1980, almost 9000 tons of newsprint were exported to Europe by F.F. Soucy (a company owned by Rexfor, the provincial Crown corporation), whose local wood sources were Rimouski and La Pocatière. This company had previously shipped its products through the port of Rivière-du-Loup; slowly, however, commercial traffic was shifting to Gros-Cacouna, partly because of the high cost of dredging Rivière-du-Loup, and also due to the low storage rates offered by the new port³³ (BBL 1989a, 35). In 1981, Irving Forest Products exported more than 45 000 tons of construction wood logged from the Abitibi region, through the port of Gros-Cacouna to England.

In 1982, approximately 65 000 tons each of newsprint and construction wood were handled (31 ships). By 1983, wood exports had doubled, and surpassed newsprint by a ratio of 2:1 (with 41 ship dockings). Both 1984 and 1985 were particularly slow years for the facility (27 and 16 ships, respectively), as well as for the entire region (BBL 1989a, 6). Then in 1986, fifty-two ships used the port, primarily for construction wood exports, although newsprint traffic had somewhat recovered. The port was not crowded, however, since the second berth was now operational (i.e. only 26 ships would have used each space).

³³until very recently, Gros-Cacouna offered lower storage rates than other ports (based on monthly rates, unlike daily rates set by Matane, etc.). The explanation forthcoming from Transport Canada (CCG, H&P, Laurentian region, phone interview, 1993) is that harbour masters had misinterpreted the rate law. Gros-Cacouna's rates are now similar to others.

Table 4

Traffic by Cargo Type and Number of Ships, Gros-Cacouna, 1980-86

YEAR	TONS*	NEWSPRINT	CONSTRUCTION WOOD	GENERAL CARGO	# OF SHIPS
1980	10 509	8591	1918	0	3
1981	98 216	51 432	46 544	240	21
1982	130 769	65 501	64 203	1065	31
1983	158 404	50 497	107 622	285	41
1984	95 497	29 774	57 781	7942	27
1985	44 835	5 826	28 923	10 086	16
1986	158 993	39 235	109 370	10 640	52

Source: Canadian Coast Guard, Harbours and Ports (Laurentian Region)

* traffic volume is measured in metric tons

By 1986, 90% of Gros-Cacouna's traffic consisted of construction wood, with newsprint representing a steady 6-7% of the total. There was an increase in general cargo (comprising mostly salt, until 1986, after which 50% comprised cardboard and peat). The main exporters at this time were:

- 1) F.F. Soucy: located in Rivière-du-Loup, it exported newsprint through Gros-Cacouna to England. However, most of this company's newsprint left the port by train or truck, destined for the U.S. (with about 2% for the Québec market);
- 2) Irving Forest Products: construction wood came to the port from Abitibi, and was exported primarily to England;
- 3) Matériaux Blanchet: located just south of Montmagny, near the U.S. border, most of its wood came from Maine, with 1/3 from Abitibi. The company's wood went mainly to Europe, but also to North Africa and the Middle East;

4) Noranda Forest Sales: a buyer and shipper of construction wood from various companies. Much of its wood was from the region, with some coming from Abitibi. Exports went to England, and also to Egypt (BBL 1982a, 1982b).

Many of these companies began to use the port of Gros-Cacouna during the 1980s because of labour problems at the port of Québec, which had resulted in increased port costs. As mentioned earlier, Gros-Cacouna also offered low storage rates. The new port's growing wood traffic did not only occur as a result of the transfer of Québec's traffic, however; it also grew to the detriment of the port of Matane. With the announcement of the wharf extension, sawmills which had previously used Matane, but which were located closer to Gros-Cacouna, began to sell their construction wood to exporters using the new port (BBL 1989a). By 1987, only coastwise pulpwood (approximately 100 000 tons) continued to be exported through Matane (see table 5). All of its international shipments had ceased.³⁴ By 1985, the port of Rimouski had also lost much of its construction wood traffic to Gros-Cacouna.

³⁴Matane's misfortunes did not only stem from Gros-Cacouna's growth. Its decline was also due to poor local wood production from 1982-85. In addition, Rexfor had bought up many local sawmills, then proceeded to export wood and wood chips primarily to the U.S. (by truck or train) (BBL 1989a, 1989c).

Table 5

Traffic by Cargo Type and Number of Ships, Matane, 1982-86

YEAR	TONS	CONST. WOOD	LIQUID BULK	GENERAL CARGO	WOOD CHIPS	WOOD PULP	# OF SHIPS
1982	229 722	79 650	17 077	30 978	0	102 017	73
1983	186 903	34 014	18 177	7 131	8214	119 367	53
1984	156 754	156 754	2825	27 618	21 899	88 739	36
1985	118 204	118 204	2785	21 005	3360	89 813	33
1986	116 102	0	0	16 135	17 302	82 665	15

Source: Canadian Coast Guard, Harbours and Ports (Laurentian Region)

4.6 Evolution of Maritime Traffic in the Laurentian Region, 1982-86

The 1980s witnessed a change in the geographic concentration of certain commodities in the Laurentian region: by 1987, 93% of the region's overseas wood exports were being handled at Gros-Cacouna; 60% of the region's paper exports went through Baie-Comeau; and 64% of all petroleum products were at Rimouski (BBL 1989a). With the rationalization of facilities in 1982, only six public ports, each handling over 100 000 tons, now generated 85% of the total traffic. These were Gros-Cacouna, Rimouski, Matane, Mont-Louis, Gaspé and Baie-Comeau (BBL 1989a, 8).

It must be noted that, while important systemic changes had occurred, overall

traffic in the Laurentian region remained at much the same level as in 1982: 1.6 to 1.8 million tons (Canada, DOT, H&P 1982-86). The only ports which had experienced growth since 1982 were Gros-Cacouna (wood), Mont-Louis (mineral concentrate and bunker), and Gaspé (mineral concentrate). Contrary to what Transport Canada had hoped for during the 1982-86 period, Rimouski and Matane were in decline.

The improvements made to Gros-Cacouna's infrastructure, and in particular the addition of another berth, had succeeded in diverting traffic from other ports in the Bas-St-Laurent/Gaspé region. Matane (which, according to the Master Plan, was to be retained as an important forest products port in the Gaspé) had been particularly affected by its new wood-exporting rival located in the Bas-St-Laurent.

4.6.1 Evolution of Forest Products Traffic in the Laurentian Region

Forest products have always been one of the most important commodities handled at the public ports of the Laurentian region. In 1987, newsprint and construction wood each accounted for 15% of public port trade in the Laurentian region. This represents 20% of the region's total newsprint traffic (i.e. including Canada Ports Corporation and other port trade), and 40% of its total construction wood traffic (BBL 1989a, 8). Along with iron ore, aluminum and oil, forest products represent an important economic resource for the region's industries (Laserre 1988).

Statistics show, however, that from 1982-87, this sector (especially construction

wood) experienced strong fluctuations, with annual exports declining by an average of 5-10%, to as much as 20% in 1985 (BBL 1989a, 6). These data mirror the situation in the rest of Québec: of nineteen ports which handled forest products in 1989, only five experienced any growth in their traffic since 1980. The six ports whose forest products traffic ceased altogether are located on the south shore of the St. Lawrence, where trucking competes with maritime shipping (Slack et al 1993).

To a certain extent, the decline in forest products exports in the early 1980s was due to the recession. However, the outlook for maritime trade in this commodity is not very promising. Frankel (1989) suggests that of the five cargo types (forest products, dry bulk, liquid bulk, grain and general cargo), only dry bulk and general cargo trades will grow in the future. There is mounting evidence that the forest products sector is in decline. In their study of the industry in Canada, Woodbridge et al (1988) have concluded that the restructuring of the industry, a lack of sufficient reforestation, and public pressures for recycled paper products will have taken their toll on most forest products by the early 21st century.

Canada is not a main consumer of its forest products. While it is one of the world's three main producers of softwood lumber, wood pulp and newsprint, Canadian consumption of these products accounts for only approximately 5% (Waggener 1990). This reliance on external markets has meant that the Canadian forest products sector must accede to foreign regulations regarding these products. In terms of newsprint, the U.S. now demands recycled content; European countries are beginning to demand unbleached wood pulp and less packaging; and Canada has also become stricter with

regards to effluents from pulp and paper mills (Saint-Pierre 1993, 7-8).

There has been a dramatic increase in public awareness in Canada about the limited capacity of this renewable resource. Many provincial governments (including Québec's) have been disallowing forestry concessions, to try to promote a more conservative use of their forests (Hayter 1987, and BBL 1989a). Demand for raw resources is thus bound to decline, in favour of recycled and alternative products; in so doing, it will have negative repercussions on the activities of Québec's industries, as well as its wood-handling ports.

4.7 Strategic Planning in the Laurentian Maritime Region, 1987-91

4.7.1 Planning Considerations for the Bas-St-Laurent³⁵

To some extent, the Laurentian region's 1987-91 Master Plan took into account the poor situation of forest products exports, and the decline in Canadian maritime trade in general during the first half of the decade. The planning considerations developed in the first Master Plan (1982-86) were retained for the second. Two industrial projects were seen to be very promising for the near future, based on new consultations with users and regional representatives (see appendix d). These included:

³⁵in 1987, Transport Canada re-organized the Laurentian sub-divisions. They are much the same as in 1982, except that the Bas-St-Laurent region is now slightly larger, encompassing Matane (see figure 8). This re-organization reflects the province's new regional boundaries, established in 1987.

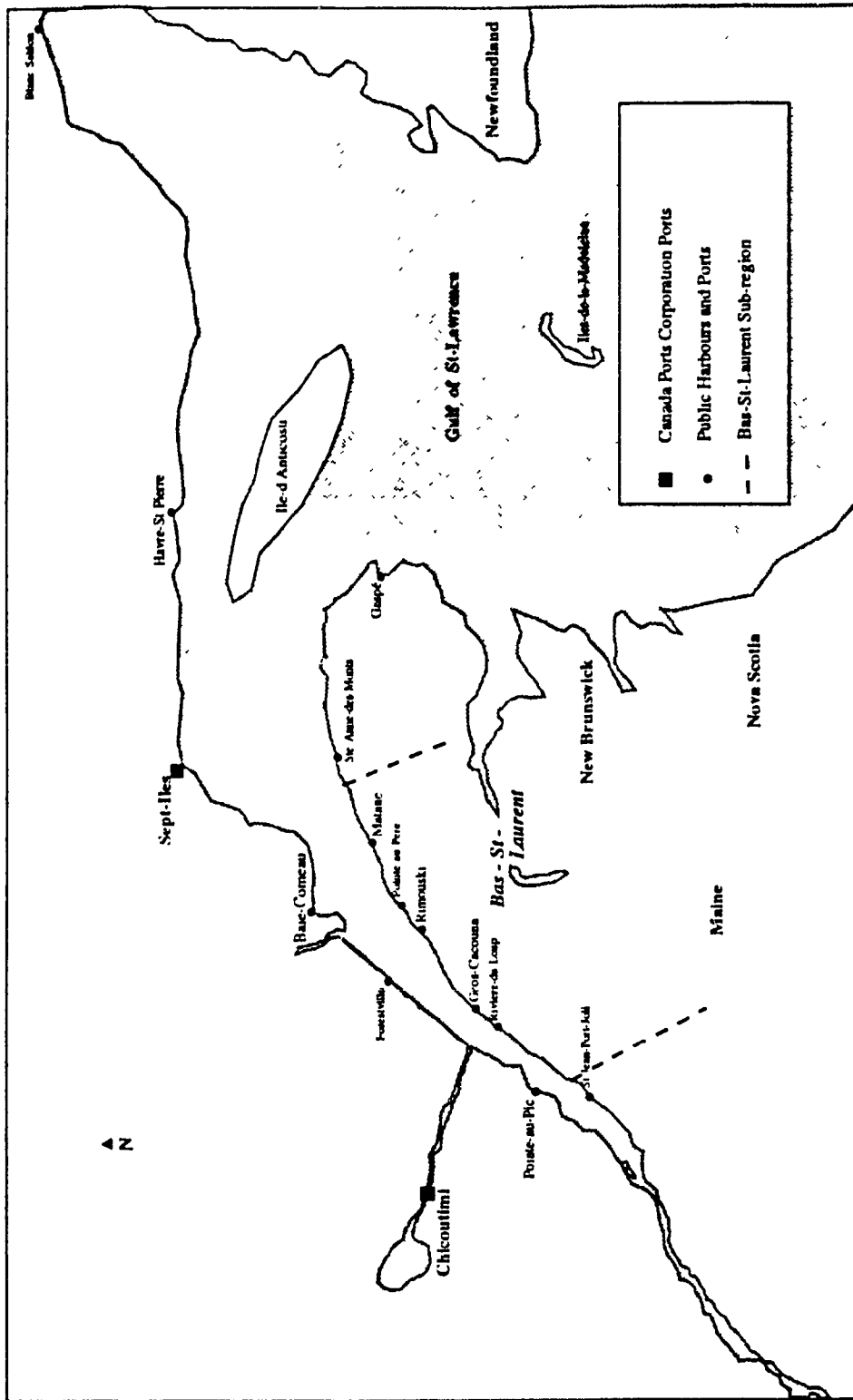


Figure 8. Public Harbours and Ports, Laurentian Region, 1987
Source: Canadian Coast Guard, Harbours and Ports, Laurentian Region

1) Miron's cement-making plant, to be built at the port of Gros-Cacouna in 1989. Miron would import clinker³⁶ from Europe for grinding into cement at the port. The cement would be sent overland to New Brunswick, the U.S., Gaspé and eastern Québec, and the North Shore. The 66 000 tons of clinker projected for 1989 would initially be imported on 20 000 dwt ships. Eventually, the company wished to use ships of 30 000 to 35 000 dwt, requiring a berthing depth of 12 metres. Future annual clinker imports were expected to be of 150 000 tons;

2) Donohue (Rexfor) pulp-making plant. The company had chosen to build its new plant near the port of Matane, and would begin exports in 1990;

There was also talk of a new silicon quarry at St-Vianney in 1988, with exports through the port of Matane, although this project was not guaranteed (BBL 1989a, 1989c).

4.7.2 Long-term Traffic Scenarios

The long-term traffic scenarios developed for the Laurentian region in 1982 were applied to the second planning period. Essentially, the types and proportions of traffic handled at the public ports of the Laurentian region remained the same. Petroleum products made up 31% of the region's total in 1987, and were therefore the most important; newsprint and construction wood each represented 15%; road salt made up 5% of the total traffic; general cargo, 35%. There continued to be strong variations in salt and construction wood (BBL 1989a, 8,9). Transport Canada expected that petroleum products, salt and newsprint would remain stable, with only little growth to

³⁶this material, when mixed with rock, forms cement

the turn of the century. On the other hand, construction wood and wood chips (especially from the Abitibi region), local silicon, and clinker (for cement production) would show some growth.³⁷ While trade in the Laurentian region remained at the same level as in 1982 (approximately 1.6 million tons), forecast traffic for 1992 was 2.9 million tons. For 1997, it was 5.5 million tons (BBL 1989a, 10).

Due to the concentration of traffic at only a few ports in the Bas-St-Laurent, and with the only promising industrial projects being those of Miron and Donohue, Transport Canada decided to limit capital investments to Gros-Cacouna and Matane.

4.8 Gros-Cacouna's Second Asset Management Plan, 1987-91

4.8.1 Short- and Medium-term Development Plans for the Port

Transport Canada had decided that Gros-Cacouna would be Québec's main wood exporting port in the future. It would continue to diversify with clinker imports, as well as with some general cargo exports. Traffic at Gros-Cacouna, which was at approximately 215 000 tons in 1987, was expected to reach 593 000 tons by 1992 (144 ships), and 954 000 tons by 1997. By 2002, it would be 1.3 million tons (BBL 1989a, 31).

As a result of the work done in the 1982-86 planning period, Gros-Cacouna's

³⁷based on consultations with port users in 1989.

infrastructure now consisted of 70 000 square metres of external, and 2800 square metres of internal, storage space. There were two berths, each 10.2 metres deep. The occupancy rate of these two berths in 1987-88 was 24% (equivalent to 4-7 ships per month, each in harbour for 2.5 - 3 days). There was thus no immediate congestion problem (BBL 1989a, and Canadian Transportation and Distribution Management 1987).

However, the harbour entry was still narrow, with strong transverse currents and a short stopping distance. Two pilots were required to guide each ship, which could be no larger than 25 000 dwt.³⁸ Transport Canada considered the entry to be potentially dangerous, possibly resulting in collisions; furthermore, the short stopping distance meant that ships might have to wait to be loaded or unloaded, which would incur costs.³⁹ Since Miron planned to establish its plant at the port, widening the entry would also permit its 35 000 dwt ship to enter. Estimates of waiting periods, as well as requests by other port users for a wider entry, however, were based on the assumption that Miron's activities would result in congestion at the port (Canada 1989, 1989b).

The 1987 Asset Management Plan for Gros-Cacouna proposed short-, medium- and long-term investments, based on a combination of scenarios: realistic, for the short term, and optimistic, for the medium- to long-term. Expenditures were to be the

³⁸the harbour had been narrow from the beginning of Gros-Cacouna's operations, but pilots had learned to better manoeuvre their ships. Thus, ships of up to 27 000 dwt could now enter the port (CCG, H&P, Laurentian region, phone interview, 1994).

³⁹Transport Canada estimated the costs incurred by waiting to be \$8500/day, per ship (BBL 1989d, 1-39).

following:⁴⁰

Short-term (1987-91):

- improve port access via the harbour entry for the safety of present traffic, as well as for Miron's ship (\$4.5 million);
- a detour road would be needed so as to keep Miron's activities separate from the wood at the port;
- an additional 2800 sq.m. internal storage, for F.F. Soucy, as well as for other users;
- an additional 18 600 sq.m. of external storage would be needed for increased wood traffic of present exporters;
- another 180 m. berth would be required (to equal 3, in total);

Total projected cost: \$15.8 million;

Medium-term (1992-97):

- add a new rail link to the port, on the Québec-Matane CN line, for Abitibi wood-exporting companies.⁴¹ This would include a viaduct under Route 20, as well as a tunnel under Route 132;
- add 2800 sq.m. internal storage for projected increases in general cargo and newsprint;
- add another 280 m. wharf for wood which would arrive by rail;
- add 43 500 sq.m. more external storage space;
- move Miron's access road, so as not to interfere with wood arriving by rail;

Total projected cost: \$45 million (a second alternative, without the new wharf or rail link, was also considered, for a total cost of \$4 million);

⁴⁰the combination of scenarios is based on Transport Canada's assumption that in the short term (to 1991), Miron would have begun operations; by 1992, with a wider harbour, Miron's activities would result in a 53% increase in the port's occupation rate (BBL 1989d, 1-17).

⁴¹the 1992-97 projected wood traffic increases pre-suppose construction of this rail link (BBL 1989d, 1-21).

Long-term (1997-2002):

- more rail infrastructure, as well as more internal and external storage, would have to be added due to increased traffic;

Total projected cost: \$4 million (if the second alternative for 1992-97 was chosen, then the 1997-2002 plans would cost \$11.5 million (BBL 1989d, 1-36).

4.9 Investments at Gros-Cacouna, 1987-91

Between the date of completion of the wharf extension (1986) and 1991, minor modifications were made to the lighting and the storage circulation area (thereby increasing the external storage capacity by 30 000 sq.m., to a total of 100 000 sq.m.); and a new harbour master's office was built. The total cost was \$1.3 million (Canada, DPW 1992). The enlargement of the harbour entry was approved in principle in November 1988; the justification was a potential increase in traffic, and the safety of existing, and potentially larger, vessels (Canada, DOT, H&P 1991a, 4).

However, no improvements were made to accommodate Miron's traffic. The Treasury Board of Canada refused to grant approval for the funds requested. Meanwhile, complications involving environmental considerations (as described in the following section) resulted in a suspension of the cement-making activities at the port.

4.9.1 Environmental Considerations Related to Miron's Activities

Federal government departments are now expected to take into consideration the environmental impacts of their operations. In 1987, Transport Canada acknowledged that final decisions for the development of Gros-Cacouna (specifically, the establishment of Miron's plant) would have to incorporate a federal Environmental Impact Assessment (EIA), because of the environmentally sensitive location of the port, on Ile-du-Gros-Cacouna (BBL 1989d, 1-24). A preliminary environmental impact report was prepared by two consulting firms in March 1991, based on a 1989 study by Québec's environment department.⁴² In terms of environmental effects, two aspects were of concern: the feeding and nesting grounds of certain types of migrating birds; and the area's impact on the local ecosystem in general. One zone in particular (which bred the organisms essential to migratory waterfowl) was recognized as being extremely sensitive; however, the report suggested that this zone be replaced, "if financially feasible" (p. 84), with another area of equal size, further from the Miron site.

Briefly, the conclusions of this preliminary study (which examined 6 options being considered by the DPW) were:

- that the widening of the harbour was necessary. This was the preferred option of the DPW, pilots, and port users;
- apart from enlarging the harbour, 2 new berths, a Ro-Ro ramp, a berth

⁴²the report is called Réaménagement du port de Saint-Georges de Cacouna (Le Groupe LMB, and Le Groupe Leblond, Tremblay, Bouchard, 1991). The elements of this report were available from Environnement Québec since 1989, and were even discussed in the AMP.

for tugs, and dredging of the harbour basin would be required. The port's installations would thus be sufficient until 2005; total investment would be \$64.2 million (this is similar to what Transport Canada had estimated in 1987, although certain elements differed, such as the Ro-Ro ramp and tug berth).

Ultimately, the report argued that the potential regional benefits of Gros-Cacouna's development were too important to be undermined by environmental considerations (it also suggested, however, that an economic impact study be done to determine what the exact benefits of such an investment would be). The authors recommended that an Environmental Impact Assessment (EIA), as well as consultations with the Canadian Wildlife Service and Ducks Unlimited, be undertaken (p. 83).

It must be noted that the question of noise pollution resulting from Miron's very loud clinker-grinding activities, never came up. It has not been confirmed whether an actual EIA was done following the preliminary report of 1991. However, cement-making at the plant lasted just over one year, from late 1990 to early 1992. The noise level, along with other environmental concerns, forced operations to shut down. As table 6 shows, these circumstances had a negative impact on traffic at the port of Gros-Cacouna.

4.10 Traffic Situation at Gros-Cacouna, 1987-92

In 1987, Gros-Cacouna's traffic was 227 000 tons. It consisted primarily of construction wood, followed by newsprint, as well as some salt (6700 tons), and some

general cargo (see table 6). By 1992, traffic had doubled, but had not reached the 600 000 ton mark which had been predicted in 1987.⁴¹ This is primarily due to the fact that Miron's cement-making activities were so short-lived. At present, the company receives pre-mixed cement from Québec City by truck, which it expedites (again, by truck) to eastern parts of the province and New Brunswick.

Table 6
Traffic by Cargo Type and Number of Ships, Gros-Cacouna, 1987-92

YEAR	TONS	NEWSPRINT	CONSTRUCTION WOOD	GENERAL CARGO*	# OF SHIPS
1987	227 684	33 045	186 625	8014	57
1988	296 718	33 234	250 845	12 639	75
1989	412 642	40 108	319 491	53 043	90
1990	592 777	35 682	502 207	54 888	106
1991	514 835	53 783	387 749	73 303	93
1992	485 868	41 832	369 887	74 149	92

Source: Canadian Coast Guard

* General cargo = peat exports, and salt and clinker imports

The major exporters shipping through the port in 1992 (and at present) remained much the same as in 1982:

- 1) Matériaux Blanchet (the largest): most of its wood comes from Maine, with 1/3 from Abitibi. Ninety percent of its shipments go through Gros-Cacouna, with 10% through the port of Québec. Its wood goes mainly to Europe, but also to North Africa and the Middle

⁴¹traffic at the port almost reached predicted figures in 1990, although Miron imported only half of what it had originally intended.

East. It recently increased its exports of Maine-produced construction wood;

- 2) Noranda Forest Sales: much of its wood comes from the region, with some from Abitibi. Exports are to England as well as to Egypt. It also uses the ports of Bécancour and Pointe-au-Pic, which are located close to some sawmills. This company has increased its shipments of Abitibi wood through the port of Gros-Cacouna;
- 3) Irving Forest Products: construction wood comes from Abitibi, and is exported to England and Egypt. The company also ships wood through the port of St-John, New Brunswick;
- 4) Shipments by these three construction wood companies represent 95% (180 000 tons) of the total wood exports, or 82% of the total port traffic. Four or five other small wood-exporting companies' total shipments through Gros-Cacouna represent 5% of the total wood traffic;
- 5) The only newsprint company exporting through Gros-Cacouna continues to be F.F. Soucy. This company expects to continue to export an average of 40 000 tons to 1997 (to a maximum of 50 000 tons) to England;
- 6) Papier Cascades occasionally exports cardboard overseas (2-3 times/year, for a total of 3500 tons), from its plant in Cabano. Usually it exports through St-John, New Brunswick (BBL 1989a, 1989c, and interview with harbour master, 1992).

4.11 Evolution of Maritime Traffic in the Laurentian Region, 1987-92

Although few of the improvements planned for the port had been made, Transport Canada's traffic predictions for the port of Gros-Cacouna were realized. This is primarily due to the increased activities of its major exporters, who shipped more

construction wood from Abitibi, Maine and New Brunswick, through the port.⁴⁴

Trade throughout the entire Laurentian region, however, fell far short of Transport Canada's projections. It remained at a steady 1.6 - 1.8 million tons throughout the decade, never reaching the expected 2.9 million tons.

4.12 Summary

The shifts in traffic between major ports, as well as the lack of growth in forest products exports in the Bas-St-Laurent region during the 1980s, indicates a lack of foresight on the part of planners who are supposedly experts in the field of maritime transportation. The traffic increases at Gros-Cacouna depended largely on the fact that it was virtually the only public port handling forest products by the late 1980s. The disregard for environmental considerations in the planning of investments for Miron's cement-making plant illustrates inflexibility in the planning process. As the next chapter shows, this is only one example of how the Asset Management Plans, which were intended to allow for changing traffic scenarios, were actually very rigid planning tools.

Why did Transport Canada proceed in a manner which seemed counter to the very rational planning methodology it had set out in the early 1980s? This chapter has

⁴⁴in fact, Gros-Cacouna accounted for almost all of the forest products traffic at Laurentian public ports (approx. 600 000 tons/year) throughout the second half of the 1980s. Wood traffic at many other public ports has declined (Canada, DOT, H&P 1986-92, and Slack et al 1992a).

suggested that other planning directives exerted a strong influence on the department's ability to fully exercise its planning responsibility. These factors are discussed in greater detail in the following chapter.

CHAPTER 5
AN ANALYSIS OF INVESTMENT DECISIONS
FOR THE PORT OF GROS-CACOUNA

5.1 Introduction

In view of the changing outlook for the Bas-St-Laurent/Gaspé region's maritime traffic and industrial activity between 1982 and 1991, actual and planned investments at Gros-Cacouna during this time raise certain questions about the decision-making process at Transport Canada. This chapter addresses specific capital investment plans, among them the wharf extension in 1984, and the expansion for Miron's activities in 1989. It examines the underlying basis of these and other decisions regarding the port.

5.2 1982-86 Capital Investment Plans

The long-term traffic scenarios developed by Transport Canada in the 1982-86 Integrated Maritime Transportation Plan for the Bas-St-Laurent/Gaspé had predicted very little growth in trade for most of the region's public ports, with the possible exceptions of Gros-Cacouna and Matane. Gros-Cacouna's Asset Management Plan

recommended a few modifications to the port (see Chapter 4), including an extension of the wharf in the long term, if traffic (i.e. number of ships) warranted. What the AMP did not consider was that the wharf extension was a *fait accompli* by the time the plan was drawn up in 1984.

On May 5, 1983, a \$265 million Economic Development Plan for the Lower-St-Lawrence/Gaspé (informally known as the "Plan de l'est") was approved by Cabinet, as part of a federal-provincial Economic and Regional Development Agreement (ERDA), to be effective from 1983 to 1988.⁴⁵ The Plan de l'est encompassed eight sectors of activity, one of which was transportation. The \$40.5 million available from this envelope would be used to finance various projects identified by the Plan. One of these was the Laurentian region's Integrated Maritime Transportation Plan of 1982. Other projects included capital works at the ports of Gros-Cacouna, Matane and Rimouski. Under the Plan de l'est, \$6.5 million were earmarked for Gros-Cacouna to 1988 (pending either preliminary or final approval), for the following:

- a) a new access route to the port, for F.F. Soucy and other users. This would lower their trucking costs. Final approval was requested in July, 1983;
- b) an extra 100 m. of berthing space, requiring an extension of the existing wharf. This would prevent crowding in the harbour, as it was expected that a new user (not specified) would soon use the port. Preliminary approval was requested in July, 1983 (Canada, DOT, H&P 1983a).

⁴⁵the ERDA was signed on Dec. 14, 1984, by the federal government (Minister of Regional Industrial Expansion), and provincial governments (including Québec's Office de planification et de développement du Québec, or OPDQ).

Although Gros-Cacouna's Asset Management Plan was only completed in 1984, preliminary approval had been given in August 1983 for estimates and drawings regarding the wharf extension. The exact date of final approval of the project has not been disclosed. However, by the time the work had begun in 1985, Gros-Cacouna had already experienced one bad traffic year. Plans for an extension of the wharf at such an early stage in the planning process suggest that development goals guiding the first Asset Management Plan conflicted with Transport Canada's priorities, with respect to a number of issues.

Since the OPDQ was financing the Master Plan (\$200 000), as well as possibly a part of the actual work on the port,⁴⁶ it had some say as to how Transport Canada administered the funds. The goal of this provincial agency (which no longer exists) was to promote the development of Québec's regions. Normally, the OPDQ only supported port projects related to tourism activities. When the Plan de l'est was outlined in the early 1980s, however, the port of Gros-Cacouna seemed to represent an important potential link in the province's trade with New Brunswick (i.e. wood and other exports). Because the OPDQ was funding the Master Plan, it seized the opportunity to promote Gros-Cacouna's commercial traffic (Patrice Ouellet, BFDR-Q, phone interview, 1992).

In terms of the department's stated criteria for capital investments, regional and local development (included under "discretionary expenditures") are last on the list of

⁴⁶most of the funds for the projects were to be taken from a reduction in subsidy payments under the Maritime Freight Act and the Atlantic Region Freight Assistance Act; if that was not sufficient, the \$19 million in the Plan de l'est which was still to be allotted to specific projects would be used (Canada, DOT, H&P 1983a)

Transport Canada's priorities. Safety and cost-efficiency are first (see Chapter 3). In-depth studies to determine the benefits and costs of all proposed capital expenditures, along with the identification of every public port's regional role, were supposed to provide the basis for Asset Management Plans developed for each maritime region. Preliminary and final approval would hinge on the results of these studies. In the case of Gros-Cacouna, however, this analysis was never done.⁴⁷ The brief time delay between preliminary and final approval of the wharf extension suggests that such a study would not have been very detailed. Apart from engineering reports and brief project profiles (included in all funding approval submissions), there seems to have been little attempt to identify the port's role in relation to the economy and the other major ports of the Bas-St-Laurent. Justification for the project was primarily based on potential traffic increases, and the fact that it was included in the Plan de l'est (Canada, DOT, H&P 1983a).

The addition of a second berth at Gros-Cacouna conflicted with Transport Canada's objectives with respect to another investment criterion: no development of infrastructure on the basis of potential traffic. Yet this is exactly what occurred at Gros-Cacouna. An evaluation of the Plan de l'est, published in 1987 by l'Ecole nationale d'administration publique (ENAP), questions the validity of developing the port on the basis of potential, short-term regional economic impacts, which are seen to be a very unreliable indicator of long-term growth. Yochum and Agarwal (1988) warn of interpreting the outcome (i.e. impacts) of such investments, since it is very difficult to

⁴⁷an official of the Laurentian CCG admitted that the reality of the planning process is that these studies are almost never done, due to their expense and the time required.

differentiate between "port-attracted" developments, and "port-induced" developments. Shifts in the Bas-St-Laurent's maritime trade (specifically, wood cargoes) during the first planning period seem to indicate that the increased traffic at Gros-Cacouna is an example of "port-attracted" development, if it can be called development at all.

These traffic shifts bring us to a third area of conflict between the actions of Transport Canada planners and the department's stated conditions for investment. The extension of the wharf did not only cost much more than the original estimates included in Gros-Cacouna's AMP; the lack of proper analysis of the traffic situation also resulted in negative repercussions for the Bas-St-Laurent/Gaspé maritime system, in the form of increased competition between the major ports. Plans to retain Matane as a dominant wood exporter in the Gaspé sub-region were thwarted when the port lost its traffic to Gros-Cacouna. Such a shift had been predicted in a report by the Montreal firm, SORES, in 1971 (see Preface). As shipping experts have noted (Stern and Hayuth 1984, and Biagini 1981), the concept of port hinterland is often irrelevant to ports within the same jurisdiction or state. This is because innovations in the spatial system are likely to enhance the advantage of one port at the expense of others. By acting more as an agent of regional development (and adhering to a relatively arbitrary territorial planning scheme based on Québec's regional boundaries), Transport Canada overlooked the geography of maritime trade, and an unpredicted shift in traffic occurred.

Evidence of the influence of the Plan de l'est on Transport Canada's planning is hard to ignore. The Plan had allotted \$5.3 million for the addition of 8000 square metres of external storage space at Matane, based on projected traffic increases (especially

in wood cargoes) to the year 2000. The final cost of the project would depend on whether the medium or optimistic scenario was realized (BBL 1989a, 30). One might have expected that the decline in Matane's traffic between 1982 and 1986, as a result of the development of Gros-Cacouna, would have obviated the planned investment. However, the funds (re-evaluated at \$3.9 million) were spent, albeit seemingly reluctantly.⁴⁸ While preliminary approval had been given in 1983, final approval for the project was only given in 1986 (Canada, DOT, H&P 1986a). The final approval requisition indicated that the additional storage space would be needed to accommodate future users, and that the project was called for in the Plan de l'est and the port's Asset Management Plan. No reference was made to the shift in Matane's traffic in favour of Gros-Cacouna.

5.3 1987-91 Capital Investment Plans

Despite the increased wood trade through Gros-Cacouna, the port's medium- and long-term potential traffic increases were seen as being limited. As Chapter 4 explained, Miron's cement-making activities were halted after only one year, because of environmental considerations. The preliminary environmental study, while supporting improvements to the port (such as the widening and dredging of the harbour),

⁴⁸by 1987, only 5% of the work on the storage space had been done; in 1988 (the final year of the Plan de l'est), the project was 90% completed (Canada, DOT, H&P 1986-89).

recommended that an Environmental Impact Assessment (EIA) be done before proceeding with the development, since the EIA could have an impact on Transport Canada's plans. Notwithstanding the pending assessment, Miron had set up operations at the port, only to be shut down soon afterwards. Transport Canada's \$45-million, short-, medium- and long-term plans (which were based on projected increases in traffic and ship size resulting from Miron's activities) nevertheless remained unaltered. In 1992, work on the harbour began.⁴⁹

Why did the department stand behind its infrastructure plans, when the only large ship expected to use the port, Miron's 35 000 dwt "Marynour", now had no reason to come? It is clear, from a study of the 1987 Asset Management Plan, that Transport Canada was aware from the start that developing Gros-Cacouna to allow large (35 000 dwt+) ships to enter was, in its own words, "inappropriate" (BBL 1989d, 1-31). The shipping patterns of various types of vessels had been evaluated. International wood carriers navigating the Bas-St-Laurent pick up cargoes at the ports of the eastern U.S. and Canada, and come to Gros-Cacouna (and other ports) to "top off" (i.e. add an extra few thousand tons to their cargo⁵⁰) before crossing the Atlantic. Because of economies of scale for ships which average 8000 - 16 000 dwt, the detour is worthwhile (BBL 1989d, 1-12).

⁴⁹Transport Canada has said that the narrow harbour entry is being enlarged for the safety of ships trying to manoeuvre through it. However, as mentioned in Chapter 4, the 1991 funding request states that it is also needed in order for larger vessels to use the harbour.

⁵⁰there are, on average, 1.5 month's worth of wood stored at Gros-Cacouna by exporters for this purpose

On the other hand, large-scale (35 000 dwt+) ships, which often carry dry bulk such as mineral concentrate, could not afford to "top off" their cargoes at the ports of the Bas-St-Laurent. This is due to a rigorous time schedule which makes it more profitable for such ships to cross the Atlantic part-empty. In 1987, Transport Canada did not foresee any increase in the size of the existing Bas-St-Laurent bulk carriers. Thus, there was no need to try to accommodate large ships at Gros-Cacouna (BBL 1989d).

In addition to the questionable grounds for enlarging the harbour, investment plans for the port through the year 2002 were not justified by a benefit-cost study undertaken by the DOT⁵¹ (which appears in the Asset Management Plan). This study considered the benefits to users: in the short term, a new berth, more indoor and outdoor storage, and the paving of a detour road around the storage areas (for a total of \$16 million) would result in a decrease in waiting times for ships (from 18 hours down to 2.5 hours, per ship), as well as more storage space. In the medium- to long term, another berth, a rail link (and accompanying road work), more storage, and Miron's access road (for a total of \$45 million) would result in decreased costs for Abitibi wood companies, as well as a potential increase in Abitibi exports through Gros-Cacouna. The benefits to Transport Canada would be accrued through reduced costs of maintaining a paved road, and rental of storage space. By all counts, the indicators of profitability

⁵¹as required for large-scale, capital investments (see Chapter 3). The benefit-cost study does not specifically differentiate between the first option (\$45 million) and the second (\$4 million). However, benefits to Abitibi companies would only result from a new rail link (option #1)

showed that the investment plans were not economically viable (BBL 1989d, 1-42). A sensitivity test (i.e. varying the handling productivity rates as well as storage usage rates) was then done, only to show that the plans were still not viable. Transport Canada concluded, nevertheless, that if the work were postponed to 1994, it could be deemed just barely profitable (BBL 1989d, 1-47).

5.4 User Consultations

For a department whose stated commitment is to cost-efficiency and making the best use of existing facilities, plans for a costly expenditure which could not be justified by the DOT's own analysis seem very inappropriate. It has already been pointed out (Chapter 4) that the harbour enlargement could not be justified on the basis of needs expressed by the port's users. Requests for the enlargement were not based on an existing need for a wider or deeper harbour, but on the expectation that Miron's ship would create congestion.⁵² Assuming that the written consultation reports are accurate and complete, other elements of the planned 1987-91 investment for Gros-Cacouna are equally hard to justify. Almost none of the users offered concrete evidence of need; instead, possible benefits accruing from the development of the port seemed to be based on conjecture. This applied to three of the four elements of the plan that were

⁵²the consultation reports confirm this. In fact, Gros-Cacouna's Public Harbour Advisory Council even stated that there was no need for it, given that a 26 000 dwt ship had entered the harbour that year without difficulty (BBL 1989c).

mentioned in the consultations. For instance:

The Rail Link:

- **Terminaux Portuaires** (a stevedoring company located at the port) argued that the link was necessary for any port wishing to serve more than only local needs;
- **Matériaux Blanchet** (exporting Maine and Abitibi wood through the port) suggested that a rail link would reduce its costs by up to 10%; but it also had its own fleet of trucks, and said that rail and trucking costs were approximately the same;
- **Gros-Cacouna's Public Harbour Advisory Council (PHAC)** said that Abitibi wood companies (Matériaux Blanchet and Noranda) would require a link, and said that some general cargo (heavy materials from Montréal) had not been able to use Gros-Cacouna the previous year due to the lack of a rail link. The PHAC insisted that it was crucial to get the link to Gros-Cacouna before Highway 20 was extended to Rimouski (which was expected to occur by the mid-'90s);
- **Noranda Forest Products** (buyer and shipper of wood for companies such as Matériaux Blanchet) said that a rail link would lower its costs, but also said that it planned to ship more wood through the port of Bécancour;

A New Berth:

The users that mentioned a need for this expected that congestion would occur because of Miron. Both stevedoring companies recommended the berth because they believe that any international port needs more than 2 (they also mentioned that large ships coming from Arab countries would require the berth and a larger harbour, as well as a Ro-Ro ramp). **Irving Forest Products** suggested that it would export more wood through Gros-Cacouna if it built its new sawmill 80 miles from the port (this company also shipped wood through St-John, N.B.);

Internal Storage Space:

F.F. Soucy and **Papier Cascades** both stated a need for more space, saying that the present indoor storage capacity was inadequate (in the case of F.F. Soucy, this applied to its exports by ship, not to its overland exports to the U.S.);

External Storage Space:

Only the **PHAC** (not considered a port user) suggested that since Gros-Cacouna's external space was already fully rented, more would be required (BBL 1989c).

These consultations reveal that, apart from the need for more internal storage, plans for expansion of the port were based on:

- assumptions of traffic increases (which were in no way guaranteed, or even quantified);
- the use of large, general cargo ships (which, as mentioned earlier, did not fit the Bas-St-Laurent shipping profile);
- and predicted cost reductions for Abitibi wood companies, through the use of rail over truck (an uncertain case, being suggested by companies which also regularly shipped wood through other ports, such as Pointe-au-Pic, Bécancour, and Québec).

Given that the expected medium- to long-term traffic increases pre-supposed the enlarged harbour, which in turn was based on Miron's activities (now shut down), it made no sense to proceed with the plans as they existed. Yet details of the costly expansion remained intact. Funding approval for the medium- and long-term plans is still being considered.

5.5 The Stakeholders

The potential regional impacts of the port of Gros-Cacouna, presumably the

result of increased Abitibi wood exports, have never been the object of a separate study.⁵³ Nevertheless, it seems obvious that these expected impacts were a determining factor in the investment decisions for Gros-Cacouna during the second planning period. In fact, pressure both from high-level politicians and regional actors combined to produce a deleterious effect on Transport Canada's planning process. The common denominator was strong local lobbying for the port.

As an advisory body appointed by the federal government, Gros-Cacouna's Public Harbour Advisory Council (PHAC), established in 1985 under the Public Harbours and Port Facilities Act, is prohibited from lobbying on behalf of the port. Its role is to advise the MOT on specific projects which appear to be in the port's best interests.⁵⁴ However, the creation of the Advisory Council more-or-less coincided with the abandonment of the proposal for the LNG Terminal, and as a result, Gros-Cacouna's PHAC has played a much less passive role than the other port advisory councils of the region.⁵⁵ The Council's attempt, during the 1989 consultations, to get a rail link to the port before the extension of the highway to Rimouski, seems to be an example of a PHAC getting involved with a port to the point where its "advice" is more of an impediment to Transport Canada's other activities.

⁵³the CCG has yet to conduct a study to determine the regional benefits of a port's development (CCG, H&P, Laurentian Region, interview, 1992).

⁵⁴a PHAC most often works to advance the projected date of a port investment (N. Bossé, PHAC of Gros-Cacouna, phone interview, 1992).

⁵⁵Mr. Bossé said that unlike the Matane and Rimouski PHACs, Gros-Cacouna's Council meets regularly, and is the most organized. 1992 members included a lawyer, a notary, an insurance representative from Cacouna, and a representative from a transport company.

In September, 1989, the PHAC published its 1988-89 annual report. It consisted of a list of requests for the port, based mostly on the proposals contained in the latest Asset Management Plan. The list also included a Ro-Ro ramp, which was not in the AMP, but which had been requested by the stevedoring companies. The second paragraph of the conclusion to the annual report (p. 8) states:

The members of the Council consider it a privilege to be the spokespersons of existing and future users of the port, as well as the socio-economic groups involved in regional development. This is the reason for the Council's active participation in the Integrated Maritime Transportation Plan of 1989, and for its strong links with Harbours and Ports managers, as well as with the office of the local M.P.⁵⁶

This statement implies that every resident of the region has a stake in the development of Gros-Cacouna. As mentioned, various other groups are involved in promoting the port. Among them are the *Corporation de promotion industrielle de la région de Rivière-du-Loup*, the Chamber of Commerce of Rivière-du-Loup, local industries and trucking companies, and the stevedoring companies mentioned in the consultation report. As a representative of the constituency of Rivière-du-Loup, the M.P. at the time, André Plourde, played an important role in keeping the development plans for the port on the political agenda. He had been very vocal during the development of Gros-Cacouna's Asset Management Plan, and had used the port issue as a political tool

⁵⁶"Les membres du Conseil considèrent comme étant un privilège le fait d'être le porte-parole des utilisateurs actuels et potentiels du port, ainsi que des groupes sociaux-économiques impliqués dans le développement régional. C'est pourquoi ils ont coopéré intensivement à l'enquête préalable à l'élaboration du plan directeur sur les ports publics (1989), et qu'ils tiennent à maintenir des liens étroits avec les gestionnaires responsables des havres et ports, de même qu'avec le bureau local du député fédéral." (my translation).

during the 1988 election campaign.

Unfortunately for these vested interests, the Treasury Board of Canada refused to grant preliminary approval for the proposed expenditures, and insisted on a benefit-cost study of the investment. The guidelines for this study were developed in May, 1991, and included the following *pro-forma*⁵⁷ terms of reference:

- 1) the identification of problems/opportunities associated with development (including user consultations);
- 2) analysis of the demand for transport, at this and other ports in the region (for all types of cargo);
- 3) identification of alternatives, including making only minor expenditures at Gros-Cacouna, and at other ports, in order to accommodate any excess traffic;
- 4) assessment of direct costs to taxpayers;
- 5) assessment of direct costs to users, including those of alternative modes of transport;
- 6) evaluation of the effects on production and cargo-handling;
- 7) identification of the effects of development on the environment;
- 8) identification of risk factors associated with the estimated benefits or costs;
- 9) evaluation of the identified alternatives, and their direct and indirect benefits and costs;
- 10) recommendation of an investment strategy for the next 5-10 years (Culley 1991).

Preliminary work on an economic study of the port of Gros-Cacouna,⁵⁸ based on the above guidelines, began immediately. Other ports were looked at as possible alternatives to developing Gros-Cacouna. Four (Rimouski, Matane, Québec, and St-

⁵⁷i.e. applicable to any proposed port development

⁵⁸the study is called "Etude économique pour le développement du port de Gros-Cacouna" (Canada, DOT, H&P 1991b)

John, N.B.) were deemed suitable.⁵⁹ Managers at the port of St-John, a CPC port, expressed worry at the possibility of a future expansion of the port of Gros-Cacouna (Canada, DOT, H&P 1991b). Before the actual study could be conducted, however, then-Prime Minister Brian Mulroney gave assurances to M.P. Plourde, during a visit to the region in August 1991, that the development would go ahead as planned. On December 19, 1991, Plourde announced that the DPW would proceed with preliminary planning, at a cost of about \$5 million).⁶⁰

The 1991 request for preliminary funding approval stated that in February, 1992, the CCG would undertake an economic study to assess the use of other ports as an alternative to developing Gros-Cacouna. On September 1, 1992, a letter to consultants preparing submissions for the economic study explained that the study was being cancelled (Tremblay 1992). No reason was given, and Transport Canada has not made it clear whether only the harbour entry or the entire harbour will be modified.

⁵⁹but stevedoring companies did not think it would be profitable to operate from Matane, since it was an under-used facility (i.e. not enough clients to warrant a shift in cargo-handling equipment). In fact, a CCG official stated that these companies refused to consider the possibility of moving their equipment to other ports. Terminaux Portuaires, in particular, had a great deal at stake, since it had moved to Gros-Cacouna from Québec in 1983 (due to labour disputes at the port). It now enjoyed the benefits of Gros-Cacouna's low storage rates.

⁶⁰as per an agreement reached on December 12, 1991, in a letter from the Minister of Transport, Jean Corbeil, to Plourde.

5.6 Summary

The analysis of actual and planned capital expenditures for the port of Gros-Cacouna from 1982 to the present reveals many inconsistencies between Transport Canada's stated planning priorities and its actual capital investment decisions. Among other things, it indicates how rigid a tool the Asset Management Plan became, when it was intended only as a guide to development. The 5-year deadline of the Plan de l'est added to this inflexibility by imposing time constraints on Transport Canada's very comprehensive, formal planning requirements. Even an important traffic diversion in the region did not affect expenditures which had been planned in the 1983-88 Economic and Regional Development Agreement.

In their efforts to bring development to the Bas-St-Laurent region, strong lobbyists succeeded, through their involvement with the Asset Management Plans and their links with high-level politicians, to render the DOT ineffectual in its capacity as planner of the public port system. As one Coast Guard official admitted, directives from the MOT about the political importance of the port had coloured the planning process from the beginning.⁶¹ The apparent reluctance of the DOT to alter development proposals suggests, as Atkinson and Chandler (1983) would say, that Gros-Cacouna was a political solution looking for a problem.

The evaluation of the Plan de l'est done by the Ecole nationale d'administration

⁶¹it has been suggested by various individuals that the government was also under public pressure to justify the original expense of the port's development. Strained federal-provincial relations might also have played a role.

publique in 1987 indicated that Transport Canada seemed to think that any investment in a less-favoured region would be worthwhile. However, while not the main focus of this thesis, assumptions of positive regional economic impacts resulting from Gros-Cacouna's expansion are debatable. Contrary to the belief that any investment is a positive one, this study has shown that capital investments developed without adequate analysis of the outcome can be detrimental. Bird (1971) would add that the effects of incremental port projects (i.e. undertaken without considering the transportation system as a whole) are certainly not neutral. He argues that "piece-meal" investments can impose constraints on future maritime developments, because of the changing technological needs of the system. This thesis suggests another danger related to the ad-hoc development of port infrastructure, especially in economically poorer areas: that it may generate demand for even more investment, due to local perceptions of the facility's potential to become a "super-port".

CHAPTER 6

CONCLUSION

6.1 Decision-making Constraints and the Public Bureaucracy

Chapter 5 described how investment decisions for the port of Gros-Cacouna, during the planning periods of 1982-86 and 1987-91, defeated the DOT's own stated capital investment criteria. More importantly, this thesis has also shed some light on the constraints that affected Transport Canada's ability to implement a rational, comprehensive port planning process. The conflict over regional development and transportation objectives in the 1982-86 period led to unforeseen negative impacts on the transportation system. These impacts reflect an obscured relationship between means and ends, and are an example of what Doern and Phidd (1983) see as being a problem of too much coordination between Canadian government departments and agencies.

The reluctance of the DOT to alter its investment plans when circumstances warranted illustrates the rigidity of the planning process. Evidence seems to point to the inability (or unwillingness) of public decision-makers to break away from purely "procedural" responses (Simon 1976) once the funding approval process had begun. Thus, decisions for Gros-Cacouna were not the result of a fundamental analysis of the needs of the maritime system (regardless of the effort involved in the development of the

Integrated Maritime Transportation Plans). Instead, planners proceeded on the basis of preliminary approval of already-established plans which were perceived to be in the best interests of port stakeholders.

As Kingdon (1984) has suggested, crises or focusing events can help to bring certain issues to the attention of decision-makers. The failure of the proposed LNG terminal for Gros-Cacouna in the early '80s was one such event. The perception of yet another unsuccessful regional project served to make interests even more vocal with regards to the port's development. The events of 1991 illustrate how powerful were these local lobbies. In stark contrast to the earlier problem of too much bureaucratic coordination, the Prime Minister intervened directly and made a unilateral decision about Gros-Cacouna.

The Canadian Coast Guard was thus treated as little more than a "pawn" - to use the words of Haefele (1969) - having to justify very unpredictable decisions. Because of political considerations, therefore (as well as time constraints, the high cost of collecting data for studies, etc.), planners proceeded in a very ad-hoc and incremental fashion. Lindblom (1959), in defence of incremental decision-making, has said that the test of an action is not only good results, but whether it can command a consensus. Unfortunately, Transport Canada's decisions may only have achieved the latter.

6.2 The Regional Basis for Public Port Infrastructure Investments

Following the study of investment decisions for Gros-Cacouna, two issues related to the use of transportation infrastructure as instruments of regional development need to be addressed. The first has to do with economic impacts. The shifts in wood traffic from other major ports in the Bas-St-Laurent in favour of Gros-Cacouna, in the name of regional development, seem to confirm the need for a truly system-wide approach to public port planning. Otherwise, port expansion will only succeed in promoting local development in one area of a region to the detriment of a neighbouring community. Surely the original intention of the Plan de l'est was not to spend large sums of public funds to simply divert positive economic impacts from one location to another.

At best, existing port economic impact methodologies (MARAD 1985, etc.) provide only very general indications of the regional benefits of port facilities. From data available at the national scale (i.e. re-spending of port-generated income, and so on), these methodologies attempt to extrapolate regional impact figures. For this reason, Martin (1987) has suggested that only individual port studies can provide true pictures of local and regional impacts.

An in-depth study of Gros-Cacouna's regional impacts might have revealed very few positive benefits from the export of Maine- and Abitibi-based construction wood. Goss (1990) specifically warns against subsidies based on a lack of knowledge about where benefits will accrue. An attempt to obtain economic impact statistics for the public ports of the St. Lawrence (Slack et al 1992) estimated, from extrapolations based

on the above methodologies, that approximately 200 jobs were *related* to the port of Gros-Cacouna. However, it cannot be concluded that these jobs are *port-dependent*. Many port services, including shipping agents and freight-forwarders, are often "footloose", with few ties to the port community (Stern and Hayuth 1984). It seems likely that benefits of certain development plans (particularly the proposed rail link in 1987) would accrue to sawmills and their employees in the Abitibi region, rather than the Bas-St-Laurent.

The second issue related to regional economic impacts has to do with the fact that proposed investment plans were almost all based on a scarce primary resource, wood. This commodity is, at best, fickle on foreign markets. As noted in Chapter 4, experts have stated that the future of forest products does not look very promising. In this context, it seems very inappropriate to make expensive modifications to a wood-handling port, especially when other such facilities are under-used. Transport Canada has indicated that it is now taking this into consideration, in light of a financial disaster at the port of Matane in 1990. Huge private and public investments⁶² went into the port for the Donohue pulp mill, whose operations lasted approximately 10 months. It closed down because of fluctuating pulp and paper markets, as well as a shortage of local wood (Le Rimouskois, Aug. 20, 1991, and interview with Matane's harbour master, 1992).

⁶²including approximately \$25 million from the federal government, under the Plan de l'est's industrial infrastructure envelope (La Voix Gaspésienne, Oct. 1988)

6.3 Future Prospects for Public Port Planning

Recently, Transport Canada introduced a new approach to public port planning which involves the participation of port stakeholders. Since 1992, public forums have been held at the Laurentian region public ports of Pointe-au-Pic, Matane, Sorel, Portneuf, Havre-St-Pierre, and most recently, Gros-Cacouna. The main goal of this approach is to draw the attention of the public to the financial constraints facing public ports, and to elicit cooperation in finding solutions that will benefit the system as a whole. A secondary goal is to involve interested groups (both in the private and public sectors) in the financing of port projects (CCG, H&P, Laurentian region, interview, 1993).

I was fortunately able to attend the public forum for Gros-Cacouna which was held in Rivière-du-Loup on June 14, 1994. The mood was not very encouraging. Despite Transport Canada's hopes for real cooperation, many interested parties (transport companies, local citizens, mayors, and industrial representatives, to name only some of the 75 participants) jumped on the chance to renew their vows to fight for the development of the port as an integral part of the regional economy.

Recent events at other ports of the St. Lawrence indicate that changes in the practice of port investment planning are not imminent. For instance, \$24 million in improvements for Rimouski, which now has very little commercial traffic, are presently

being considered for approval.⁶³ Among other things, these plans include a Ro-Ro ramp, as well as the dredging of the harbour. In the past, proposals for dredging were rejected because noxious sediments related to the petroleum products handled at the port lie at the harbour bottom. The wharf at Ste-Anne-des-Monts, in the Gaspé,⁶⁴ was recently re-paved at a cost of \$1 million, for the sole purpose of importing road salt (which is carried on 1 ship per year). Because of the corrosive nature of this cargo, the wharf must be paved every 4 years (Ste-Anne-des-Monts harbour master, interview, 1991).

6.4 Recommendations for Future Port Planning

Because of the politically sensitive nature of public port investments in a region like the Bas-St-Laurent, any suggestion aimed at reducing the occurrence of transportation infrastructure "hand-outs" must be made with some sensitivity to the economic situation. Public forums, therefore, are perhaps a positive step towards obtaining support for investment decisions. This being said, other alternatives to the present decision-making process need to be considered:

⁶³the last official word (that this author knows of) was from the local MP for Rimouski, in January, 1993 (Le Rimouskois, Jan. 12, 1993); as well as from Rimouski's harbour master who, in the fall of 1993, said that the proposal looked promising.

⁶⁴which was slated to be abandoned by the DOT in the 1980s

1) Studies: the DOT, in its capacity as "expert" in the field of maritime transportation, should conduct the studies required for a properly-informed capital investment decision. These include benefit-cost and economic impact studies. It has been argued that the weighting of objectives for a benefit-cost study can be an impossible task. However, this study has shown that, while regional development considerations guided transportation decisions during the 1980s (and prior to that), not once was there an attempt to assign some relative weight to those goals. As Studnicki-Gizbert (1992) points out, the task of considering all elements of a problem can be a formidable one, requiring fundamental policy reviews every so often. Yet the responsibility of bringing together what one individual alone cannot is the very "raison d'être" of public administration.

2) Jurisdiction: long debated in maritime transportation journals, this question seems once again to be relevant. Transport Canada has considered the possibility of integrating some of the more active commercial public ports with the Canada Ports Corporation or Harbour Commission ports. Others might be privatized, transferred to municipal or provincial jurisdictions, or simply abandoned. The principle behind such integration is that transportation objectives should be distinct from other goals. Broad transportation objectives included in the National Transportation Acts of 1967 and 1987 have often been blamed for an inconsistent approach to port planning in Canada. Perhaps narrowing the focus of the NTAs is the only way to create a truly national port system. Regional needs must be met, but not only through the provision of transportation infrastructure. As long as transport planners act as agents of regional development, the real requirements of both the maritime system and the regional economy may well be

overlooked.

3) Marketing: on a more optimistic note, there has been a recent emphasis in maritime transportation journals on port promotion activities (Goss 1983, 1990, and Tessier 1990). European commercial ports have been promoting their facilities for a long time, but the concept is relatively new to Canada. Perhaps the marketing of public ports would make more positive use of the efforts of local port communities.

There is obviously no easy solution to the problem of a costly over-provision of facilities in the public port system. As Ruppenthal (1975) aptly put it:

In Canada there is an uncommon propensity to look to transport as the potential cure for all our ills. ... Just do something to transport and all will be well with the farmers, the miners, the loggers and the native peoples. Transport is regarded as the key to economic expansion, equitable treatment, and a more abundant life.⁶⁵

It does not appear that this situation is likely to change in the near future.

⁶⁵Karl Ruppenthal, "Transport in Canada: Needs, Trends and Problems." J. Heads, Transport and Regional Development: The Prairie Provinces. Prepared for the Economic Analysis Directorate of Transport Canada (Publication #TP 11315-E), 1992, pp. 13-14.

REFERENCES

- Atkinson, M.M. and M.A. Chandler (ed.). 1983. The Politics of Canadian Public Policy. Toronto: University of Toronto Press.
- Beauchemin, Beaton, Lapointe (BBL) Consultants Inc. Aug. 1982(a). Etude du plan directeur sur les ports publics du Bas-St-Laurent: Rapport final - Résumé administratif. Prepared for Transport Canada, Harbours and Ports.
- _____. 1982(b). "Annexe". Consultation reports accompanying 1982(a). Prepared for Transport Canada, Harbours and Ports (internal document).
- _____. April, 1989(a). Plan directeur sur les ports publics - 1989: Résumé administratif. Prepared for Transport Canada, Harbours and Ports.
- _____. 1989(b). Plan directeur sur les ports publics - 1989: Rapport technique. Prepared for Transport Canada, Harbours and Ports.
- _____. 1989(c). "Annexe". Consultation reports accompanying 1989(a). Prepared for Transport Canada, Harbours and Ports (internal document).
- _____. 1989(d). Plan directeur sur les ports publics - 1989: Rapport technique (detailed plan for the port of Gros-Cacouna). Prepared for Transport Canada, Harbours and Ports.
- Biagini, E. 1981. "A General Theory of Development." (University of Southampton, Department of Geography, Discussion Paper #10).
- Bird, J.H. 1971. Seaports and Seaport Terminals. London: Hutchinson.
- _____. 1980. "Seaports as a subset of gateways for regions: a research survey", Progress in Human Geography, 4, 360-70.
- Blonk, W.A.G. (ed.). 1979. Transport and Regional Development: An International Handbook. England: Saxon House.
- Canada. 1985. Public Harbours and Port Facilities Act, R.S.C., c. G-9.
- Canada. Department of Public Works. 1992. Sommaire des coûts de construction du port de Gros-Cacouna. Internal document.

- Canada. Department of Transport. 1982-1993. Estimates. Part 3: Expenditure Plan. Minister of Supply and Services, Canada.
- Canada. Department of Transport, Harbours and Ports. (no date). Ranking Priority Criteria. Internal document.
- Canada. Department of Transport, Harbours and Ports. July 1983a. Soumission au conseil du trésor: Plan de développement économique du Bas-Saint-Laurent-Gaspésie. CCG Funding Submission. Internal document.
- Canada. Department of Transport, Harbours and Ports. 1984-1993. Annual Report on Financial Operations. Minister of Supply and Services, Canada.
- Canada. Department of Transport, Harbours and Ports. 1986(a). Agrandissement de l'aire d'entrepasage. (Marine Capital Project Approval Document - Matane). Internal document.
- Canada. Department of Transport, Harbours and Ports. Feb. 1990(a). Interim Harbours and Ports Capital Cost Recovery Policy. (Program Management Policy Circular #3). Internal document.
- Canada. Department of Transport, Harbours and Ports. 1991-92? Lignes directrices concernant la rédaction des documents visant l'approbation préliminaire de projet. Internal document.
- Canada. Department of Transport, Harbours and Ports. 1991(a). Preliminary Project Approval. Redevelopment of the Port of Gros-Cacouna. Internal document.
- Canada. Department of Transport, Harbours and Ports. 1991(b). Termes de référence: Etude économique pour le développement du port de Gros-Cacouna. Internal document.
- Canada. Department of Transport, Strategic Planning Directorate. 1975. Transportation Policy: A Framework.
- Canada. Department of Transport, Strategic Planning Directorate. 1980. Planning Outlook to the mid-1980s.
- Canada. Department of Transport, Strategic Planning Directorate. 1985. Freedom to Move: A Framework for Transportation Reform.

- Canada. Federal Economic Development Coordinator. 1985. Canada-Québec Economic and Regional Development Agreement, 1984-94. In collaboration with Le Secrétariat aux affaires intergouvernementales canadiennes du Québec.
- Canadian Transportation Distribution Management. 1987. Canada Ports and Seaway Directory. Don Mills, Ont.: Southam Business Publications
- Commission de développement et de promotion du port de Rimouski-est. June 1991. Le port de Rimouski-est: Résultats d'une étude de besoins pour les infrastructures portuaires. Prepared for Transport Canada.
- Conseil consultatif du port de Gros-Cacouna. Sept. 1989. Rapport Annuel 1988-1989: Gros-Cacouna. Prepared for the Canadian Minister of Transport. n.p.
- Corbeil, Jean (Minister of Transport). Dec. 12, 1991. Letter to Mr. André Plourde, Minister of Parliament, about proceeding with preliminary plans for Gros-Cacouna. Photocopy (2 pp.).
- Culley, Eric. May 1991. Améliorations portuaires à Gros-Cacouna. (Guidelines for a Cost-Benefit Analysis). Prepared for Harbours and Ports. Internal document.
- Doern, G.B., and R.W. Phidd. 1983. Canadian Public Policy. Agincourt, Ont.: Methuen Publications.
- Ecole nationale d'administration publique (ENAP). Dec. 1987. Evaluation du plan de développement de l'est du Québec, 1983-88. Montréal: ENAP
- Foreman, F. Shane. 1988. A Matter of Semantics: The Canadian Port System Defined. Paper prepared for the Canada Ports Corporation.
- Frankel, E.G. 1987. The World Shipping Industry. U.K: Croom Helm Publishers Ltd.
- Goss, R.O. 1983. "Policies for Canadian Seaports". Research Seminar Series, Canadian Transport Commission, Research Branch, Vol. 10, Fall, pp. 1-87.
- _____. 1990. "Economic policies and seaports: 4: Strategies for port authorities". Maritime Policy and Management, 1990, Vol. 17, #4, 273-287.
- Gubbins, E.J. 1989. The Shipping Industry: the Technology and Economics of Specialization. N.Y: Gordon and Breach Publishers.
- Haefele, Edwin T. 1969. Transport and National Goals. Washington: The Brookings Institute.

- Hayter, R. 1985. Technology and the Canadian Forest Product Industries: A Policy Perspective. Ottawa: Science Council of Canada.
- Hoyle, B.S. (ed.). 1973. Transport and Development. London: The MacMillan Press Ltd.
- Johnston, R.J., and Derek Gregory, Peter Haggett, David Smith, and D.R. Stoddart. (ed.). 1981. The Dictionary of Human Geography. Oxford: Basil Blackwell Publisher Ltd.
- Kingdon, J.W. 1984. Agendas, Alternatives, and Public Policies. Glenview, Ill.: Scott, Foresman and Co.
- Laserre, J.C. 1980. "Les ports québécois: nécessité d'une relance concertée". Montréal: Centre de recherches sur les transports, Université de Montréal.
- Le Groupe LMB and Le Groupe Leblond, Tremblay, Bouchard. March 1991. Réaménagement du port de Saint-Georges de Cacouna: Etude d'impact sur l'environnement.
- Lindblom, C.E. 1959. "The Science of 'Muddling Through' ". Public Administration Review, 19, Spring, #2, 79-88.
- MARAD. 1982. The Regional Port Impact Model Handbook. Washington: MARAD.
- Martin, J.C. 1987. "Economic Impact Analysis: A Port-specific Approach". Portus, 4, 33-36.
- Morissette, Pierre. 1991. "Aperçu de la situation du transport dans les régions du Québec". Paper prepared for the Semaine nationale des transports du Québec. May 1991. Centre de Formation et de Recherche en Transport Maritime et Intermodal du Québec (CFoRT).
- Noreau, Jean-Jacques (Deputy Secretary, Treasury Board of Canada). Aug. 23, 1983. Letter to Mr. R.M. Withers, Deputy Minister, Transport Canada, approving the funding for July 1983(a).
- "Port de mer: Gros-Cacouna". 1980-81? Documentation régionale de l'est du Québec. n.p. Library of the Université du Québec à Rimouski.
- Québec. Office de planification et de développement du Québec. 1991. Bilan Socio-économique 1990: Région du Bas-St-Laurent. Prepared by the Direction régionale du Bas-St-Laurent. n.p.

- Robinson, Grace A. 1985. "Capital Investment Decisions: An Investigation of Evaluation Criteria and Their Application to Canada's Public Port Industry". M.B.A. thesis, Concordia University.
- Ruppenthal, Karl M. 1975. "Transport in Canada: Needs, Trends and Problems." Reprinted in part in Heads, John. 1992. Transport and Regional Development: The Prairie Provinces. Prepared for the Economic Analysis Directorate of Transport Canada. Publication #TP 11315-E.
- Saint-Pierre, Antoine. 1993. Industrial Competitiveness, Trade and the Environment: a Look at Three Sectors of the Canadian Economy. Ottawa: Conference Board of Canada.
- Simon, Herbert. 1976. Administrative Behavior (3rd edition). New York: Free Press.
- Slack, Brian, Danielle Vallée, Claude Comtois and Luc Lagimonière. 1992. "The Economic Impacts of Small And Medium Size Ports." Paper presented at the World Conference on Transportation Research, Lyon, June 30, 1992.
- _____. 1992. "Le rôle et la fonction des ports de petite et moyenne taille dans le système Saint-Laurent". Cahiers de géographie du Québec, 37, #100, April 1993, 17-33.
- Société de recherches économiques et scientifiques (SORES) Inc. 1971. Trafic potentiel du port de Gros-Cacouna. Prepared for ARDA-Québec. n.p. Library of the Université du Québec à Rimouski.
- Stern, E. and Y. Hayuth. 1984. "12 Developmental Effects of Geopolitically Located Ports". Hoyle, B.S. and D. Hilling. Seaport Systems and Spatial Change. Chichester, N.Y., Brisbane, Toronto, Singapore: John Wiley and Sons, 1984, 239-255.
- Studnicki-Gizbert, K.W. 1992. Canadian Transport Policies: A Historical Overview of Issues. Sponsored by Transport Canada, Policy and Coordination (Economic Analysis). Ottawa, December.
- Taylor, Frederick Winslow. 1947. The Principles of Scientific Management. New York: Norton.
- Tessier, Jean-Michel. 1990. "Structure portuaire canadienne: concurrence accrue". Portus, Spring, 26-28.

Tremblay, Diane (Transport Canada, Harbours and Ports Directorate). Sept. 1, 1992. Form letter to consultants preparing an economic study for the port of Gros-Cacouna. Photocopy (1 page).

Van Loon, Richard J., and Michael S. Whittington. 1987. The Canadian Political System: Environment, Structure and Process. 4th Edition. Canada: McGraw-Hill Ryerson Ltd.

Waggener, Thomas R. 1991. Forests, Timber and Trade: Emerging Canadian and U.S. Relations under the Free Trade Agreement. Orono, Me.: University of Maine Press.

White, H.P. 1983. Transport Geography. London; N.Y.: Longman.

Woodbridge, Reed and Assoc. 1988. Canada's Forest Industry: The Next 20 Years.

Yochum, G.R., and V.B. Agarwal. "Static and Changing Port Economic Impacts". Transportation Policy and Management, 15, 1988, 157-71.

APPENDIX A

Exceptions to Cost Recovery Policy:⁶⁶

- 1) projects already under way (policy is not retroactive);
- 2) Safety / restoration projects;
- 3) "policy" projects (i.e. work done to fulfill broad, socio-economic objectives);
- 4) multiple beneficiaries of an expansion project (unless it is possible to allot a percentage of the work to specific beneficiaries);

⁶⁶taken from Interim Harbours and Ports Capital Cost Recovery Policy. DOT, H&P, Feb. 1990 (a).

APPENDIX B

Categories of Cargoes Shipped through Bas-St-Laurent Ports

For the purposes of this study, the following commodities are included in 5 categories⁶⁷

Forest Products: construction wood, newsprint, wood pulp, wood chips, etc.

Dry Bulk: mineral concentrate, powders, cement, etc.

Liquid Bulk: liquid petroleum products (gas, oil)

General Cargo: mainly provisions, manufactured goods, etc.

Grain: wheat and other cereals.

⁶⁷as per Slack et al (1993) - these categories do not necessarily correspond to those of Statistics Canada or the Canadian Coast Guard.

APPENDIX C
1982 Consultation Reports

Gros-Cacouna Users Consulted:

- 1) F.F. Soucy (newsprint)
- 2) Irving Forest Products (construction wood)

Local and Regional Representatives Consulted:

- 1) Cacouna Parish
- 2) Conseil de développement économique de Rivière-du-Loup

APPENDIX D

1989 Consultation Reports

Existing and Potential Users Consulted:

- 1) Matériaux Blanchet (construction wood)
- 2) Irving Forest Products (" ")
- 3) GEX (" ")
- 4) Foralix (" ")
- 5) Mines Seleine (Salt from Iles-de-la-Madeleine)
- 6) F.F. Soucy (newsprint)
- 7) Papier Cascades (corrugated paper, from neighboring Cabano)
- 8) Tourbières Premier (peat from the region of Rivière-du-Loup)
- 9) Noranda Forest Sales (construction wood sales)
- 10) Miron Inc. (cement)
- 11) Terminaux Portuaires du Québec Inc. (stevedoring)
- 12) Canada Enterprises Stevedoring

Regional Representatives Consulted:

- 1) Comité consultatif du port de mer de Gros-Cacouna (PHAC)
- 2) Corporation de promotion industrielle de la région de Rivière-du-Loup

Glossary

Deadweight tons (dwt): the unit of measure referring to the carrying capacity of a ship.

Forest Products: refer to lumber, timber, and newsprint. Sometimes "wood" is used interchangeably; when necessary, the cargoes are specified by their proper names.

Investments: the focus of this work is capital expenditures, not those associated with the regular operation and maintenance of ports (see Chapter 3).

Port: is not the same as a harbour. Transport Geography (1983) defines harbours as shelters, while ports are the interface between water and land, consisting of man-made facilities.

Port hinterland: the tributary area of a port, from which exports are collected and to which imports are distributed (Johnston, R.J., et al 1981).

Port infrastructure: can include the following fixed installations: Docks for berthing vessels; conveying systems from ship to shore, and vice-versa; loading ramps; open and closed storage areas for temporary storage at ports; open land alongside the docks for operating cranes; forklifts; trucks; loading equipment; rail and road connections; and services such as water and electricity. In addition to these infrastructure requirements, there are those related to the overall water transportation system - channels, turning basins, buoys, pilotage, etc. (Robinson 1985, 180-81).

Public ports: refer to the ports' federal jurisdiction; therefore, financing is through public appropriations. This paper deals only with public ports of a commercial, freight-handling nature.

Public transportation infrastructure: "The facilities and services associated with the way or access part of transport (roads, airports, harbours, etc.), as opposed to those associated with the vehicles (aircraft, ships, automobiles, etc.)"

- Canada, Transport Costs and Revenues in Canada, 1969-1979, p.1.