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On Linking the Micro and Macro Analysis
of Policies and Institutions

by

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PART I: INTRODUCTION

This paper has three major objectives. First, it is to place on the agenda of "Comparative Institutional Analysis", the issue of the interdependencies between constitutional arrangements (on the one hand) and policy performance (on the other hand). Policy analysts have long been sensitive to the interdependencies between different policies. Thus, education policies can be shown to be interdependent with employment policies and those with government fiscal policies and so on. Economists have pushed these analyses the furthest with their conceptual reasoning about technical and pecuniary externalities. There has also been increasing awareness of the interdependencies between institutional arrangements for organizing public policies. Thus, we are aware of the multi-organizational arrangements that characterize the provision and production of most policies and services to residents of the world's cities.

Policy analysts have not been as aware, however, of the interdependencies that exist between constitutional arrangements in so far as these affect policy provision and performance. Students of comparative federalism are sensitive to the interdependencies between national and regional constitutional arrangements in any one country, but there is a lesser appreciation of the impact of non-domestic constitutional arrangements on internal policy processes and performances. To

the degree that policies "spill over" political boundaries, we should be sensitive to the interdependencies between constitutional arrangements that may sanction or respond to such "spill overs". Indeed, one may hypothesize that we should not expect the paramountcy of any constitutional order in a world of plural and conflicting constitutional arrangements.

The second purpose of this paper flows from the first. Students in the public choice tradition of analysis are accustomed to explaining and evaluating policies in terms of the institutional arrangements (laws, regulations and organizations) operative in any society, and explaining and evaluating institutional arrangements in terms of the constitutional arrangements for that society. In other words, constitutional arrangements are a major predictor of institutional arrangements and these, in turn, are a major predictor of policy provision and performance. What this tradition offers is a way of inter-relating macro and micro analyses of policies. This paper provides a case example of the interrelationships between macro processes and micro processes of policy. It examines the commercial shipping policies extant in one harbour within the Great Lakes of North America, Hamilton Harbour in Canada, and interprets and evaluates these policies in the light of criteria applicable to other ports and their impacts on interdependent uses of harbours, bays and estuaries.

The third objective is related to the previous objectives. In understanding the relationships between the macro and the

micro -- in particular between constitutional arrangements, institutional arrangements and public policies -- we need detailed understanding of different policies in order to make valid generalizations. The "technical characteristics" of each policy and good act as mediating variables between institutions (on the one hand) and policy outcomes (on the other hand). We should not expect to use identical criteria for evaluating a range of different public policies. Commercial shipping has different "technical characteristics", for example, than does recreational boating. One such characteristic is that commercial shipping ports require inter-modal transportation links (with road and rail) in order to be economically viable. Recreational boating at best requires ramps, slips and automobile parking for economic viability.

The third objective thus places the onus on the social scientist to develop detailed knowledge about those public policies of interest, and to relate this detailed knowledge to macro processes with due caution about generalizations across policy fields. Much of this paper is taken up with a detailed examination of port policies in one port of the world -- using criteria applicable to port policies in other parts of the world. However, the generalizations about the relationships between constitutions, institutions and policies are advanced only tentatively.

The paper proceeds as follows. Part II describes the major features of Canadian constitution arrangements. This part is

largely included as background information for Conference participants who may not be aware of the basic constitutional configurations of one of the world's smaller (in population) country. It should not be read as inclusive of all constitutional arrangements pertinent to analyze macro conditions that affect the micro policy of commercial shipping.

Part III develops the policy area in microscopic detail. It describes the institutional arrangements for harbour management in Canada in general and in the Port of Hamilton in particular. This Port is the largest on the Canadian side of the Great Lakes and the fifth largest port in the country. Special emphasis is placed on the proprietary powers of the Hamilton Harbour Commissioners (the major port authority) and on the role of common law (discovered through an examination of court cases) as key constitutional arrangements. Two broad conclusions are evident in this part of the paper. First, the Port is in competition with and a rival to other shipping ports and other modes for the transportation of goods (road and rail) not only in Eastern Canada, but also in the Eastern United States. Secondly, the activity of commercial shipping is a rival to and in competition with other uses of the foreshores of the Harbour.

Part IV of the paper examines the performance of the Port of Hamilton in even more micro detail. Most important for theoretical understanding is the assessment of port performance -- using indicators of performance that are physical in character as well as indicators that are economic in character. The

analysis reveals a paradox about harbour management in this instance. The Harbour is effectively managed according to standard performance measures, but it is ineffective in a broader sense because of financial practices imposed by the Canadian Federal government. The practices require an overexpansion of commercial shipping in the port and cross subsidies of marginal operations from more profitable ones. The impact shows up most directly on the rival use of pleasure boating and calculations are made of the economic opportunities foregone that are due, at least in part, because of overexpansion of commercial shipping.

Part V is the conclusion to the paper. It returns to the broader objectives behind the analysis and emphasizes the methodological and theoretical implications of the exercise of moving between the macro and the micro levels in previous parts of the paper. The conclusion stresses two major concerns. First, because of the institutional and constitutional complexities potentially relevant for all policy fields, it may be methodologically more appropriate to "construct" the relevant institutional and constitutional arrangements out of micro policy analyses rather than determine the relevant set of arrangements on an a priori basis. We do not have any other sound methodological way to disentangle the complex and multiple institutional and constitutional arrangements for any policy area, when these arrangements can span international boundaries and include substantial amounts of case law.

Secondly, the conclusion raises the theoretical issue of

rivalry and competition inherent in commercial shipping policies, and of the relationships between such rivalry and competition and the multiple institutional and constitutional arrangements for commercial shipping. It is suggested that the particular institutional and constitutional arrangements for any single port "nest" within a configuration of multiple arrangements, and we have no reason to presume that such arrangements are hierarchically ordered. It is also suggested that the institutional and constitutional arrangements for any single policy themselves "nest" within a set of arrangements for interdependent policy areas. The rules for one policy area may become incentive systems for another policy area. Again the complexity and multiplicity of arrangements are emphasized.

PART II: Canadian Constitutional Arrangements in General

There are four major components of the constitutional arrangements in Canada that are critical for an understanding of the operation of institutional arrangements in general, and the nature of policy making for ports and harbors in particular (Sproule-Jones, 1975).

First, Canada possesses a written Constitution Act, 1867 (formerly called the British North America Act, 1867) which establishes, inter alia, the legislative authority of the two levels of government in the Canadian Federal System, the Federal and Provincial Governments. The Act specifies that the Federal and 10 Provincial Governments must be organized in a manner "similar in principle" with that of the British Parliament. Since 1982, the Act contains a charter of individual rights and freedoms, and amendment processes for changes in the document.

In the second place, the courts grant legislative supremacy to the Federal and Provincial governments, subject to the common law doctrines of ultra vires (including its application to the written Constitution Act) and natural justice (except when a statute discloses a contrary intention). It is not yet fully clear as to the primacy of the charter clauses in the Constitution Act and those granting legislative supremacy. However, recent experience suggests that the courts are emphasizing the superiority of the principle of legislative supremacy (Weinrib, 1987). In other words, the de jure

legislative powers of both levels of government remain extremely large. And because of the discipline exercised by majoritarian political parties at both levels of government, the de facto powers of the Federal and Provincial cabinets also remain large. (Minority governments are occasional features of national and provincial politics).

Thirdly, the Crown retains prerogative powers, including prerogative proprietary powers. The Crown only exercises these powers on the advice of the cabinets at the appropriate level of government. However, for purposes of understanding commercial shipping policies in Canada, public proprietary rights can be created or modified by statute or are simply attached to the powers of the Provincial and Federal Governments.

Finally, the courts in Canada apply common law precepts to limit the exercise of sovereign legislative and proprietary powers. Reference has already been made to the doctrines of natural justice and ultra vires. Similarly, the courts will carefully scrutinize legislation that appears to "take" property rights without compensation, even though private property rights are not constitutionally guaranteed. Most important for the policy of commercial shipping is the common law doctrine of "navigable servitude".

This doctrine is used by the courts to establish priorities amongst the uses of harbours, rivers and lakes. Typically water resources are used for a variety of purposes such as domestic consumption, industrial consumption (e.g. cooling water),

fisheries both recreational and commercial, recreational boating and swimming, waste disposal, commercial shipping and so on. Some of these uses are compatible. For example, industrial water consumption is largely compatible with swimming and recreational uses. Sometimes, however, the uses are in conflict. Excessive waste disposal can reduce or even destroy a fishery, for example. In cases of conflict, courts are frequently asked to establish priorities amongst uses.

Canadian courts have placed priority on commercial shipping over all other water uses. Priorities amongst other uses have, generally, not been established through the courts but through administrative regulation, or bargaining amongst user interests). This decision rule stems from the Magna Carta of medieval England, when the barons agreed to remove their fishing weirs from the River Thames to allow unobstructed navigation for the navy of King John (Moore and Moore, 1903). This medieval extreme is the primary constitutional principle for allocating water uses in Hamilton Harbour and other ports.

In essence, then, the sources of the laws, regulations and other institutional arrangements for providing shipping policies are the written constitution, the legislative decisions of the two levels of government, the prerogative powers of the governments, and common law precepts which are important in interpreting the conflicts between rival constitutional and statutory declarations. These common law precepts may even be considered to be rival doctrines to the written constitutional

arrangements embodied in the 1982 Act. Part III of this paper examines the institutional arrangements for commercial shipping in Canada in general, and Hamilton Harbour in particular. It is prefaced by a brief description of the port in question.

PART IIIINSTITUTIONAL ARRANGEMENTS FOR THE MANAGEMENT OF SHIPPING AND
NAVIGATION(1) Background Information on Hamilton Harbour

Hamilton Harbour is the major naturally protected harbour on western Lake Ontario. Its waters measure some 22 square kilometers and are accessible to Lake Ontario by a man made canal, 300 feet wide, which was cut through a natural sandstrip on its south-eastern side between 1823 and 1830.¹

Five creeks flow into the Harbour, draining 900 square kilometers of agricultural, urban and ex-urban lands in the watershed. Settlement in the watershed is based in the City of Hamilton itself, a city of some 300,000 persons where employment opportunities are concentrated in the heavy manufacturing and industrial sectors. Another 200,000 persons live in the adjacent and faster growing communities of Burlington, Dundas, Ancaster and Stoney Creek. Settlement patterns now reflect the deconcentration of activities within the older central city, and the locational competition of economic activities both within the watershed and in the urbanizing communities to the East.

The Harbour, like many other bays, is a multiple use natural resource site. One of the uses of the Harbour is for commercial shipping and navigation. The history of the watershed is, in many ways, a product of the development of the port and of the

¹Unless otherwise stated, data in this section are drawn Sproule-Jones, 1985, 1986A, 1986B.

Harbour lands as sites for industrial location, warehouses, wharves and docks. The opening of the ship canal in 1832 allowed merchant vessels to enter directly into the Bay, and Hamilton superseded Dundas as the storage, outfitting and distribution centre for Western Lake Ontario. The later growth of the city, especially in the late 19th Century and during World War I, was based on industrial expansion adjacent to the Harbour waters and allied railroad transportation systems. Shipping activities continued to grow during the 1920's, the Depression and World War II, as the port capacity was increased and waterlots sold for infilling for industrial purposes. Hamilton Harbour became the largest port on Lake Ontario and one of the five largest ports in Canada (Ruppenthal, 1983,136).

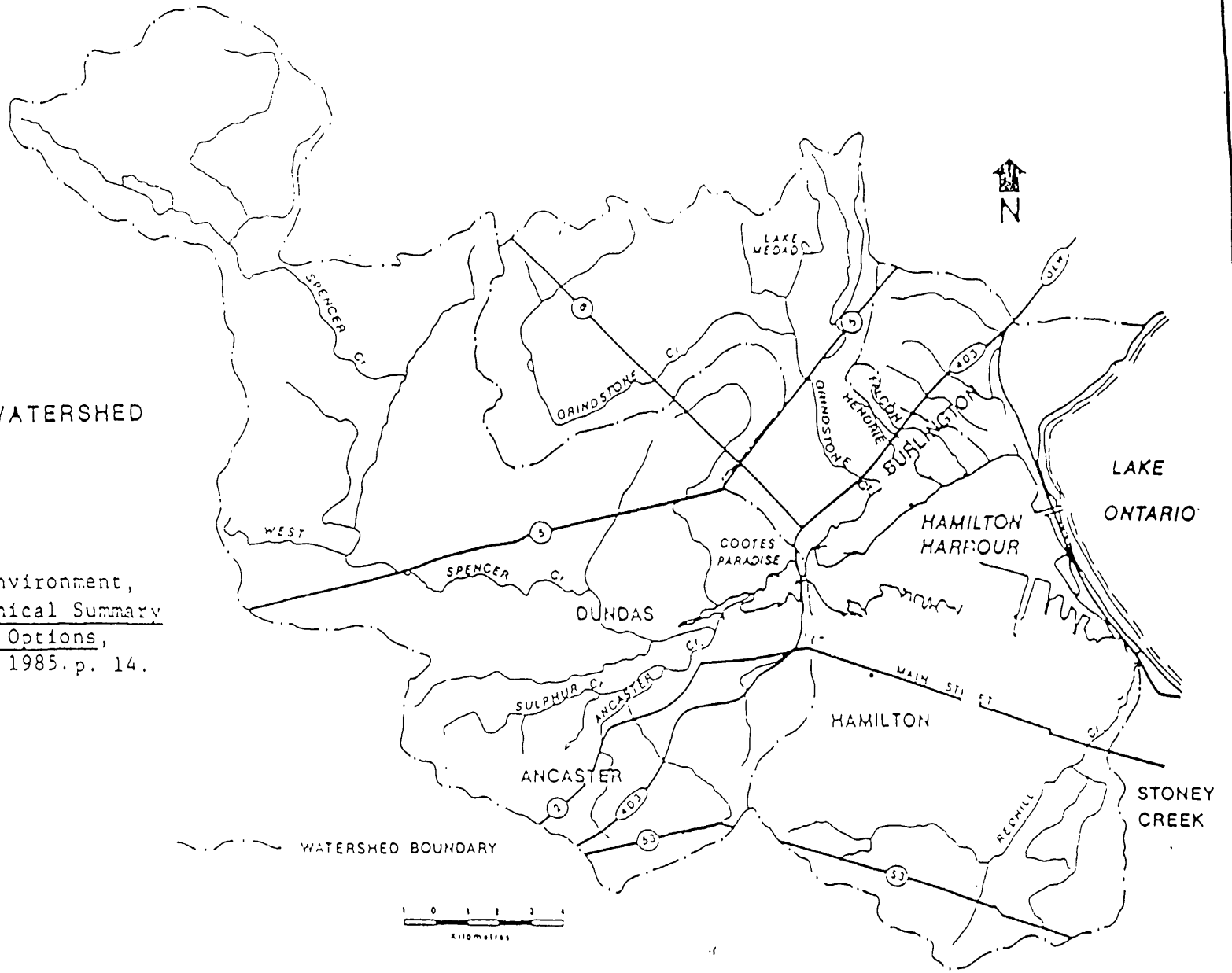
The Harbour sustains other uses besides that of commercial shipping and navigation. A major use is for the disposal of liquid wastes. Some 27 billion gallons of liquid wastes are discharged from industrial and municipal outfalls on an annual basis; this is equivalent to 40% of the volume of the receiving waters. It takes only three months for the harbour to flush itself into Lake Ontario, but the resident waters and sediments exceed conventional standards for most kinds of water pollutants.

Recreation - primarily pleasure boating - is the third major use of the Bay. Some 265,000 annual boating opportunities for sailing and motor boating alone exist in the Harbour. Other forms of recreation, such as a small warm water sports fishery, bird watching, iceboating and canoeing, remain minor recreational

MAP 1

HAMILTON HARBOUR WATERSHED

Source: Ministry of Environment,
Hamilton Harbour, Technical Summary
and General Management Options,
Government of Ontario, 1985. p. 14.



uses.²

Finally, the Harbour waters are used for industrial (not domestic) water supply. Some 2.3 million cubic meters are withdrawn daily, mostly for cooling water processes in the steel mills located on the foreshores of the Harbour. 96% of this volume is returned to the Bay after use.

(2) Legal Bases for Harbour Management in Hamilton and Other Canadian Ports

Management of the port of Hamilton is based on a structure of law and legal principles. The law includes common law, constitutional law, statute law, and legal regulations made pursuant to statutes. As the following discussion illustrates, shipping and navigation in Hamilton Harbour are subject to the monopoly jurisdiction of the Hamilton Harbour Commissioners. Other governmental bodies, property owners on the Bay (riparian land owners), and private citizens who may have an interest in shipping and navigation have extremely limited legal authority to influence port management.³

(a) Common law

A primary legal foundation for port management in Canada is the common law doctrine that the right of free navigation is a

²The commercial fisheries based in the Harbour collapsed during the 1920's because of pollution and overfishing. Swimming was banned in 1930 because of pathogenic pollution.

³Sproule-Jones, (1985).

public right paramount and superior to all others on navigable waters. Adjacent land owners have no proprietary rights to the water or the water bed, and cannot construct or do anything that would interfere with the primacy of navigation.⁴

"... the right of the Crown to sail in ... public navigable waters is subject to the right of passage, and any grantee of the Crown must take subject to such right ... this public right includes all such rights as ... are necessary for the convenient passage of vessels along the channel".⁵

In other words, the starting point for understanding the legal framework for shipping and navigation is the common law doctrine of free navigation. This doctrine remains important even when constitutional law and statute laws have limited this paramount use of navigable waters; the courts have subjected constitutional sections and statutes to greater judicial scrutiny.

(b) Constitutional Law

By virtue of the Third Schedule (operated through Section 108) of the Constitution Act, 1867, the Crown in the right of the Government of Canada was granted authority to control shipping and navigation in "public harbours".

Case law has established that the public harbours designated under Section 108 -- those watercourses that were operating as "public harbours" at Confederation -- belong, both in a

⁴Arsanault v. R. (1917), 16 Ex C.R., 271 AT 277 Moore v. R. (1915), 16 Ex C.R. 264 at 267. The most frequently cited case is Wood v. Essen (1884), 9 SCR, 239.

⁵Wood v. Essen, op. cit., 246-247.

proprietary and legislative sense, to the Federal Crown (government), and that Federal ownership extends to the bed and foreshores of the harbour.⁶ While there is no clear definition of what actually constitutes a "public harbour", there must be at least some physical characteristic distinguishing its location from a place merely used for purposes of navigation. Since Dominion ownership does not extend beyond that part of the waterbody or watercourse which is actually used for harbouring purposes (anchoring ships and landing goods), the Federal Government cannot claim proprietary jurisdiction over a waterway adjacent to a harbour that is too narrow or shallow for navigability, or claim to own a section of river bank-to-bank if only a sheltered cove of the river is used to anchor ships.⁷

In harbours where it can clearly claim proprietary jurisdiction, the Federal Government's authority over all aspects of harbour development is absolute. Under this constitutional authority, the Federal Government has passed a number of statutes governing port management and commercial shipping use of harbours in Canada. Some of these especially the ones directly affecting Hamilton Harbour, are discussed below. However the constitutional authority of the Federal Government over Hamilton Harbour is much more limited than over many rival ports.

⁶Holman v. Green, 1881, 6 SCR 707; Fader v. Smith, 1885, 18 NSR 433; A.G. Canada v. A's G Ontario, Quebec and Nova Scotia (Reference re Provincial Fisheries) (1898, A.C. 700 (P.C.)).

⁷City of Montreal v. Montreal Harbour Commissioners. (1926), 1 D.L.R. 840 A.C. 299.

(c) Hamilton Harbour's Exceptional Constitutional Status

The authority of the Federal Crown over "public harbours" is limited in the case of Hamilton Harbour. This is because Hamilton Harbour was not, in 1867, a public harbour within the meaning of Section 108 and the Third Schedule of the Constitution Act, 1867. In 1846, the statute incorporating the City of Hamilton defined the boundaries of the City to include "the harbour of said town."⁸ Section 5 of the same Act provided that "all of the Bay to the opposite shore thereof laying in front of the said City shall vest in the City council of the said City". In other words, the Harbour was vested in the Municipality of Hamilton at the date of Confederation rather than in the Province of Ontario. The provisions of Section 108 and the Third Schedule vested in Canada "the public works and property of each province enumerated", not the property of municipalities. Municipal property is legally the property of the municipal corporation, although municipal corporations are merely political entities created by provincial legislation.⁹

⁸Canada, Legislative Assembly of Upper Canada, Provincial Statutes of Canada, 1846. c.73, s.3. Unfortunately, the Act has not a 'short title'. Its full title is: "An Act to Alter and Amend the Act Incorporating the Town of Hamilton, and to Erect the Same into a City".

⁹The precedent-setting case for all such harbours in Canada was R. v. St. John Gas Light Co. (1895), 4 Ex.C.R. 326, in which it was ruled that the harbour of St. John, New Brunswick did not vest in the Dominion by virtue of Section 108 of the British North American Act, 1867 [(U.K.), c.3, now the Constitutional Act, 1867].

Currently proprietary ownership of the bed of the Harbour, of water lots and of harbour lands (not expressly alienated) is held by the Hamilton Harbour Commissioners, a public corporation established by the Federal Government in 1912. Ownership is no longer vested in the Municipality, nor is it vested with the Province or the Federal Government. The Commissioners acquired proprietary authority in 1948 as a result of an agreement between the City of Hamilton, the Province of Ontario and the Dominion of Canada, all of which was designed to end some 50 years of disputes over ownership issues.¹⁰

The Federal Crown can, however, claim legislative not proprietary jurisdiction over the use of the waters of Hamilton Harbour through the constitutional authority over shipping and navigation assigned it under the Constitution Act, 1867.¹¹ Theoretically, the Province of Ontario can challenge the use of the waters of Hamilton Harbour, for example for industrial or domestic consumption. In practice, this is a highly circumscribed form of control, because the courts have declared the

¹⁰The Deed from the City was No.148343NS, registered on 8 November 1982; the Provincial Order in Council 266/47 was passed on 13 February 1947; and the Dominion Order in Council PC5427 was passed on 26 November 1948.

¹¹Constitution Act, 1867. S. 91 (9) S. 92 (10), S. 91 (12) Case law establishes that no proprietary right accretes to the Federal Government under these sections, Attorney General of Canada v. Attorney General of Ontario, 1898, AC700, Re Water and Water Powers 1929, SCR 200, R. v. Moss 1896, 26 SCR 322.

paramountcy of navigation over other harbour uses.¹²

The Federal Government thus retains considerable authority over Hamilton Harbour because of its constitutional powers over navigation rather than its constitutional powers over public harbours, over waterfront lands not expressly used for shipping and navigation; it shares concurrent jurisdiction with the Province in these cases. The Province of Ontario has granted authority to the City of Hamilton to exercise these concurrent proprietary rights,¹³ although these rights do not extend in the matter of business assessment of the Harbour Commissioners for taxation purposes.¹⁴

(d) Statute Law and Regulation

The Federal Government, through powers that flow from the appropriate sections of the Constitution Act, 1867, is thus empowered to manage shipping and navigation throughout the country. Under these powers, the Federal Government has recognized or established four kinds of ports authority to manage some 700 harbours.

¹²Ireson v. Holt Timber Co. (1913), 30 O.L.R. 209; Elec. Development Co. of Ontario v. A.G. Ontario (1917), 38 O.L.R. 383 [reversed (1919) A.C. 687 (P.C.)].

¹³Hamilton Harbour Commissioners v. City of Hamilton et al. (1978), 91 D.L.R. (3rd), 353 at 376, 1 M.P.L.R. 133, 21 O.R. (2d) 459 (C.A.), 6 M.P.L.R. 183.

¹⁴City of Hamilton v. Hamilton Harbour Commissioners and the Regional Assessment Commissioner for the Regional Municipality of Hamilton-Wentworth (1984). Not reported.

First, in small Harbours that serve mainly pleasure craft and smaller fishing fleets, the Federal Government recognizes "public harbours" in which wharfs, ramps, jetties and breakwaters are administered by a Federally appointed harbour master, who may or may not collect berthage duties for operating and maintenance costs.

Secondly, the Federal Government recognizes the operation of so-called "private" ports, in which the commercial shipper operates the port normally as an adjunct economic activity of the extraction of a natural resource (such as a copper mine). There are 22 such private ports within Ontario alone. Jurisdiction over these first two kinds of ports is largely accomplished by regulations of the Department of Transport under the Canada Shipping Act 1970, the Government Wharves and Piers Act, the Fishing and Recreational Harbours Act, 1964 and the Canada Ports Act, 1982.

More important in terms of the movement of goods are the third and fourth types of ports in Canada. Some 15 ports are managed by local port corporations under the authority of the Canada Ports Corporation, which was established as a "super" crown corporation in 1982. Over 50% of Canada's waterborne tonnage is handled through these 15 ports, and over 90% of container traffic flows through the 4 ports of Montreal, Halifax,

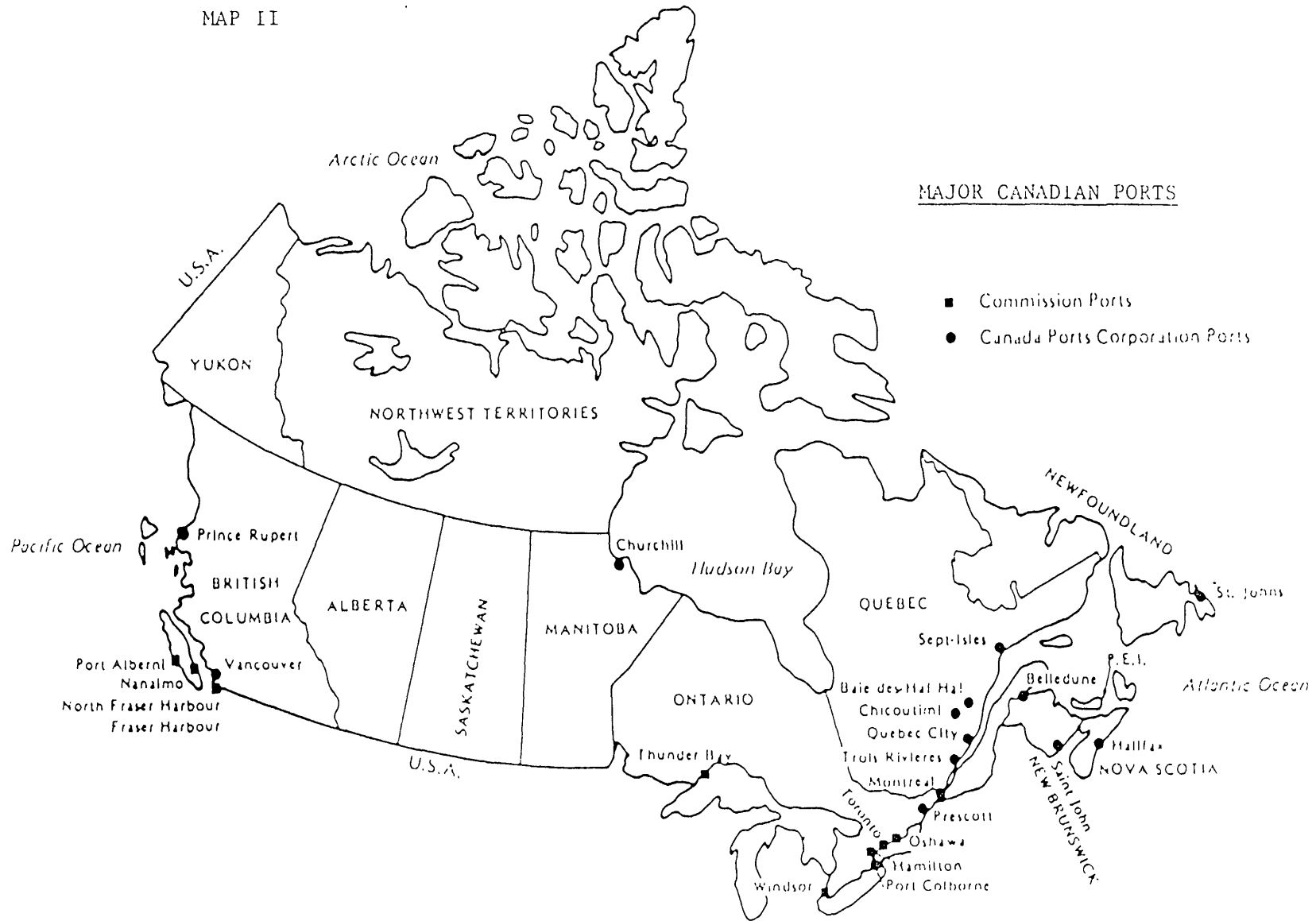
St. John and Vancouver.¹⁵

The final type of port in Canada is the so-called Harbour Commission port. Some 9 ports have their own enabling statutes that grant broad discretionary authority in management to the local public corporations. The Canada Ports Act 1982 and the Harbour Commissions Act of 1964 impose some of the financial, borrowing, and reporting practices on the Harbour Commissions, although Hamilton and Toronto Harbours were expressly excluded from the provisions of the 1982 Act. Hamilton is thus one of the more decentralized ports in Canada that operates under its own Act and which is subject to relatively little Federal Government intervention. Financial policy making is still, as we shall see, an important matter of governmental control, with important implications for the management of the Harbour.

The key statute for understanding port operations in Hamilton is the Hamilton Harbour Commissioners Act, 1912. The Hamilton Harbour Commissioners is a public corporation with powers to "hold, take, develop and administer on behalf of the City of Hamilton in the harbour as defined by this Act ... all property which may be placed under the jurisdiction of the

¹⁵The Canada Ports Corporation, the Minister of Transport and the Treasury Board still retain considerable legal authority over local port corporation operations, and it remains a moot point as to whether local ports can become fully responsive to customers under such structure. For example, capital expenditures in excess of \$10 million still require Treasury Board approval, but prior to 1983, NHB Ports required approvals for expenditures over \$50,000. See Richard Goss (1982,3-87); Karl M. Ruppenthal, (1983, 122-69).

MAP II



Source: Karl M. Ruppenthal, Canada's Ports and Waterborne Trade, Centre for Transportation Studies University of British Columbia, 1983, p. 136.

Corporation.¹⁶ Like most public corporations, the Hamilton Harbour Commissioners enjoy considerable autonomy from the Federal Government. The Federal Crown appoints two commissioners; the City of Hamilton appoints a third. Beyond this, the Commissioners have authority to appoint and fix remuneration of their own personnel, borrow and spend, and acquire, own, sell and lease land. They are within the limits of their Act, "masters in their own house."¹⁷

The power conferred by the Act on the Commissioners includes absolute jurisdiction on lands owned by the Commissioners to be developed for shipping and navigation for harbour purposes.¹⁸ With respect to privately owned lands, and properties controlled by the City of Hamilton or other municipalities or by the Province of Ontario, the Act confers jurisdiction on the Commissioners to enact by-laws controlling the use of such lands to the extent that the use of those lands might interfere with

¹⁶Hamilton Harbour Commissioners' Act, S.C. 1912, c.98 [amend. S.C. 1951, c.17, S.C. 1957-58, c.16] s.14(1) [the Act was not consolidated in the Revised Statutes of Canada, 1970].

¹⁷Mr. Justice Griffiths, in decision of Hamilton Harbour Commissioners v. City of Hamilton, et al., op. cit., at 360.

¹⁸Hamilton Harbour Commissioners' Act, s.14. The Corporation also has ownership of the bed of the Harbour, as previously noted.

the navigation and shipping activities of the harbour,¹⁹ but the Commissioners may not exercise their jurisdiction in such a way as to affect the proprietary rights of public or private landowners.²⁰ The practice observed generally where any harbour construction, dredging or other operation is to be carried out on either a private or public basis, is for the party or government involved to apply to the Commissioners for a permit authorizing the necessary operation.

In terms of the regulation of shipping in the Bay, the Harbour Commissioners are permitted to pass their own by-laws provided they do not conflict with two major pieces of Federal legislation, the Canada Shipping Act and the Navigable Waters Protection Act. These Acts regulate registration of ships and crews and the construction of any "works" in navigable waters, respectively.²¹

Thus the law for shipping and navigation in Hamilton Harbour grants Federal authorities, and in particular the Harbour Commissioners a virtual monopoly in management. The Harbour Commissioners do not simply possess the relative independence of all public corporations; they possess independent proprietary

¹⁹Ibid., ss.15(1),(2) the regulatory instruments for this authority are Hamilton Harbour Commission By-Laws 81 and 88.

²⁰Hamilton Harbour Commissioners' Act, s.12.

²¹Sproule-Jones, 1985A.

powers over the bed of the Harbour, water lots, and all the lands that are related to shipping and navigation. The Canada Shipping Act and the Navigable Waters Protection Act are the only major legal constraints on the port management function of the Commissioners. And the port management function - the field of shipping and navigation - is granted legal paramountcy over all other uses of the Harbour under the common law principle of "navigable servitude."²²

(3) Rivalry and Competition

While the law grants the Hamilton Harbour Commissioners a virtual monopoly of powers with regard to shipping and navigation in the Harbour, the Commissioners' are paradoxically subject to intense rivalry and competition in two respects. First, the port is a rival to all other ports in the Great Lakes (and to those ports with access to marine traffic) for water-borne traffic and commerce. Second, the port is a rival to some other uses of Hamilton Harbour itself, in so far as these other uses require foreshore land that may or may not be related to shipping and navigation in the foreseeable future. Each of these rivalries is discussed in turn.

(a) Competition Between Ports

Hamilton Harbour competes with other ports on the Great

²²Hamilton Harbour Commissioners v. City of Hamilton et. al, op. cit, 378; R. v. Hamilton Harbour Commissioners 1977, 7 C.E.L.N., Ont. 130.

Lakes and on the Eastern Seaboards of Canada and the United States for the transshipment of goods. Indeed, it competes with other transportation modes (railways, road trucking and air freight) as well as relies on these other modes for transferring cargoes from their origins to their destinations. In this environment, ports seek out a "market niche" which may give them a comparative advantage over potential competitors.

The market area that Hamilton Harbour serves is bounded in part, by the drainage area of the Great Lakes. This area is served by four larger transportation systems other than provided by Lakes ports, namely²³

- (i) the Mississippi river system
- (ii) the US mid-west Atlantic rail system with important intermodal transfers at the ports of Baltimore and New York;
- (iii) the Canadian rail system with key intermodal transfers at Thunder Bay, Montreal, St. John and Halifax; and
- (iv) the Trans-Canada and U.S. Interstate Highway Systems.

Only 19% of the inland water traffic in this area involves a

²³Peat Marwick and Partners, 1984, pp. 111-1.

Canadian port on the Great Lakes - St. Lawrence Seaway system.²⁴ Thus the constitutional and institutional arrangements for Hamilton Harbour, described previously are only one of a set of arrangements affecting port policy. US arrangements are particularly important, but arrangements in Europe are also significant in determining charter and ship vessel movements.

Hamilton Harbour has benefited from man-made improvements on the Great Lakes. The United States built and maintains four locks and a ship canal on the St. Mary's River. Canada built and maintains the Welland Canal with eight locks, the last major improvements occurring in 1932 and 1959. Both governments built and maintain the St. Lawrence Seaway between Montreal and Lake Ontario, a system consisting of seven locks and a dredged depth of 35 feet. These developments made possible the movement of bulk materials such as iron ore and coal throughout the Great Lakes without offloading at ports in the upper lakes, at Buffalo, or at Quebec ports. It also made possible continental access for smaller sea going vessels, (those with a draught of 35 feet or less) carrying general cargo (break bulk and containers). Hamilton benefited more than most Ontario ports from these

²⁴Ibid, pp. 111-2.

developments, as almost all of its cargoes use either the Welland or the St. Lawrence itself. It can also accommodate the larger vessels of up to 730 feet in length and the more efficient ships, such as the self unloading bulk carriers, that have largely replaced the smaller and older "lakers".²⁵

However, the advantages of Hamilton Harbour from improvements in the Great Lakes have magnified its existing specializations in the market rather than made possible newer forms of competition with other ports. The improvements were of importance in emphasizing Hamilton's comparative advantage in the import of bulk commodities for the steel companies located on the foreshores of the Harbour. The locational advantages of Thunder Bay for the loading of Western grain, and Federal Government subsidies for rail transportation of grain from Southern Ontario to Montreal, have meant that the largest bulk commodity flows on the Great Lakes bypass Hamilton. Similarly, the locational advantages of Montreal have allowed it to capture much of the regular container ship movements to Eastern Canada and for it to challenge rival ports such as New York - New Jersey.²⁶ Hamilton

²⁵E.S., IV.4., See also Ruppenthal, 1983, pp. 170-179.

²⁶The container feeder system is dominated by the rail and road transportation modes rather than by water transportation. Toronto Harbour has suffered from road-rail competition and transshipment through Montreal, Halifax, St. John, New York and Baltimore, and has been more unsuccessful than Hamilton in establishing a market "niche". See Peat Marwick and Partners, et al. 1984, v. IV.

Harbour thus tends to specialize in those types of cargo flows in which it has comparative advantage, albeit within a network of rival ports and rival transportation modes (some of which are international in character).

(b) Competition Over Foreshores

The courts, as previously indicated, have given the Harbour Commissioners priority in the management of shipping and navigation over alternative uses of the Bay. In terms of the impact of shipping and navigation on other uses on the waters themselves, the consequences are few. Larger ships create some extra turbidity in the waters, but spills of fuel and bulk goods can be monitored and controlled. Similarly shipping and navigation have few consequences for recreation on the waters, subject to clearly defined and policed shipping lanes.

Shipping and navigation are, however, rivals to other uses when it comes to foreshore lands. Shipping and navigation requires dredged channels and berths, storage space, intermodal transfer space, and access to such space by road and rail. The extent of lands required for such purposes will be subject to different interpretations, and ultimately negotiations by other user interests that have proprietary and legislative controls over some foreshore aspects.

Currently, over one-third of the shoreline is allocated to commercial shipping and allied activities - wharves, warehouses, terminals. Over one half of the waterfront is committed to industrial sites. This is because the Harbour Commission pursued

-between 1926 and 1982 especially - a systematic policy of infilling water lots in the Harbour and retailing these lots for industrial sites. The Harbour waters are smaller by over 20% from their 1850 size.²⁷

The major rival to the Hamilton Harbour Commissioners' over the allocation of the foreshore land to the use of shipping and navigation is the City of Hamilton. The powers of the City to regulate foreshores stem from the Ontario Planning Act (S.O., 1983, Ch. 1) and the Municipal Act (R.S.), 1983, Ch. 302).

The City of Hamilton asserts its rivalry to the Harbour Commissioners in its own by-laws. The courts have found such by-laws legal provided they do not conflict with the by-laws of the Harbour Commission, in which case the latter are paramount as the use of shipping and navigation is the paramount use of the Harbour.²⁸

The judicial decisions are of little practical import in determining when the interests of shipping and navigation are of lesser import than the interests of foreshore recreation. This is because the Harbour Commissioners is required by the Federal Government (see below) to operate on a not-for-profit basis, which in turn creates an incentive to pre-empt larger blocs of foreshore land for port purposes. Put another way, the courts

²⁷Mark Sproule-Jones, 1985, 1986A.

²⁸Hamilton Harbour Commissioners v. City of Hamilton et al., op cit., 378.

have sanctioned an over-use of the foreshores for shipping and navigation because the disposition of any surplus revenues (over expenditures) by the Commissioners' do not accrue to non-shipping activities:

"In this context, "profits" does not mean excess of revenue on expenditure simpliciter.... What are excess profits in any particular year I leave for determination in those proceedings or preferably to the common sense of the parties themselves. My decision is confined to the principle that the commissioners do not have as their preponderant purpose the making of a profit on their undertaking.²⁹

In sum, while it may appear that the Hamilton Harbour Commissioners' is operating from a monopoly perspective in its ports management, it is, in fact, subject to rivalry from other ports and transportation modes as well as subject to rivalry in its occupation and use of foreshore lands. The rivalry from other ports extends not only to private and public ports within Canada but also to ports in the Eastern United States, many of which are independent special districts with their own self governing constitution. In this instance, rivalry amongst ports is a function of rival institutional arrangements. Much the same can be said of other transportation modes that compete with commercial shipping. Indeed these other modes extend the rivalry at the constitutional level by virtue of the authority granted to subnational governments to build and maintain roads and regulate truck traffic. Rivalry on the foreshores also stems from rival

²⁹Ibid, 48.

constitutional authority granted to the Province of Ontario and thence to the City of Hamilton to regulate foreshore uses especially for recreational purposes.

The implications of these rivalries for port preference is the subject of Part IV. The analysis becomes even more "micro" at this stage. It assesses port performance in Hamilton Harbour and assesses some of the implications for foreshore recreation by virtue of the rivalries and competition inherent in the constitutional and institutional arrangements.

PART IV

THE PORT OF HAMILTON: CHARACTERISTICS, PERFORMANCE AND IMPACTS

(1) Port Operations

The Hamilton Harbour Commissioners operates as both a landlord and a management organization. On the foreshores that it owns in Hamilton Harbour, it both leases parts of this property and directly manages other parts. In other portions of the Bay it regulates traffic and charges levies for traffic destined for privately owned wharfage. Key destinations in this latter respect are the docks owned by two steel companies, and (to a lesser degree) the private dock owned by an agricultural implement company.

The Port may thus be described as a "mixture" of differing organizational forms, all of which are made possible under the broad terms of reference of the Enabling Act. Section 14, Number 2 of the Hamilton Harbour Commissioners' Act, 1912, states that the Commissioners:

"may acquire, expropriate, hold, lease and otherwise dispose of such real estate, building or other property as it deems necessary or desirable for the development, improvement, maintenance and protection of the Harbour
...."

Critical to an understanding of port operations in Hamilton are the Federal Government requirements over revenue and budgetary policies of Commission Ports. Under the terms of the Harbour Commissions Act (1964), all Commission Ports are required to be self financing, to be autonomous in setting rates and

charges, to adopt a common accounting system (based on historical accrued values) and to operate on a not-for-profit basis. Surplus revenues received by the Hamilton Harbour Commissioners, defined as revenues in excess of costs, are to be paid to the City of Hamilton rather than to the Receiver General of Canada.³⁰

The financial requirements on the Harbour Commissioners create an economic incentive to "overexpand" port operations in the Harbour. They create an incentive to balance the total costs of operations with the total benefits of those operations, rather than to balance the marginal costs of operations with the marginal benefits of revenues derived from operations. Given that the marginal revenues from larger scale operations will be less than the marginal costs of these operations, the Commissioners would be more efficient by restricting the scope of port operations to more limited levels.³¹ However the surplus revenues (profits) generated under such a system would only be lost to the Port of Hamilton.

In addition, port operations typically display large economies of scale that could supplement or replace the previous

³⁰Harbour Commissions Act, (R...S.C. 1970, H-1; see also Ministry of State for Urban Affairs, (1978, 45-46).

³¹The Port provides an illuminating example of the so-called Niskanen (1971) hypothesis about government service levels.

incentive for expansionary activities.³² Viable ports require large scale investments in docks, terminals and especially allied road and rail infrastructive developments. These are largely of a fixed cost nature and thus less sensitive to the volumes of port imports and exports. The greater the volume of traffic, the more that these fixed costs can be spread out over more port users. In short, the larger the port, the lower the costs. This economic incentive has the same expansionary impetus as does the not-for-profit incentive.

These incentives for port expansion require opportunities for capital investment and financing. In historical terms, the Hamilton Harbour Commissioners have pursued the lowest cost options of responding to the incentives. They have filled in the water lots that they own on the edge of the Harbour's waters and either resold these lots or entered into long term lease arrangements with shippers and other industrial users. The Harbour is now 25% smaller than it was in 1850.

Today, with over two-thirds of the shoreline committed to land uses that depend on shipping and navigation and auxiliary rail transportation, and with some waterlots and piers without tenants, the Commissioners rely on leasing arrangements as their major strategy for maintaining the scale of port operations.

Two conclusions may be reached from these preliminary

³²Marginal cost pricing will normally result in financial deficits where there are economies of scale.

economic considerations. First, the Harbour Commissioners operate within an economic incentive system part of which is deliberate Federal Government policy, which would lead to an overexpansion of shipping and navigation uses for the Bay.³³ Secondly, the negative impacts of this overexpansion will be reflected in other uses of the foreshores and waters of the Harbour, as larger blocs of wharfage areas have been constructed from marshlands, creeks and points of access on the Bay. This latter point is dealt with further (below).

(2) Cargo Flows

Hamilton Harbour receives ships some 600 times per annum, with the highest total in the last decade being 959 in 1979 (Sproule-Jones, 1987). Vessel arrivals give an indication of port activity but as Great Lake Ports are experiencing a secular rise in the size (gross registered tonnage) of ships, the number of arrivals in any year is not a good indicator of the tonnage, volume or value of imports and exports.

Cargoes handled by ports are typically classified into dry bulk goods, liquid bulk goods, and general cargoes (or break bulk goods). An example of dry bulk goods is potassium chloride (muriate of potash) which, as a fertilizer, began to be exported through the Port of Hamilton in 1979. The major liquid bulk good

³³The Federal Government has historically provided grants for capital expansion of the Harbour; they are provided on "a case by case basis" for Harbours throughout the country.

"handled" by the Port is that of fuel oils. General cargoes is a general category of goods imported and exported, that do not fall into the previous bulk goods categories. They are often transported by containers which may or may not be broken up on harbour waterfronts into smaller units for transshipment by road or rail. Typical general cargoes handled by the Port of Hamilton are machinery and other capital goods which are exported rather than imported through the Commissioners' own facilities.

Cargo flows for the Port of Hamilton are dominated by two major factors. First, the Port is primarily a port for the import rather than the export of goods. Secondly the tonnage moved to (rather than from the Port) is dominated by the demands of two private docks owned by the steel companies. Rarely do port exports exceed 7% of total Port tonnage, and imports of Steel Inputs are rarely less than 80% of total Port tonnage in the past two decades.

One final feature of the cargo flows through the Port deserves mention. The Harbour Commissioners possess one smaller container crane. This gives the Port a modest ability to expand its break-bulk tonnage that is shipped in containers. Highly specialized container traffic that does not depend on regular scheduled routes may still prefer Hamilton to rival parts. An indicator of the potential capacity to handle container traffic may be given by 1980 statistics when general cargoes were at their recent most peak. Some 227 containers were handled during

that year.³⁴

In sum, the Port of Hamilton is, in terms of tonnes of cargoes imported and exported, the major port on Lake Ontario and the fifth largest port in Canada. Tonnage statistics, like vessel arrivals, can be a misleading indicator of the importance of a port however. The economic value of cargo flows may give a different picture. Unfortunately, the Harbour Commissioners possess no information on the economic value of their cargo flows, a point which is returned to (below).

(3) Performance Indicators and Impacts

The commercial shipping activities within any port can be assessed in two broad ways. First, they can be assessed in terms of physical indicators of performance. Secondly, they can be assessed in terms of financial and economic indicators. Each of these categories will be discussed in turn.

Physical indicators are measures of port performance that are non-monetary in form. Examples include vessel waiting time for berths, or vessel turn-around times at berth. Other examples are labour (and other input) obstacles that restrict cargo flows, or theft and product deterioration on wharfs. These factors may not be easily measured in dollar terms, but they could act to influence both the demand for and supply of wharfage space and allied port activities. Vessel waiting time and turn around time

³⁴Containers are measured by the statistic of Twenty Foot Equivalent Units (TEU), as most containers measure 20 feet by 8 feet by 8 feet. See also Ruppenthal, (1983, 144-146).

are often critical for the viability of port. Congestion and delays in ports may induce the charters of vessels (who are normally different from the shipowners) to seek alternative ports. As one commentator expresses it:

"Considering a ship on an ordinary voyage charter, it is likely that the faster turnaround time will be reflected in less demurrage, more dispatch money (neglecting the customary difference between these) or in a lower charter rate and that the lower stevedoring costs, payable directly by the ship, will (since they must be predictably lower) be reflected in a lower rate for the charter since the charter will have been arranged in a competitive market."³⁵

Financial and economic indicators directly address the economic performance of ports. Indicators include operating ratios (ratios of operating expenses to operating revenues) and increases in the value of capital assets over time.

What these multiple indicators of port performance draw attention to are those aspects of port management that are within the authority of port commissions to deal with, and those aspects are mandated by law of other governments that require a port to act inefficiently. Ports respond to the incentive systems posed by competition and rivalry (with other ports and transportation systems, and with other foreshore users) and they also respond directly to the legal rules that mandate their activities. We shall assess these consequences for the Port of Hamilton.

(a) Physical Indicators of Performance for Hamilton Harbour

(i) Ship waiting time: Hamilton Harbour experiences no

³⁵Goss, (1983) 57.

congestion in its port facilities. It holds berthing capacities for approximately 30 ships, yet reports no waiting time for berths within the past 10 years.

- (ii) Ship turn around time: Turn around time varies as a function of cargoes and weather. As the Port is primarily a bulk port for iron ore and coking coal, and these commodities are offloaded mechanically at private docks, the turn around time is largely a matter beyond the control of Commissioners' management.
- (iii) Theft and product deterioration: The nature of the cargoes handled at the Port restricts the opportunities for theft and product deterioration. Bulk imports have little re-sale value (in small quantities) and the break-bulk imports (especially when containerized) offer little scope for theft. The volumes of fruit and vegetables shipped through the port are small; they consist primarily of soybeans, malts and sugar products. Approximately 75,000 tonnes are shipped annually (mostly imported), which is 3-4 times less in tonnage than in the mid 1960's. In sum, theft and product deterioration are likely to be small. Until 1986, the Harbour Commissioners had their own police force of 17 officers and 3 gate guards. They reported clearance rates of 5% of crimes against property, and 75% of crimes against

persons.³⁶ The private docks maintain their own independent security forces.

- (iv) Physical indicators of input restraints (labour, capital and land) on cargo flows are few. The Port has had no strikes, work slowdowns, walkouts or lockouts since 1961 in terms of the labour relations between the International Longshoremen's Association (locals 1879 and 1654). Adverse labour relations on the private docks can, of course, directly affect Commissioners' income from cargo flows (terminal income and harbour operations), but these relations are beyond Commissioners' management control. The Commissioners' have, under their 1912 Act, no constraints on capital financing or on the sale and disposition of land and water lots that they own. They lack sufficient back-up lands for road-rail-water terminals in ports of the Harbour, but newer infilled water lots may alter this constraint. More important, market demand for the use of Hamilton Port does not indicate changes in the type and character of cargoes; Hamilton and other Great Lakes

³⁶In 1986, the Hamilton Wentworth Regional Municipality began to police the Harbour. Their clearance rates are approximately 19% of property crimes and 76% of person crimes, but because of the unique characteristics of port thefts it is impossible to state that this will change clearance rates. The latter data were supplied by Dr. James C. McDavid from his comparative analysis of police forces in larger cities in Canada (unpublished). All figures are 5 year averages.

Ports will not become major container and general cargo ports because of the physical constraints of the St. Lawrence Seaway and the commercial competition from rival ports like Montreal, Halifax and New York.

In sum, all four sets of physical indicators of performance suggest that the management of the Port of Hamilton is effective within the parameters set by market competition and the non-market factors beyond its influence.

(b) Market Indicators

As has previously been discussed, the Port of Hamilton is subject to Federal Government budgetary and accountancy practices. These dominate the financial and economic management of the Commissioners. In brief, the Port is required by law to set revenues to cover the total cost of port operations. The Commissioners then add extra charges to generate revenues "for future harbour improvements."³⁷

In the past 20 years (1965-1985), excess revenues have averaged 15% of operating expenditures. They have varied from as high as 34% (1980 and 1982) to as low as -6% (1972). They have been positive in all but 4 years.

The growth of the capital assets of the Commissioners

³⁷Revenues come from four sources: (1) charges assessed on the weight or volume of different types of cargo; (ii) charges on vessels for using the Harbour which are again based on the type and weight of cargo; (iii) rental income from properties on waterfront lands that the Commissioners own; and (iv) dockyard income.

tells a comparable story. The average annual growth is approximately 12%, with a range from 0.06% (1974) to 11.80% (1980). These patterns may reflect Federal Government accounting practices as much as the actual value of assets; the Commissioners are required to assess fixed assets at acquisition cost and to depreciate them on a straight line basis at specific rates.

Thus the major market indicators of performance may be indicators as much of compliance with Federal Governmental rules as of the economic performance of the port. Two other factors corroborate this conclusion. First, the requirement to set revenues to cover total operating costs suggests that marginal operations are being cross subsidized from more profitable ones. Secondly the Commissioners possess no information about the economic inputs of different cargo flows that might form a different strategy for risk investment. Studies of other ports suggest that the economic input of general cargo is almost 9 times that of bulk cargo, and containerized cargo almost 4 times that of general cargo (Montreal, 1973). However the risk averse strategies pursued by the Commissioners has proved financially viable, despite secular declines in bulk cargo traffic on the Great Lakes, because of the high costs of relocation for the steel industries located on the waterfront.

Despite these ambiguous market indicators of performance, the physical indicators of performance suggest that the Port is effectively managed and has secured a financially

viable "market niche" in the competitive environment for commercial shipping in the Eastern half of North America. However, the competition and rivalry over the foreshores has some negative impacts as we shall see.

(3) Impacts: The case of Recreational Boating

The rivalry and competition over the foreshores of Hamilton Harbour can affect the multiple uses of the site. The effects of commercial shipping on environmental goods, especially water quality, will not be detailed here. The effects on recreational boating will be (briefly) presented instead, as expansion of commercial shipping facilities directly reduces the available space for pleasure boating marinas, ramps and slips.

Hamilton Harbour possesses fewer opportunities for recreational boating than would be predicted for similar sized communities in the Province of Ontario.³⁸ The economic impacts are shown in Table I. There are substantial economic opportunities foregone because of the under use of the Harbour for pleasure boating (motor boating and sailing). The under use for pleasure boating reflects the overuse of the foreshores for commercial shipping, consequent of the institutional and financial rules for the Port.

³⁸The methodology for these calculations are detailed in Sproule-Jones (19986B).

Table I: Performance Indicators for Pleasure Boating in
Hamilton Harbour

<u>Indicators</u>	<u>Expected Performance</u>	<u>Actual Performance</u>	<u>Deficit</u> ¹
Direct Expenditure	\$ 7,945,742.7	3,033,585.6	4,912,157.1
Total Economic Output	18,593,307	7,098,590.3	11,494,717.7
Income Generated	23,241,633	8,873,237.9	14,368,395.1
Direct Employment	748.4	285.1	462.7
Indirect Employment	1324.7	505.7	819.0
Total Employment	2073.1	791.4	1281.7

Notes

1. Expected Performance minus Actual Performance

In sum, Hamilton Harbour appears to be managed effectively with regard to commercial shipping and navigation. It competes successfully with other ports and transportation systems by developing specialized cargo flows of iron ore and coking coal, and by ensuring quick, safe and non congested docking facilities for ships. Decentralized institutional arrangements and competitive rivalry from other ports create such an incentive system.

However, the Port may be less successful in economic rather than financial terms because, again, of institutional arrangements that induce over-expansion of port facilities and cross subsidies between marginal and more profitable operations.

Finally, other institutional arrangements permit commercial

shipping to compete successfully with rival foreshore activities. The economic impact on recreational boating is a case at hand, where substantial economic opportunities foregone are evident. The next section of the paper -- the conclusion -- offers opportunities for broader generalizations based on these and other inferences.

Part V: Conclusion

This paper has analyzed the performance of one commercial shipping port in one country through the use of physical and market indicators of performance. The indicators of performance of the micro policy case were standard measures applicable to commercial shipping operations in other ports in other countries. At the micro level, therefore, it is not only feasible to analyze policy performance for different policy areas but these analyses will require different and multiple proxies of effectiveness. The indicators will likely be physical as well as economic in character, alerting the analyst to the limits of economic variables as measures of success.

None of the above can be considered an original insight on policy analysis, although the evidence in this paper re-emphasizes that different policy areas will require different measures and studies of performance. It also implies that theoreticians will need intimate knowledge of policy areas to understand performance within and across policy areas.

The major conclusions and generalizations that can be drawn from this paper are methodological and theoretical in character, and reflect on the relationships between constitutional arrangements, institutional arrangements and policy performance. The major methodological conclusions are that the macro and the micro levels of analysis are linked, in practical terms, by institutional arrangements (laws, regulations and organizations) and that constitutional arrangements represent one form of

"capturing" the macroscopic basis of all society. Put another way, the broad social and economic forces in society may be conceptualized as sets of constitutional arrangements (which include, but are more than, written legal constitutions) which in turn affect the operation of institutional arrangements. The full scope of the institutional and constitutional arrangements may be best understood by working from the micro case or cases of policy, and uncovering those institutional and constitutional arrangements of relevance for the case at hand. For instance, our case study of commercial shipping in one port revealed the following kinds of institutional and constitutional arrangements.

- (a) the port authority is a Federally chartered public corporation that possesses delegated legislative powers from the Federal Government, but it also possesses proprietary powers to manage the Harbour that are independent of any level of government and are sustained by court action;
- (b) this port authority competes with other ports in the Eastern half of Canada and the United States, and with other modes of transportation. This implies a network of institutional and constitutional arrangements that structure a competitive environment for the shipment of goods;
- (c) legislative requirements of the Canadian Federal

Government over the financial arrangements of the port affect the range and type of competition for the shipment of goods. They induce on overexpansion of shipping facilities as well as cross subsidization of marginal operations from more profitable ones;

- (d) common law precepts - such as "navigable servitude" - which are only revealed by case law, are major determinants of the character of competition over the foreshores of the Harbour. They may result in substantial economic opportunities foregone for other uses, as well as more uncertain environmental consequences as priority is placed on commercial shipping in the port.

These conclusions suggest that the particular sets of institutional and constitutional arrangements for any policy case may have to be constructed from micro policy evidence, and cannot be intellectually determined in advance of policy analyses. The range of potentially relevant institutional and constitutional arrangements is so large that policy analysts will have few a priori theoretical concepts to disentangle them before conducting applied policy research.

The theoretical implications of the findings of our case study are relevant to the previous methodological ones. We discovered substantial competition and rivalry for the port. The

competition took two major forms: of competition for the shipment of goods and competition over the foreshores of the Harbour in question. In the former case, not only do ports compete amongst themselves and with rival transportation systems (road and rail), the ship owners compete amongst themselves for the leasing of their vessels to the ship charters. The ship charters compete amongst themselves for goods as well as for ship officers and crews. The linkages between these activities extend in scale across the Great Lakes, into the United States, across the Atlantic to European ports, and even to countries like Liberia where many ships are registered. This implies in turn that a large scale network of institutional and constitutional arrangements has an impact on the operations of a single port in one country. Moreover, it also implies that analysts must be aware of multiple constitutional orders and multiple institutional arrangements. In a sense, the institutional and constitutional arrangements for any single port "nest" within a configuration of multiple institutional and constitutional arrangements. We have no reason to believe that constitutional arrangements, institutional arrangements and micro policies are necessarily hierarchically ordered. The rules affecting policy performance for one port may become an incentive system for another port, as the competition and rivalry extends beyond the immediate spatial boundaries of a harbour.

Much the same theoretical conclusion may be raised about the competition and rivalry over the foreshores of Hamilton Harbour.

Pleasure boating as one recreational use of the Harbour may move to other sites, and a different scale of institutional and constitutional arrangements may exist for this use. Similarly, different scales may exist for environmental goods and their institutional and constitutional arrangements. These considerations again raise the question of how institutional and constitutional arrangements for any single policy in any site "nest" within a set of multiple arrangements for that policy. They may also raise the question of how rules for one policy become incentive systems for a different policy that is interdependent with that first policy area.

In sum, we raise the issue of the complexity and multiplicity of constitutional and institutional arrangements. We suggest a method -- working from the micro policy case -- to disentangle these complexities and multiplicities. However, the full character of multiple constitutional orders and their consequences for understanding public policies remains incomplete and likely to be on the agenda of political theory for some time.

Bibliography

- Goss, R. (1983) "Policies for Canadian Seaports", Research Seminar Series, Canadian Transport Commission, Vol. 10, 3-87.
- Ministry of State for Urban Affairs 1978 (1978), The Urban Waterfront, Ottawa.
- Montreal, Port of, (1973), Highlights of the Economic Impact of the Port of Montreal, Port of Montreal Authority.
- Moore, S.A. and H.S. Moore (1903), The History and Law of Fisheries, Stevens and Haynes.
- Niskanen, W.A. (1971), Bureaucracy and Representative Government, Aldine-Atherton.
- Peat Marwick and Partners (1984), Ontario Ports Study, Transport Canada and the Ontario Ministry of Transportation and Communications.
- Ruppenthal, K.M. (1983), Canada's Ports and Waterborne Trade, University of British Columbia.
- Sproule-Jones, Mark (1975), Public Choice and Federalism in Australia and Canada, Australian National University Press.
- _____, (1985), Legal Foundations for the Uses of Hamilton Harbour, Copps Chair Occasional Report No. 2.
- _____, (1986A), An Historical Profile of Hamilton and its Harbour, Copps Chair Occasional Report No. 3.
- _____, (1986B), Pleasure Boating and Hamilton Harbour, Copps Chair Occasional Report No. 4.

_____ (1987), Commercial Shipping and Hamilton Harbour,
Copps Chair Occasional Report, Draft Edition, No. 4.

Weinrib, Lorraine E. (1987), "Two Models of Constitutionalism",
Paper delivered at the Canadian Political Science
Association Annual Meetings, 1987.