REGIONAL INTERESTS VERSUS COMMUNITY INTERESTS: THE FUNDY TIDAL POWER DECISION

by

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B.A., University of New Brunswick, 1979

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF

THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

in the Department of

Communication

Simon Fraser University

April 1985

APPROVAL

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Degree: Master of Arts (Communication)

Title of Thesis: Regional Interests versus Community Interests: The Fundy Tidal Power Decision.

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ABSTRACT

In recent decades, North American governments have favoured the development of large-scale energy projects to meet the social objectives of energy self-sufficiency and accelerated economic growth. These projects have commonly been located near rural communities which usually lack civic organization and experience with large-scale resource development. This thesis examines the behaviour of the residents of one such community when confronted with Fundy Tidal Power. Throughout this examination, the nature of communication between the community and the proponents of the megaproject is understood to be a key variable in the determination of community's support of and opposition to the project.

In 1977 plans for a billion-dollar tidal power project were introduced to Joggins, Nova Scotia. The project, which was to be located adjacent to the community, was sponsored by the Government of Canada and by the Provinces of New Brunswick and Nova Scotia. However, since the preliminary feasibility studies had been conducted with little consultation on local impacts, the very forces which instigated the project undermined its acceptance in Joggins. The community thus developed misgivings about the Federal Environmental Assessment and Review Process planned for Fundy Tidal Power, and began to perceive the process as an alien means of communication which conflicted with the nature of political communication generally occurring in and accepted by the community.

This thesis presents a historical account of the community's will to survive and the manner by which this will conditioned the community's attitudes toward development projects. The thesis also examines the factors which influenced Joggins' participation in the Fundy Tidal Power decision-making process, and propelled the community to mobilize its own information and participation forum.

The thesis concludes that the Environmental Assessment and Review Process proposed for Fundy Tidal Power unduly limits the opportunities for public involvement, thereby thwarting a complete assessment of local impacts as well as subsequent intervention or compensation for losses. An interactive process of communication is therefore proposed as one of the primary means of reducing the friction surrounding resource development projects, and as a basis for anticipating and addressing the negative effects of such projects.

DEDICATION

To my parents, Conard and Betty Ruth Stairs, who ministered at the Springhill No. 2 pit-head during the October 1958 "bump."

A WAR OF IDEAS

Do not let it be said that we cannot afford it.

If we can afford the South Saskatchewan Dam; if we can afford the Crow's Nest Pass; if we can afford the Colombo Plan; if we can afford to spend a-billion-and-a-half dollars on Defence; if we can afford the CBC; if we can afford $100 million as a preliminary budget to celebrate our Centenary; if we can afford these and many other items of our national expenditure which we could name, then it cannot be said that we cannot afford Chignecto [Canal and Tidal Power Project], a self-liquidating national investment that would transform this region of Canada and make it a land of plenty.

Remember finally that the war between freedom and communism cannot be fought with bayonets and bullets, not even with nuclear bombs or Bomarc missiles.

It is a war of ideas.

Freedom can only survive if under its banner want and misery are banished.

- Michael Wardell, retired Brigadier,
  Secretary of the Chignecto Canal Committee.
  From a speech to the Lancaster and Saint John, N.B.,
  Kiwanis Clubs, 16 October 1961.

ACKNOWLEDGEMENTS

I would like to express my sincere appreciation to the many individuals who assisted me in this work, especially Dr. Robert S. Anderson, my senior supervisor; James W. Wilson, my external examiner, committee member, Liora Salter; my employer, Dr. Terrance S. Thompson; the administration manager for NB Power, William Gerhardt; field advisors, W. Stephen Macdonald of the Dalhousie Institute of Public Affairs and Dr. Will van den Hoonard of the University of New Brunswick; Dr. Audrey Doerr; Charles M.M. Ferris; the citizens of Joggins; the Municipality of Cumberland; Laurico Services; Carol Randall; and my loving spouse-editor, Susanne Alexander.

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PREFACE

The author is grateful to the New Brunswick Electric Power Commission for the Post-Graduate Assistance Program which enabled this work. It should be noted, however, that the thesis reflects the opinion of the author and not that of NB Power or its officials.

CHAPTER I

INTRODUCTION

Fundy Tidal Power is both a historic and a contemporary political issue in the Maritime Provinces. At Port Royal, one of the first settlements established in the region, tidal energy was used to operate a grist mill as early as 1607.[1] In 1915 the first scientific experiments with tidal power generation were undertaken on the northwest coast of Nova Scotia by scientists from Acadia University,[2] and following the end of the second World War, tidal control dykes conducive to power generation were constructed at various Bay of Fundy sites as part of a marshlands reclamation program initiated by the federal government.[3] Fundy Tidal Power did not however become a subject of public debate until the early 1960s when a vocal Maritime lobby group sought to bring about the construction of the Chignecto canal and tidal generation complex at the head of the Bay. Although the complex was never constructed, the committee did gain sufficient momentum to provoke a federal/provincial study of tidal power which, during the mid-1970s, led to further investigations. As a result of these studies, their favourable conclusions, and the support of the governments of Nova Scotia and New Brunswick, the construction of a major tidal power facility in the Bay of Fundy seemed imminent, if not inevitable, to Bay-side residents by 1977.

This thesis examines communication between the regional governments, the initial investigators and advocates of Fundy Tidal Power, and Joggins, Nova Scotia, a community located adjacent to the preferred construction site on Cumberland Basin. Throughout this examination, the relationship between these two levels of society and the nature of their communication are understood to be key variables in the determination of the community's support of and opposition to the project.

Although the title of this thesis, "Regional Interests Versus Community Interests: the Fundy Tidal Power Decision," implies conflict, it must be noted that this conflict was latent rather than actual: construction never began on the tidal power megaproject. Throughout the mid-1970s, the governments of New Brunswick and Nova Scotia supported the construction of the facility, and made substantial investments in the preliminary feasibility studies. Indeed, by 1979, the three Maritime governments through their provincial electrical utilities had signed a draft memorandum of understanding with the federal government which foresaw the creation of the Maritime Energy Corporation. This federally-chartered crown corporation would co-ordinate the day-to-day operations of a Maritime Integrated Electrical System, make arrangements for profitable regional imports and exports of electricity, initiate research and development projects on behalf of the three utilities, and sponsor the construction and operation of major electrical generating stations for the region such as the Point Lepreau Nuclear Generating Station in New Brunswick and the proposed Fundy Tidal Power project in Cumberland Basin.[4] By June 1979, however, discussions on the formation

of the Corporation had collapsed as a result of interprovincial and federal/provincial discord. The federal government, much to the consternation of its provincial counterparts, insisted on more control of the Corporation while denying it use of the preferred federal credit rating. The newly-elected Progressive Conservative government of Prince Edward Island led by the Honourable Angus MacLean refused to participate in the construction of the Point Lepreau Nuclear Generating Station in New Brunswick. And, in light of public opinion, the government of Nova Scotia shifted its priorities from large-scale regional electrical developments (and from participating financially in the construction of a nuclear generating station) to coal-power and a small-scale tidal power project in the Annapolis Basin.

From the revitalization of the Chignecto Canal Committee to the conclusion of the fieldwork for this study in 1979, neither the regional governments nor the community consistently supported or opposed the construction of a large-scale tidal generating station. Regional interests fluctuated as a result of changes of government, inter-provincial and federal/provincial discord, economic swings, technological change, and competition between tidal power and other sources of electrical energy, particularly coal- and nuclear-generated electricity. Although such fluctuations are significant in a study of Fundy Tidal Power, they are not germane to this examination.

In a similar manner, the residents of Joggins varied in their support of and opposition to the construction of the tidal generating station. There were however signs of latent conflict. At the

conclusion of the preliminary tidal studies in 1977, the division of interests between the regional governments and the residents of the Cumberland Basin communities began to coalesce and polarize. This polarization was further exacerbated by the distribution of information on the environmental assessment process by the Federal Environmental Assessment and Review Panel in 1978.

In development projects backed by the state which result in a polarization of interests, positive interest has historically been expressed by a proponent which is supported by private-sector lobbies and which acts as an interlocutor to the elected provincial and/or federal governments. Negative interest, or opposition, to a project has generally begun in the development area where the greatest impacts are experienced. Such opposition has often been propelled by community interest groups aligned with or instigated by public and environmental interest groups, or municipal and environmental planning agencies. Opposition has also depended on the community's history of development, its role in the initiation of the project, its perception of impact, and the cohesion of local opinion towards the project.

Through the interplay of such actors and agencies, development issues create a communication environment which comes into being long before the project physically materializes. Such a communication environment consists of both facilitators and barriers of communication and the tactical deployment of both by the interests in development decisions, whether through direct interaction or through mediating entities. Both conscious and sub-conscious influences may therefore

impinge upon a communication environment, and may give rise to circumstances beyond the volition, control, or comprehension of all or any of the interests represented.

Similarly, a communication environment may outlive the economic development which spawned it. In Joggins, for instance, the community's will and ability to encounter Fundy Tidal Power was conditioned by the formative influence of the mines as well as their social and psychological legacies. One of the primary objectives of this thesis is to examine the influence of the mines upon the community structure in Joggins, and to illustrate how previous experience with a resource industry both conditioned and informed the community's response to subsequent development.

The thesis also provides an examination of both the formal and the informal patterns of communication between the project proponent and the community in a development area, as well as an assessment of what communication behaviour is perceived to be appropriate by each of these levels of organization. Although formal channels of communication including public inquiries and environmental impact assessments have received increased academic attention during the past decade, little heed has been given to the informal determinants of behaviour and communication which can exert a substantial influence on the final outcome of development decisions. Such factors, including social encounters or networks, the behaviour of the proponent, the rhetoric of the politicians, the influence of the mass media, and the activities of the environmental interest groups, weighed heavily on the Cumberland

Basin communities and strongly influenced the attitudes adopted by their residents.

Finally, and as a corollary of the aforementioned objectives, the thesis provides an examination of the project feasibility studies for Fundy Tidal Power, the proposed impact assessment, as well as the actual and potential relationship of informal channels of communication with the public participation program, which was introduced in 1977 as part of the Federal Environmental Assessment and Review process. Jerry Delli Priscoli suggests that "... to involve the public, [the planner] has to know who [to involve]. To know who, the planner must assess impacts. But to assess impacts, the planner must understand perceptions, needs and "bitches" ... involvement programs depend on impact analyses which in turn depend on involvement programs."[5] Since 1973 government intermediaries in Canada have sought to create formal opportunities for communication between the public sector proponents of resource development projects and intervening citizens in order to permit the investigators of resource development projects to understand community impacts and perceptions. The efficacy of such programs, however, has often been dependent upon the scope, timing, and design of the public participation programs; in other words, on the definition of appropriate communication behaviour accepted by the assessment panel. In the case of Fundy Tidal Power, the difficulty of implementing an effective public participation program was compounded by the fact that the Federal Environmental Assessment and Review Process was based on a process adopted by the Environmental Review Agency in the United States. This

litigious, adversarial process introduced an alien context for decision-making to northwestern Nova Scotia. When combined with the secretive manner in which the preliminary tidal studies were conducted, the new terminology and acronyms introduced to the community, and the barrage of information about Fundy Tidal Power promulgated by the popular media, the process resulted in serious misgivings by community residents. Thus, by 1979, well before the public participation program was due to be launched and as a result of their experiences with the preliminary studies, the residents of Joggins and the neighbouring communities demonstrated some dissatisfaction with the relative emphasis on information-giving and decision-making within the context of the Environmental Assessment and Review Process. Indeed, many residents perceived the Fundy Tidal Power Phase I studies to be a site selection process which had placed a considerable burden of proof upon the community to demonstrate the unacceptability of the project, or to identify mitigative or compensatory measures.

The objectives of the thesis are founded on two methodological premises: (1) that a community's previous experience with industrial or resource development can yield as much specific information about the community's potential participation in subsequent resource development projects as can comparative or predictive tools;[6] and (2) that over a fixed period of time, communities are capable of demonstrating a broad spectrum of opinions about a project, insofar as development projects can have iterative influences on adjacent communities.[7] The thesis will also demonstrate that the predictions of impact assessments can

themselves be altered by such factors as political lobbying for the project, the context of the initial announcements and the reflexivity of community impact assessment in addition to the kind of community participation permitted within the context of the decision-making process.

The body of the thesis thus begins with a review of the full coal-mining development cycle in Joggins and provides an examination of the print media accounts, political speeches, correspondence of community organizations, government documents, and interpersonal communication within the community. This information is supplemented by interviews, which were conducted between May and October 1979, with community residents, interest group members, and government officials.

In order to describe communication within Joggins and communication between Joggins and "the outside," the thesis divides the community's development history into four major eras: an era of resource and community development, 1847-1918, during which the patterns of communication were strictly defined by the economic interests which controlled the coal resources and literally "ran" the community; a town council era, 1919-1949, during which the community retained its wardship under the mine management, despite an awkward semblance of local polity; an era of post-war decline, 1950-1960, during which the community lost the mines, its railroad service, and a key local entrepreneur; and a revitalization era, 1961-1979 (concluding with the completion of the fieldwork for the study). The latter was marked by the organization of several Boards of Trade and a pro-industry, pro-Fundy Tidal Power

movement. Ultimately, it resulted in increased political will and concerted efforts by community residents to secure community improvement grants from municipal, provincial, and federal governments.

The thesis then proceeds to describe the technical and political momentum attained by Fundy Tidal Power during the 1960s and 1970s. Specific communication factors such as proprietary rights to technical information and the political activities of the Chignecto Canal Committee are evaluated, as are the findings of the Fundy Tidal Power Review Board and the organization of the task areas designated in the Phase I studies.

Although the Phase I studies demonstrated a definite preference for development of the Cumberland Basin site near Joggins, it is important to note that the implementation of the project was, at the conclusion of these investigations, contingent upon additional study and federal/provincial accord. In 1977 it appeared that both conditions would be fulfilled. In January the First Boston Corporation was engaged as a financial advisor for the Corporate Financial and Legal Sub-Committee of a proposed Maritime Energy Project. Later in the same year, a feasibility study on the formation of a Maritime Energy Corporation was conducted, and the general organizational objectives for the structure were established.

Fundy Tidal Power also appeared to coincide with the enduring political will of the Maritime region, despite its economic uncertainties and unknown environmental consequences. Chapter IV provides a general overview of the popular support for the project which

was expressed in the print media by journalists and politicians prior to the release of the Phase I studies in 1977. By and large, the media maintained an overwhelming "tide of support" for the project prior to the release of the preliminary studies and the politicization of public interest groups. In fact, during this period the media more often criticized the investigators of tidal power for their laborious studies and indecision on the project, than for their lack of consultation on possible environmental or social impacts. Should one compare the media debate on tidal power with that on nuclear power (generated by the construction of the Point Lepreau Generating Station in New Brunswick during the mid-1970s), it seems apparent that tidal power was generally perceived by the media to be a much more benign alternative.

Chapter V resumes historically at the completion of the Phase I studies in 1977, and includes a short overview of the role of the public in decision-making processes associated with large development projects. The chapter also describes how formulae for project assessment evolved during the 1970s to include environmental and social considerations, and documents the shift in public opinion about Fundy Tidal Power. The latter resulted from changes in the communication environment which initially mobilized support in Joggins for Fundy Tidal Power, and later prompted misgivings about the project and the environmental assessment process.

The thesis then provides an analysis of the "Public Information Participation Program" designed by the Working Group on Public Participation for the Federal Environmental Assessment and Review Panel.

Although this program was never brought into the scrutiny of a public meeting, its inadequacies are apparent from its design and philosophy, as well as from the community's manifest frustation with the Fundy Tidal Power assessment and decision-making process. This frustration was compounded by the treatment which the community had received during the preliminary Phase I studies, and resulted in the implementation of a community-designed "public information and participation program" three years prior to the anticipated commencement of construction.

The final chapter extends the communication analysis by identifying the theoretical basis for community participation in the decision-making process. Alternative philosophical and methodological perspectives are discussed so as to provide a context for both actual and potential communication regarding Fundy Tidal Power. The roles of the regional advocates, the community, and the assessment and review panel are then re-examined. Finally, a dynamic interactive communication process is advocated which seeks both short-term, project-oriented goals and long-term, democratic objectives.

Although long-term objectives may be seen to be more compatible with the political aspirations of the community, it must be recognized that Joggins also demonstrated some ability to reconcile itself to "the greater goal" of regional economic prosperity promised by advocates of Fundy Tidal Power. The community was founded as a result of the coal mines, a resource industry; and it paid dearly for its internal growth and survival. Joggins' history of development thus provides considerable insight into the values represented in the community, and the

nature of communication within Joggins prior to the more intensive Fundy debate - insight which is fundamentally important when attempting to comprehend the impact of a subsequent resource development project upon the community.

CHAPTER II

RESOURCE DEVELOPMENT AND COMMUNITY DEVELOPMENT IN JOGGINS

Under this river
red with marsh mud
a black vein branches
and narrows, lifeblood
nearing a dead end.
Twice daily the tides
bore the river banks,
now pocked as a miner's lung,
a cratered cancer specimen.

Bergs, the size of boxcars,
career into brackish waters,
Quake the bank,
lie on the riverbed,
their peaks jutting out.
I walk the dyke,
bystander to this grand spectacle,
which promises openness,
a return to colour.

While below
(where it is midnight always)
blackened men, their faces
smeared with fossil,
load down the legacy laid down once only.

Spring ice cleaves, and something
in me gives way,
remembering the news
that wakened this dark town briefly -
A man crushed under an avalanche of blackness,
just last week.

River Hebert, April 1978
- Harry Thurston [1]
Barefaced Stone

Throughout its history the community of Joggins has been dominated by coal-mining. As early as 1605 French and English explorers had extracted coal from the shores of Cumberland Basin;[2] in 1847 the General Mining Company of London opened the first full-scale mining operation in the community;[3] and in 1919 the development of the mines gave impetus to the incorporation of the town.[4] In subsequent years the fortunes of the community have waxed and waned with the fortunes of the mines.

The following chapter examines the history of Joggins and the effects of the coal mines upon the community's structure and its communication environment. The chapter itself is divided into four sections:[5] Resource and Community Development, 1847-1918; The Town Council, 1919-1949; Post-War Decline, 1950-1960; and Revitalization, 1961-1979, each of which identifies and examines a period of formative development for the community.

Although the historical details included in this chapter have been verified through the examination of public and private records[6] and the existing newspaper accounts, it should be noted that the history of the community as described herein is essentially an oral history, one which has been reconstructed through numerous interviews with present and former residents of Joggins. Through it, the author identifies the expectations which were established during the community's history of resource development, expectations which during the 1960s and 1970s influenced the community's perception of and reaction to Fundy Tidal Power.

Resource and Community Development: 1847-1918

In 1847 the General Mining Company of London opened a coal mine in Joggins, Nova Scotia. Although coal had been mined much earlier in the community's history, the General Mining Company was the first enterprise to establish a commercial-scale operation in Cumberland County.

Prior to 1847 the Yorkshiremen and Acadians who settled along the Cumberland Basin had engaged in a mixture of mining and farming activities, a mixture which is still evident in some Cumberland County communities. Grindstone quarries, lumber mills, and fishing operations were additional sources of employment and furnished for many communities a diversified local economy (see Figure 1).

As a result of its extensive coal deposits, fog-bound micro-climate, and relative geographic isolation, Joggins did not develop a mixed economy. Transportation to neighbouring communities, both by land and by sea, was complicated; expenditures on the local infrastructure were generally initiated by territorial governments or by the coal-mining entrepreneurs; and, since these expenditures were often contingent upon the markets for coal, the staple resource, Joggins experienced extended cycles of development and decline. Government policies, fluctuations in the coal market, and technological development were both a boon and bane for residents of the community, and transportation linkages improved and deteriorated with these cycles.

The autocratic grip of the mining companies was not however without precedent in Cumberland Basin. Prior to the appearance of the first commercial mining company in 1847, Amos "King" Seaman and his business

associates, the Reads of Sackville, controlled an extensive array of industries in the Basin communities including grindstone quarries, coal mines, general stores, shipping operations, lumber mills, and extensive farmlands on the marshes dyked by the early Acadian settlers.[7] The majority of these enterprises decayed following the opening of the commercial mines in 1847 and the death of the "King" in 1864. Yet, the Seaman dynasty served as an influential entrepreneurial model for subsequent enterprises in Cumberland County.

At its beginning, the mine operated by the General Mining Company was a modest operation which hoisted approximately 40-60 tons of coal per day.[8] In 1856, however, a customs office was opened to process coal exports to New England,[9] and by 1867 the mine was large enough to sustain a small settlement with a church and a community store.[10]

Both the grindstone quarries and the local fishery initially benefitted from the establishment of the mines in Joggins and the operation of a customs office. These enterprises could not however provide a major economic impetus to the community, and gradually they were eclipsed by the mines.

As the General Mining Company procured larger markets for coal, the Joggins No. 1 pit began to flourish (see Figure 2). A large proportion of local workers found employment "underground," and experienced miners were brought in from the United Kingdom, continental Europe, Cape Breton and Minto.[11] As a result of this influx of personnel and the strain which it placed on the local infrastructure, the Company assumed a variety of administrative responsibilities: it developed roads, built

houses and barracks to accommodate its employees, developed enterprises which supported the mines including lumber mills and equipment maintenance plants, and created commercial opportunities for local entrepreneurs. By 1867 both the recent immigrants and the life-long residents of Joggins were dependent on the mining company for a myriad of material and economic needs.

In 1871 three prominent Saint John, New Brunswick, merchants led by Alex Barnhill formed the Joggins Coal Mining Company and purchased the assets of the General Mining Company.[12] A year and a half later, frustrated by competition from the rail-serviced Springhill mines, Barnhill and his associates sold the Joggins mines to the Joggins Coal Mining Association[13] which, a few years later, formed the Joggins Railway Company.[14] Recognizing the necessity for a year-round transportation linkage with the mines, the company lobbied the federal government to extend the Intercolonial Railroad to Joggins. Eventually the Company found success and as a result of this combination of entrepreneurial initiative and government intervention, the "Joggins Road" was opened in 1877, thereby restoring the vitality of the mines and the fortunes of the community.[15]

By 1903 the mines had changed ownership several times and Joggins had acquired an air of prosperity. The output of the mines had climbed to 500 tons per day, and their owner, the Canada Coal and Railroad Company, had developed a vigorous trade with New England.[16]

In 1909 the Maritime Railroad and Power Company, a local firm owned by William and David Mitchell, purchased the mines from Canada Coal.

The new owner was a model of horizontal integration. Having purchased the Joggins mines from Canada Coal, the company owned not only the coal mines in Joggins, but also the shipping operations, both marine and rail; associated lumber and construction enterprises; and a coal-burning electrical generating station in Maccan, a community adjacent to Joggins. The latter permitted the company to sell "coal by wire" to the developing industries in neighbouring Amherst and to "electrify" both the mines and the community.[17]

For the next two decades, the Joggins mines prospered. Production peaked at 1000 tons per day in 1908[18] and by 1909 approximately 1200 workers were employed by Maritime Coal.[19] A former school teacher still resident in the community estimates that approximately 275 children were enrolled in the community school in 1911, a year in which Joggins' population reached 1648[20] (see Table 1).

During the early 1900s a large percentage of the community residents were employed by Maritime Coal, either in the mines or in various support industries. As a result, Joggins acquired the characteristics of a "company town," and its residents came to be perceived as wards of the mining company by county, provincial, and federal governments. As the community warden, the company provided employment, housing, and the community infrastructure and created opportunities for commerce and recreation.

The Town Council: 1919-1949

The incorporation of the town of Joggins Mines in 1919 is an

important historic event for many Joggins residents.[21] The incorporation itself had been preceded by brisk, optimistic coal sales in the early 1900s, by the opening of a coal-fired electrical generating station in nearby Maccan in 1907, and by the first World War which had propelled the mines into full production.

Following the return of many veterans to the community at the end of the war and during a period of apparent prosperity, the owners of Maritime Coal provoked the formal incorporation of the town through the influence of their employees who resided in Joggins and through their association with the community's merchants. Although one interviewee stated that the incorporation was simply a means of "keeping River Hebert merchants out,"[22] it is probable that it was also an attempt by the mining company to divest itself of its 1700 wards in Joggins. Prior to the incorporation of Joggins Mines, the costs of support services including street and sidewalk maintenance, policing and building inspections, streetlights, schooling, fire prevention, health care, and recreation were assumed almost entirely by the mining company. Following incorporation, such costs were borne only partially by the mining company. The remaining costs were assumed by the residents of Joggins through local taxation.

One should not assume however that the company relinquished all of its interest in Joggins following the town's incorporation in 1919. Rather, Maritime Coal and its successors maintained a peculiar, but extraordinarily effective, means of control over the town. Since many of the company's managers and administrators were community leaders,

respected in Joggins because of their economic and organizational status, they were also elected to the Town Council and occupied key positions.

Between 1919 and 1949 the town saw some success. In 1922 N.T. Avard, an Amherst industrialist, acquired Maritime Coal, Railroad and Power Company which during the twenties and under Avard's direction became a leading force in coal sales and electrification in northern Nova Scotia.[23] In the ensuing years a United Church was built in Joggins, wooden sidewalks were constructed, a credit union and a liquor store were opened, and two hotels were built.

A major fire on 30 December 1928 led the community into a downward cycle which lasted throughout the Great Depression. Until 1933 the markets for coal were generally depressed and resulted in the closure of the principal mine in Joggins, the No. 3 pit; the removal of the "Old Joggins" bankhead; and the departure of many miners from the community.

By the end of 1933, however, market conditions had improved and Joggins was experiencing a resurgence. This resurgence by the marketplace was followed by the introduction of wartime industries which Avard exploited like "a spider in a web."[24] Thus, once again Joggins attracted a wave of immigrants from New Brunswick and Cape Breton. This final boom ended with the war in 1945.

Throughout the 1940s, the Town Council continued to fight for improved fire and medical services. The mining company however was faced with technological change, general economic decline, and vigorous competition from the Cape Breton mines. As a result, production slowed,

and the town was confronted with a series of losses. In 1942 the Bank of Nova Scotia moved to River Hebert, and the community drug store folded.[25] In 1947 a strike by the United Mineworkers' Union closed the Hillcrest pit for ninety-nine days.[26]

By 1948 the Town and its citizens faced serious financial crises: the Council refused to fund both dust control on the Town's streets and the community sewing classes; the Town was unable to collect fees and taxes from residents whose accounts were in arrears; and the Town staff were reported to be both "underpaid" and "mismanaged." In 1949 the mayor abdicated and the town folded.

It is perhaps ironic that the mining company, although unwilling to assume civic responsibility once more, played a key role in the dissolution of the municipality. Councillor Taylor (the mine manager) negotiated the dissolution of the Town with both county and provincial governments, purchased the town hall, and ensured that the tools which were owned by the works department were conveyed to the Volunteer Fire Department, an organization which he had formed in 1947. In 1950 the former deputy mayor (the mine accountant) was installed as County Councillor.

Post-War Decline: 1950-1961

In 1950 two County Councillors, one from River Hebert and one from Joggins, represented Cumberland District No. 5.[27] The district also appointed several officers who organized municipal elections for the County and performed supplementary duties for the councillors. Thus,

upon the dissolution of the town, Joggins inherited from the County a complex administrative system which included numerous county officers, planning and administrative agencies, and several standing committees of council. As a result, the former town lost a measure of control over its political and economic destiny.[28]

As the former deputy mayor of the town, Councillor Vickery held influence of a precedental nature in Joggins and, on many occasions, he acted as a broker for various community groups who sought to retain or to develop community services.[29] At the beginning of his term, he was able to secure arrangements with Maritime Coal to keep the streetlights burning and to establish various committees which provided essential services to the community. Joggins had however entered the county government during a period of general post-war decline and, as a result, the councillor and the other community leaders were unable to cope with what appeared to be insurmountable economic odds. The community therefore continued to look to the mines for its salvation, but the mining company was both unwilling and unable to reassume its role of warden.

Coal production in Joggins had reached a war time peak in 1942 during which the mines produced a total of 268,500 tons of coal and employed approximately 355 people.[30] As Figure 3 depicts, production at the mines remained relatively stable until 1947 when the total output of the two Joggins mines, the Hillcrest and the Bayview, dropped to less than 50% of the tonnage produced in 1942. In 1949 the Hillcrest mine closed, and in 1950, Ossie Fife, the only Joggins native to manage a

mine, died.

Although Fife's son-in-law, William Taylor, a British immigrant recruited by N.T. Avard, and Taylor's half-brother, Robert Hedley, continued to manage the mine and develop exploration seams, the industry was no longer as prosperous as it once had been.[31] Throughout the 1950s sales plummeted, and production slowed by 3000-5000 tons per year.[32] By the mid-1950s the Canadian Electric Plant in Maccan was one of the mine's few customers, and the Joggins Coal Mining Company became a recipient of subsidies from the provincial government. In 1959 William Taylor died. Shortly thereafter, N.T. Avard sold the Canada Electric Plant to the provincially-owned Nova Scotia Power Corporation and closed the Joggins mines.

Although several attempts were made to revive the mines after their closure by Avard in 1961, it is evident that the economic impetus which the mines had once provided to the community had diminished considerably by early 1950s and had disappeared altogether by the early 1960s (see Table 2). During that decade, the more aggressive miners found work at the pits in River Hebert and Springhill; others moved to Halifax, Cape Breton, Ontario, and Alberta;[33] still more sought labour jobs with Cumberland County industries or remained unemployed, collecting benefits from unemployment insurance programs, social assistance programs, or from miners' pension programs.[34] Property values plummeted. Store-keepers, the only remaining economic force in the community, faced decreased sales and increased local credit. By 1956, prompted by few employment opportunities and little production at the mines, the

population of Joggins dropped to 873 from 1,049 in 1951.[35] By 1966 less than 800 people remained.[36]

Although the mines were no longer an important economic force by the mid-1960s, the social structure which the industry had so carefully nurtured in the community remained. So pronounced was the social stratification that even the layout of the community was ordered by class. The centre streets, particularly Main Street, were the domain of the elite: the families of mine managers, storekeepers, and various other community leaders. Conversely, the immigrant miners who were more often than not untitled landholders, or squatters, lived on side-streets which bore such colloquial names as the Pit Road, Hottentott, and Blacktrack.[37]

Territory was similarly defined in the influential Roman Catholic Church. The centre rows were generally occupied by the families of mine managers, merchants, and other community leaders, while the miners and their families were relegated to the "miners' rows" along the sides of the church. Upper-class women belonged to the 500 club, a social clique with a strictly-defined membership; other women belonged to comparable, but less prestigious, groups. According to one embittered resident, certain community institutions were more difficult to enter than a "court of law."[38]

During the autumn of 1961, following the closure of the mines and the general exodus of employable miners from Joggins, the "Joggins Road" was terminated. For seventy-five years the rail-line had been coal-carrier, transit system, employer, and symbol of prosperity. An article

printed in the Amherst Daily News described the closing of the line as "The End of an Empire" but sagely stated, "Perhaps the inevitability of the closing and the time they had to become resigned to it accounted for the lack of regret among the people of the three communities it served."[39] While poorer residents of the community tended to see the empire's end in more critical terms, influential community members crowded aboard the train for the final run.

Revitalization: 1961-1979

Joggins responded to its development crisis with a mixture of despair and heroic determination. On the one hand, the closure of the mines was accompanied by increased alcoholism and drug abuse, violence, family disintegration, and welfare dependency.[40] On the other hand, the crisis provoked countless examples of tenacity.

The traumatic loss of the coal industry was not however unique to Joggins or to Nova Scotia. In 1959 William Marsh, a prominent United Mineworkers' Union organizer in Nova Scotia, observed that 500,000 tons of Nova Scotia coal were being displaced by heating oil each year and that the UMW membership in the province had fallen from 13,000 in 1949 to 7,500 in 1959.[41] By the early 1960s the expression "Atlantic regional disparity" had become a cliché in both regional and national political circles.

Maritime politicians as early as Joseph Howe had warned that "hooped around in an enclosure with three or four millions of people," the Maritime Provincies were less viable economically than when "the

whole world of trade lay open to them."[42] Regional economists still blame the "dead hand" of federal export, transportation, and energy policies for the economic disparity of the region, as does Robert Coates, the present Member of Parliament for Cumberland County.[43]

It may be argued that both Joggins and the province of Nova Scotia failed "to take off" economically.[44] Dependency theorists have stated that certain structural factors resulted in a hinterland/metropolis relationship between Canada and the Maritimes, and that large scale energy developments could in fact accentuate the "underdevelopment" of the Maritime region. By 1961 Joggins had lost its staple commodity, coal; a major transportation link, the railroad; and its principal community leader, William Taylor. Regional disparity was just one more hurdle in the way of revitalization.

Throughout the post-war decline, Joggins had maintained political leverage through the influence of its community leaders and through the ties which the community maintained with industrialist N.T. Avard. As these ties weakened, a sense of urgency was created among the entrepreneurs and community leaders. And, with the closure of both the mine and the railroad in 1961, Joggins became a "kingdom" in search of a "king."[45] Existing community institutions, particularly the County Council, the Citizens' Committee, and the Volunteer Fire Department, rallied in support of community development initiatives, and new community institutions including a Board of Trade were created through the inspiration of "outsiders." All of these groups solicited both private industry and government for development aid.

Since its formation in the late 1940s, the Joggins Citizens' Committee has played an important role in the community despite its informal status. During the town council era, it lobbied for fire protection as the council relinguished its duties. Later it assumed a comprehensive mandate for local services. Although support for the Committee was often contingent upon the issues at hand, the Committee became formally organized in the late 1960s, with an elected chairman and representation at large from the community. Led by local merchants and some of the mine management personnel who remained in Joggins, it lobbied governments for improved services and pressured the County Councillor on such issues as sewer and recreation.

Unlike the Citizens' Committee, the Joggins Volunteer Fire Department is a legacy of William Taylor and Maritime Coal. Quartered in a "town hall" complex on a prime Main Street location, the department functions in part as a municipal staff for the community. Throughout the 1960s and 1970s it operated a large meeting hall which was used by both the Citizens' Committee and the Board of Trade; a well-equipped kitchen which catered to community functions; and a comfortable pool hall-bar.[46] Its success may be attributed to the personal energies of the fire chiefs and the squad, and to the cohesion among its members. According to Archie Michaels, the fire chief in 1979, one Amherst industrialist had commented, "The Joggins Fire Department stands out ... you have a special kind of people ... the business people, a class aside and above ... the Rotary-type person."[47] Indeed, following the closure of the mines, the Department acted as the curator of

community spirit by offering fire protection, pumping flooded basements, rescuing lost children, and demolishing and removing unsightly buildings,[48] thereby giving a strong sense of identity to its twenty-two volunteers.

The Citizens' Committee and the Volunteer Fire Department were however only two of the many community organizations which seemed to proliferate in Joggins following the closure of the mines. Through the efforts of "newcomers" who brought high ideals, organizational skills, and renewed energy to the community, organizations such as the Mine Consultative Committee, the Life Skills Project, the Joggins Board of Trade, the River Hebert School District Recreation Committee, and the Joggins-River Hebert Community School Committee were formed.[49] All of these groups pledged to maintain and revitalize the town, although their numbers and competitive actions sometimes detracted from more concerted development activities.

One of the most interesting examples of the organizations which were formed to save Joggins resulted from a Sunday afternoon meeting on 11 February 1962. On this date, the Joggins Board of Trade was formed (see Table 3). At the second meeting of the Board on 18 March, with the manager of the Maritime Chamber of Commerce in attendance, a full state officers was elected.[50]

From the outset, the focus of the Board's activities was local and regional development.[51] In their attempts to bring industry to Joggins, the Board corresponded with both regional and national leaders, all of whom were suprisingly attentive.[52]

One of the Board's first successes was the opening of the Bayview Mine in 1963.[53] Thereafter, the Board demonstrated interests ranging from transportation, manufacturing, tourism, and communications to tidal power and port development.[54] In 1966, with the assistance of the Cumberland County Liberal Association, the Board launched a concerted effort to acquire a heavy water plant.[55] This effort supported what the Board called "... a bold and imaginative stand in the face of strong opposition from other areas."[56] By 1968, however, the Board had wearied of lobbying and compiling statistics, and lacking consistent leadership, the Joggins Board of Trade was dissolved.[57] The local development focus consequently shifted to the neighboring community of River Hebert where Ron Beaton, the River Hebert mine manager, and Reverend Miller, a United Church minister, had established a Coal Mine Consultative Committee.

Impetus from the mine committee eventually carried over into the formation of the Joggins and District Board of Trade in 1970, led by Reverend Miller, Father Robertson, a Catholic priest from Joggins, and several community leaders from Joggins, River Hebert, and Maccan.[58] The first meeting, held on 28 January 1970 in the River Hebert School, attracted approximately twenty people and was chaired by Norman Mansour, an Amherst businessman, and Reg Clark, a representative of the Maritime Provinces Chamber of Commerce.

Throughout its two years of operation, this Board focussed on mining, industrial development, and road conditions. On 14 April 1971 and in keeping with national trends, the Board's name was changed to the River Hebert-Joggins Chamber of Commerce.[59] Shortly thereafter Reverend Miller and Father Robertson were transferred to communities outside of

Cumberland County and, once again, the Board foundered.

In 1973 Dwayne Cleveland, a young man from River Hebert, and Basil Brine, the County Councillor for Joggins, revived the organization. Although the original members of the Joggins Board declined to join and conflicts among the members of the executive and the community leaders abounded,[60] the Chamber assumed a number of projects. It redeveloped the Bayview Municipal Campsite in Joggins and sought to establish a fish processing plant, a motel, a "tourist mine" similar to the one operated in Springhill, and a cottage knitting industry. The Chamber also created some animosity among its members, particularly when it attempted to remove decaying buildings in Joggins and when it assigned two men from River Hebert to manage the Bayview Campsite. In 1975 this Chamber also folded from lack of support.

As a result of the initiatives of both the various Boards of Trade and the political representatives for Cumberland County as well as a more liberal interpretation of government policy, employment opportunities had improved for Joggins' residents by the late 1960s and early 1970s. In 1968 an agreement among the federal, provincial, and municipal governments ensured the development of an industrial park in Amherst, and in the ensuing years companies such as Northern Telecom, Christy Luggage, Playtex, Life-Savers, Aerovox, and Stanfields opened manufacturing operations in Amherst. Some industrial firms retrained workers; others used semi-skilled or unskilled personnel for highly-repetitive tasks.[61] Women too were hired by the manufacturers and were

valued because of their excellent attendance and "busy hands."[62]

By the early 1970s community improvement grants had been directed into the community and resulted in the creation of a small industry which employed numerous community residents. In fact, throughout the 1970s, Joggins effectively put itself back together again through the grant programs. Roads were paved and upgraded; "welfare" homes were constructed; decaying houses were repaired; a new wharf was constructed; numerous buildings were renovated or expanded; equipment was purchased for sports and recreation groups.[63] The community improvement grants also had a unique structural influence on Joggins and resulted in the creation of a new hierarchy of aid-brokers, project administrators, leaders, and grant workers.[64]

The question of Joggins revitalization is of course value-laden. According to many of the aid-brokers who were interviewed in 1979, "there [had] never been so much money around."[65] Indeed, optimism flourished throughout that year, despite the community's aging population and inevitable decline. Throughout the summer, family members who returned for annual visits expressed a desire to "retire here" or to return to live in the community if jobs and serviced lots were available. The statement, "There's no better place than Joggins," surfaced often.

By the late 1970s the improved appearance of the community, the construction of a wharf, and the attraction of the famous "fossil cliffs" were emblems of continued prosperity. Conversely, the community remained divided on the issue of sewer service, despite fifteen years of

debate and petitions;[66] housing conditions were generally poor;[67] and as more residents commuted for employment, the former town continued to evolve into a "bedroom community."

Chapter Summary

This chapter has illustrated how coal-mining effected community development in Joggins, Nova Scotia. From the advent of the mines in the nineteenth century until their closure in the 1960s, the mining companies exerted an overwhelming influence on the community. First, the coal companies expanded the settlement and developed the infrastructure, including wharves, a railroad, barracks and a lumber mill, to meet both domestic and export markets. Secondly, the coal companies determined the economic cycles and social structure of the community, thereby defining both the internal and external patterns of political communication.

Internally, the mine companies provided a strong autocratic influence, initially through a baronial model of leadership, and later through the establishment of a town council under which the community retained its wardship under the mine management while attempting to establish a more democratic local polity. Due to the companies' control of external communication and transportation linkages, as well as to the pronounced social stratification manifest in the community's structure, there were enduring external and internal perceptions about Joggins. From the outside, the mine management was perceived as the dominant communicating faction for the community. From the inside, the mine

management was regarded as an oppressive, but necessary, hierarchy with influential external connections.

Following the failure of the town council and, later, the closure of the mines, Joggins experimented with various local development and political entities to resolve its economic dilemma. Both existing and developing local institutions sought to bring about community development via political, industrial, and social initiatives both within the community, and at provincial and federal levels. Eventually, as Joggins' internal political will and competence increased, the community adjusted itself to conform to the criteria of the government aid programs of the 1970s. During this period of revitalization, and despite some local fragmentation of effort, the community developed some internal cohesion and external bargaining ability. At the same time it continued to retain some of the characteristics of a company town by maintaining a structural dependence on "outside" government and industrial aid, including the County Council and the industries located in neighboring Amherst.

CHAPTER III

THE FUNDY TIDAL POWER STUDIES

> Dwellers by the sea cannot fail to be impressed by the sight of its ceaseless ebb and flow and are apt ... to trace a subtle relation, a secret harmony, between its tides and the life of man ....
>
> - Sir James George Fraser[1]
> The Golden Bough

As early as the twelfth century, low-horsepower tidal mills were being used in Britain, France, and Spain to grind grist and rice.[2] By the early seventeenth century, similarly-constructed mills had been introduced in North America by European settlers. In 1607 a grist mill partially-powered by tidal energy was built at Port Royal under instructions from the sieur de Poutrincourt,[3] and by 1800 two mills had been built in Passamaquoddy Bay.[4]

With the exception of these small-scale developments, little attention was given to tidal energy in North America until the twentieth century. In the early 1900s two scientists from Acadia University constructed an experimental tidal generator for use at Cape Split on the Bay of Fundy; by the 1960s tidal power was being touted by regional industrialists and politicians as a remedy for economic growth; and by the late 1970s it appeared as if a commercial-scale project would finally be developed.

The following chapter documents the evolution of the Maritime tidal power studies. Although conducted by various provincial and federal government agencies, these studies often proceeded with the propulsion and the approbation of various regional industrialists.

The Early Studies

Early in the twentieth century, scientists from the Maritime region identified several locations in the Bay of Fundy and Passamaquoddy Bay which would be suitable for tidal power generation. Although several experimental projects were begun shortly thereafter, one of the most publicized was conducted by G.B. Cutten and Ralph Clarkson, two research scientists from Acadia University. Using Cape Split, a natural rock formation which protruded into the Bay of Fundy, Cutten and Clarkson constructed an experimental generator in 1916.[5]

Much of the original research in tidal power generation was scientific and, as a result, tended to be characterized by a primary focus on physics, engineering, and bio-physical studies, by considerable protection of the intellectual property which resulted from the studies, and by little consultation with environmental and social scientists. The actual engineering studies for tidal power were not however malevolent. Prior to 1966 much of the research and experimentation was either of a limited physical scale or conducted in conjunction with projects which had a deliberate, social orientation.[6]

As a result of the guarded research approach of the early tidal scientists and engineers[7] and the limited public access to government studies on tidal power, the first sixty years of research proceeded without much public fanfare. Prior to 1961 it is probable that news about tidal power would have also fallen on deaf ears in Joggins, with the exception of those individuals who foresaw the displacement of "non-renewable" thermal generation by "renewable" hydraulic generation, and those residents who were involved in dyking and estuarial studies

for the federal Department of Agriculture.[8] Generally, however, the community was preoccupied with coal-mining, its primary resource industry, and few residents believed that government or industry could or would "harness the indomitable tides," despite proliferate scheming to translate the phenomenal daily surges into "untold wealth."

Then too the various Canadian engineering experiments associated with low-head turbine technology were less advanced than was Swiss and French experimentation, although the continental studies were followed through engineering journals and conferences.[9] As a result, there was some reluctance to promote the technology until the concept was tested in France. Therefore, as plans for the La Rance project were reported through technical and popular media, Maritime regional industrialists became more enthusiastic, and members of the Maritime Provinces Board of Trade, an entity spawned by the Maritime Rights Movement, began to perceive Fundy Tidal Power as a means to restore the inequities of Confederation.

During the early stages of development, the prospect of conquest of the mighty Fundy tides was also coupled with the repressed economic ambitions of the region's financial and political leaders. In 1957 and 1958 the Atlantic Resolutions introduced in the Canadian Parliament envisaged the creation of an Atlantic Development Council which would examine capital projects for the region, assess economic development plans resulting from such projects, implement preliminary surveys, and assume responsibility for planning and design.[10] These Resolutions, however, remained largely unfulfilled until a powerful Maritime lobby was reactivated in 1957.

The Chignecto Canal Committee

The Chignecto Canal Committee was reactivated with the support of Maritime industrialists and the financial backing of New Brunswick Premier Louis-J. Robichaud.[11] The Committee, which was based in Sackville, had established a large grass roots organization as early as 1950 and had produced a promotional brochure in that year. By 1957 the development of the bulb turbine had reduced the economic liability which had prohibited tidal generation at marshland reclamation sites in Shepody Bay, Tantramar, and Annapolis. As a consequence, one of the first projects of the revived committee was to engage three prestigious engineering firms, H. G. Acres and Company, Foundation Company of Canada Engineering, and LaSalle Hydraulic Laboratory, to complete a reassessment of the technical and financial feasibility of the Chignecto Canal.[12]

Supplemented by a 1960 report from Economic Research Corporation, the study was completed in December 1961 (see Figure 4). Although the results of the study were not publicized until a meeting of the Chignecto Canal Committee on 10 March 1962, the findings were conveyed to Prime Minister Diefenbaker and Premier Robichaud by mid-January.[13]

Following the trend established by Economic Research Corporation, the Canal Committee report focussed on the Chignecto Canal as a development project. The report suggested that the economic benefits of the Canal would be as complex and widespread for the Maritime region as those which the Saint Lawrence Seaway had brought to Central Canada. Construction of the Canal would employ 20,000 workers, ensure an annual increase of $300 million in regional production, and provide an

opportunity for greater income tax receipts and less regional dependence on unemployment insurance.[14] The primary functions of the Canal, as a transportation project and an electric power project, were treated as secondary issues.

As an attempt to construct a canal through the Isthmus of Chignecto, the Chignecto Canal Committee was a failure. Despite pledges by regional industrialists to invest in development projects which would result from the Canal's construction,[15] the federal and provincial governments did not build the Canal as the Committee had hoped. Yet, within the Maritime region, the Committee did succeed in greatly advancing the public's awareness of tidal power and its perceived feasibility.[16] As an affluent, articulate model for subsequent advocates, it endowed the Chignecto Canal project (and, subsequently, the Fundy Tidal Power project) with a veritable halo; and by couching the project's viability in rhetoric which aligned the Chignecto project with other engineering feats and national economic development projects, the Committee invoked what anthropologist B. Malinowski calls the charter notion of myth.[17] Statements by advocates of subsequent tidal power projects reveal a similar tendency and often reiterate the three merits of the original Chignecto proposal: improved transportation linkages, opportunities for industrial development, and cheap, abundant electrical energy. These statements are examined more fully in Chapter IV.

The secretive veil around Fundy Tidal Power was thus lifted with the formation of the Canal Committee. Through it, would-be developers of Fundy Tidal Power created a band-wagon which provoked previously reticent engineers including J.D. Conlon, Chief Engineer for the

Maritime Marshlands Rehabilitation Administration, to make public remarks about regional complacency towards tidal technology.[18]

On 15 May 1962, shortly before a June general election, John Diefenbaker assured the Atlantic region that the Atlantic Development Council, proposed in the Atlantic Resolutions of 1957 and 1958, would be formed by his government upon re-election, and that the Council would be given the mandate to complete a thorough study of the Chignecto proposal.[19] Within two weeks of the announcement, Robert Coates, Progressive Conservative candidate for Cumberland County, was assuring voters within his riding that the Chignecto Complex would consume four million tons of coal per annum to supplement the fluctuation in tidal power generation.[20] Thus Tidal Power's formal national debut came wrapped in a politically inspired promise that Maritime regional development could "match strides with Ontario's by 1967."[21]

As a result of the election campaign and the accomplishments of the Chignecto Canal Committee, both the Chignecto and Fundy projects became identified as means of gaining equality with Central Canada. Opposition to the project was thus dissuaded by the mythologies of "Maritime equality" and "economic independence."

The influence of the Chignecto Canal Committee and its successors helps to account for the attitudes of contemporary Cumberland County residents who express indifference or scepticism towards any form of tidal generation. For some of the people interviewed, even comprehensive engineering proposals had the folkloric status of a Glooscap tale.

The Atlantic Tidal Power Programming Board

In 1966, following the opening of a 240 megawatt tidal generating station near Saint-Malo, France, and as a consequence of the enthusiasm generated by the politicians and officials who visited the La Rance station, the first major study of Fundy Tidal Power was launched by the governments of New Brunswick, Nova Scotia, and Canada. The study was conducted by a two-tier structure which included a Programming Board and an Engineering and Management Committee.[22] The objectives of the study were to find a pollution-free and relatively inflation-free answer to the growing energy needs of the area as well as a source of foreign exchange through sales to the power networks of the northeastern United States.[23]

The Engineering and Management Committee consisted of five technical representatives from the three governments who co-ordinated five sub-committees and directed the Halifax-based study office.[24] Although a total of twenty-three locations were evaluated, the fieldwork focussed on three potential locations for the project, including a Cumberland Basin site adjacent to Joggins, Nova Scotia.

In October 1969 the Atlantic Tidal Power Programming Board released a report entitled Feasibility of Tidal Power Development in the Bay of Fundy which concluded that Fundy Tidal Power was technically feasible, but not economically justifiable. The Board did however recommend additional analysis "... in the event of significant changes in interest rate, construction costs, conventional energy prices, or threatened exhaustion of conventional supplies."[25]

By 1972 significant changes in the price and supply of energy resulted in the formation of the Bay of Fundy Tidal Power Review

Board.[26] The Review Board studied the report issued by the Atlantic Tidal Power Programming Board in 1969 and concluded that, given the current and projected conditions in energy supply, Fundy Tidal Power seemed economically attractive and warranted more comprehensive studies. In an internal report entitled Preliminary Reassessment of Feasibility of Fundy Tidal Power Development in the Bay of Fundy, completed in 1974,[27] the Board also implied that the conclusions of the 1969 study on environmental and social impacts were acceptable and that these considerations would not alter a decision based on the economic merits of the development. However, the Board also noted that based on a framework for analysis provided by Environment Canada "... further intensive engineering and economic studies should embrace the environmental aspects [of the project]."[28]

The Fundy Tidal Power Review Board

On 3 December 1975 the governments of New Brunswick, Nova Scotia, and Canada directed the Fundy Tidal Power Review Board to embark on a two-year study to "... provide a firm estimate of the cost of tidal energy in relation to its alternatives, on which to base a decision to proceed further with detailed investigations and engineering design."[29] As a result of this directive, five task force areas were designated: Area 1, Tidal Power Plant Design; Area 2, Tidal Power Generation; Area 3, Market and System Studies, Alternative Supplies, and Transmission; Area 4, Socio-economic Aspects; and Area 5, Environmental Aspects. Detailed investigations were conducted in each of these areas and completed by in November 1977.

Altogether, thirty locations were evaluated in the Bay of Fundy, and particular attention was devoted to the three sites identified by the Atlantic Tidal Power Programming Board in its 1969 report and to an additional site located in Cumberland Basin, between the provinces of New Brunswick and Nova Scotia and adjacent to the communities of Sackville and Amherst (see Figure 5). Most of the reports billed the Bay of Fundy as the most outstanding site for tidal power applications in the world, due to the length and shape of the Bay and because of its phenomenal tidal range.[30]

A benefit:cost ratio of 1.2:1 was computed for the second site located in the Cumberland Basin (identified as A-8 in the report), based on a projected in-service cost of $3.12 billion[31] (see Table 4). This calculation, computed in 1976 dollars, assumed commissioning by 1990, the development of a Maritime Integrated (Electrical) System, an improved bulb-type turbine generator, lowered construction costs due to "float-in" techniques for the powerhouse and sluiceway sections, and increased electrical costs due to rising oil prices and expensive pollution abatement techniques.

Based on its investigations, the Fundy Tidal Power Review Board made three principal recommendations in its report of November 1977:
(1) "that funding be provided in 1978 to complete detailed investigations and definitive designs, including detailed specifications, for a single basin tidal power development at Site A-8 in Cumberland Basin;"[32]
(2) "that institutional arrangements be established for execution of the detailed investigations and definitive designs and which could also provide the appropriate basis for the development phase;"[33] and

(3) "that immediate consideration be given to the resolution of the financial constraints to developing tidal power."[34]

From the reports, it is evident that the Fundy Tidal Power Review Board demonstrated a genuine interest in environmental assessment (see Table 5). The motives for doing so were considerable: the initial costs for the 1966 and 1977 studies were in excess of $6.1 million and the Phase II studies were projected to cost more than $33 million; regulatory requirements had been introduced by Cabinet; unanticipated marine impacts could foul the plant's mechanisms; and the political implications of not conducting the studies could be disasterous. Evidence of full compliance with both the federal and provincial Departments of Environment is documented as early as 1974 in the Preliminary Reassessment Report, and the Review Board's own recognition of such issues is evident in the designation of Task Areas 4 and 5 for which reports were issued throughout 1976 and 1977.[35] The Board's report also indicated that comprehensive environmental studies would be completed during Phase II of the study.

The Review Board stated in the conclusions to its 1977 report that "... based on a preliminary review of such information as exists and advice from federal and provincial authorities as well as a broad spectrum of other scientific sources, it appears there would not be any major environmental or social problems which would prohibit development of any of the sites."[36]

This conclusion resulted from a work study program which flowed from engineering models for the project to environmental impact modeling (Task Area 5), to a social and economic impact assessment (Task Area 4)

(see Figure 6). The social and environmental task areas for Phase I thus tended to emerge incrementally from regulatory requirements, studies, discussions, and guidelines with little obvious input from the elected representatives or the general public.

The Fundy "Non-decision"

The euphoria which surrounded the publication of the Reassessment of Fundy Tidal Power in November 1977 tended to obscure the restrained optimism of the report itself.

As a result of the work of the Atlantic Tidal Power Programming Board from 1966 to 1969, a preliminary reassessment of Fundy Tidal Power in 1974, and the $3.65 million Phase I study program, the Fundy Tidal Power Review Board concluded that "... the results of the Phase I study program indicate that tidal power is likely to be a sufficiently attractive source of energy to warrant further studies."[37] The Review Board also recommended that the Phase II Pre-Investment Design Program proceed immediately and concentrate on development at Cumberland Basin Site A-8.

Until the completion of the Phase I studies, both the Atlantic Tidal Power Programming Board and the Fundy Tidal Power Review Board had assumed the roles of investigators and as such were unconstrained by federal and provincial legislation.[38] As a result, they did not undertake extensive public information or participation programs, beyond the publication of articles in magazines and a brochure which described the mechanics of tidal power. In this regard, investigators of tidal power argued that the Fundy area residents had suffered sufficient excitement and disappointment about the project and that it would have

been premature to involve them prior to the completion of the Phase I report.

The report released by the Fundy Tidal Power Review Board marked the culmination of the first phase of an information-gathering and review process, and advocated a second, more extensive phase of study which would span three years (from 1978 to 1981) and cost approximately $33 million. This second phase of study was never begun.

Chapter Summary

This chapter has traced the evolution of the tidal power studies from scientific experimentation in the early 1900s to the more intense technical explorations which occured during the 1960s and 1970s. Although Fundy Tidal Power did not have a specific proponent during the years in which the initial studies were conducted, both the regional governments and entrepreneurs became keenly interested in the project during the 1960s and communicated their enthusiasm to the general public and to the Cumberland Basin communities.

It must however be noted that the enthusiasm for Fundy Tidal Power was not based solely on the results of the scientific studies, since this information was treated as proprietary in nature and, consequently, not available for public distribution. Rather, the general wave of support for Fundy Tidal Power was built on enduring political mythologies about the development benefits of project.

Joggins lobbied for Fundy Tidal Power from 1961 to 1973. Such lobbying efforts did not however result in consultation between the study groups and the community once the technical investigations were

initiated in the late 1960s and early 1970s by the Atlantic Tidal Power Programming Board and Fundy Tidal Power Review Board. Rather, there seems to have little interaction between the community and the investigators of the project, either on a public or technical information-gathering basis. Thus, the selection of Cumberland Basin as the preferred location for the tidal generating station occurred without studies of or direct input from the neighboring communities.

CHAPTER IV

FUNDY TIDAL POWER: THE AGE-OLD DREAM

> There is a tide in the affairs of man
> Which, taken at the flood, leads on to fortune
> Omitted, all the voyage of their life
> Is bound in shallows and miseries
> - Gerald Regan quoting William Shakespeare[1]

Throughout its history, Fundy Tidal Power has been portrayed as a development project with definite mythological features. Such features have often inhibited dissent among public and environmental interest groups, particularly as the project gained political and technical momentum.

The following chapter offers an analysis of some of the messages about tidal power which were conveyed by Maritime politicians during the 1960s and 1970s. It also provides an examination of the print media in Nova Scotia: its attitudes toward Fundy Tidal Power and its effect upon the formation of public opinion.

Dissent and Public Participation

Although there was considerable media interest in and political enthusiasm about tidal power throughout the 1960s, little information about the project was available to the public during the decade. The scientific and engineering studies were conducted in a predominantly closed, technical environment; the technical reports were not widely publicized; and with the exception of the conclusions of the Atlantic Tidal Power Programming Board study completed in 1969, the results of

such studies were often protected by a federal, "restricted access" classification.

As a result of this paucity of information and the overwhelming enthusiasm about the tidal power studies, there was little organized dissent with the project prior to the completion of the Reassessment Report by the Fundy Tidal Review Board in November 1977.[2] Jason Baxter captured the general public mood in an article published in The Mysterious East in October 1971: "The campaign to promote the development of Bay of Fundy Tidal Power has been moving into high gear recently. Governments, newspapers, industry spokesmen and businessmen all seem to have been producing public statements and propaganda with a new enthusiasm. In the Maritime press, it seems there is no significant dissent. The clear implication is that the people of the region are solidly united behind the effort to get construction started."[3]

The Premier of Nova Scotia, Gerald Regan, admitted in May of the same year that he sometimes regretted the widespread publicity given to Fundy Tidal Power and the subsequent pressure to construct the generating station.[4] It was however precisely because of this pressure that Baxter later noted: "... it is doubly important that some questions be raised about the project -- about its practicability, its economic and social effects, its effects on the bodies of water involved. Who'll build it? Where? Who'll pay for it? Who'll make money off it? We need to consider such questions before government commits us to the project, sight unseen."[5]

Between 1960 and 1977 dissent with the project was quelled by a variety of factors. Both the financial viability and the feasibility of

any specific site was undetermined; the studies themselves were conducted with little public consultation; the reports were often written in "civil service gobbledigook"[6] and inaccessible to the public; both the Nova Scotia press and the major political parties supported the project; and there were no formal, legally-defined opportunities for public participation or consultation about the project. Moreover, tidal power's critics were geographically isolated and, with the exception of The Mysterious East and The Fourth Estate, they had few forums through which to express their opinions.[7]

During the mid-1970s and united by the construction of the Wreck Cove Hydro Generating Station in Nova Scotia and the Point Lepreau Nuclear Generating Station in New Brunswick as well as the implementation of spruce budworm spraying programs in the Maritime provinces, the Maritime environmental movement evolved from individual- and community-based organizations to provincial and regional coalitions. As the tidal power project gained momentum in 1976 and 1977, these coalitions, in conjunction with the labour-oriented federations and the New Democratic Party, began to seek information on the project and direct involvement in the emerging environmental assessment process.

Throughout the duration of the Phase I study, the Nova Scotia New Democratic Party led by Jeremy Akerman did not overtly object to "a $4 billion dollar project producing 4000 megawatts and 10,000 jobs."[8] Akerman did however urge a more moderate approach to the project by disputing claims that tidal power would bring Nova Scotians independence from external sources of energy and by criticizing "... the misinformation which appear[ed] to be an attempt to influence public

opinion through falsehood and 'big promises' before the facts [were] on the table."[9] As a member of the Legislative Assembly in Nova Scotia, Akerman also provided an opportunity for the concerns of the environmental interest groups and the labour federations to be expressed.[10]

The Chronicle Herald: The Voice of Development

In the years which elapsed between the closure of the Joggins mines in 1961 and the completion of the thesis fieldwork in 1979, the Halifax Chronicle-Herald maintained a constant pro-development, pro-Fundy stance. The newspaper, which was easily accessible to the Halifax development interests, provided a ready forum for the proponents of Fundy Tidal Power, and in addition to providing coverage of events or announcements about the project, the paper reserved space in its editorial pages for staff and guest columns which supported the construction of the generating station.

In January 1964 Dr. Clarence L. Gosse, a Nova Scotia politician and a frequent writer of letters to the editor, noted with reference to a Minas Basin causeway/tidal power dam project that "progress and easy communication go hand in hand."[11] Later in the year, an editor for the Chronicle-Herald described the La Rance project, due to begin operating in 1966, as a "... new chapter in the history of man's ability to control, for his own profit, the natural forces with which he is surrounded.[12] Throughout the remainder of 1964, the newspaper repeatedly used such phrases as "Fundy --- the age old dream"[13] and "the greatest power source in the world"[14] when documenting the discussions between

the regional and national advocates of the project.

Nova Scotia officials were frequently quoted in the Chronicle-Herald when they compared the Fundy project with other national engineering feats at Niagara Falls, James Bay, and Churchill Falls[15] or when they compared the Fundy "elephant" to the LaRance "pony."[16] Yet, the orientation of these comments sometimes fluctuated. In 1966 Lesmere Kirkpatrick, the general manager of Nova Scotia Power, described the Bay as an unparalleled source of energy "which renews itself twice a day."[17] By 1977, however, he was attempting to minimize the novelty of the project as a renewable, hence alternate, source of energy by describing tidal power as a "... conventional source ... of top priority for the power corporation ... it is not alternate energy."[18]

Federal politicians also received coverage in the Chronicle-Herald when they supported the construction of a tidal power complex. Nova Scotia MP Patrick Nowlan was quoted when, upon tabling a Private Member's Bill in 1970, he declared that "the hopes of the East ride on the Fundy tides."[19] Nowlan's associate, Robert Coates, MP for Cumberland County, received a substantial amount of coverage by the Chronicle-Herald when he too talked about the "valuable side effects" of a project which he described as "vital as life itself."[20] When the environmental assessment and review requirement was announced in 1977, for instance, Coates assured his constituents via the pages of the Chronicle-Herald that "... all discussions on whatever potential damage to the environment -- which I doubt will be major ... will show the damage can be eliminated."[21]

The Chronicle-Herald was becoming impatient with the decision-

making process by the late 1970s. In an editorial printed on 7 October 1977, one of the newspaper's editors stated, "There are some indications that Fundy Tidal Power may soon qualify with regional disparity as among the most studied subjects on this earth," and openingly criticized the length of the discussions and the "stalling, pro-nuclear Ottawa mandarins."[22] Moreover, despite increased informed opinion on the negative impacts of the project, the Chronicle-Herald continued to emphasize the "ten thousand jobs" and "considerable social advantages" which Fundy Tidal Power would bring to the region.[23]

A few sceptics did however receive some coverage from the Chronicle-Herald, although not without rebuttal. In 1965 both Dr. John Connor, an economics professor from Acadia University, and William Marsh, president of the United Mineworkers' Union, indicated some concern about the economic impact of a tidal generating station.[24] Shortly following the publication of their remarks in the Chronicle-Herald, both individuals were rebutted both by the Chronicle-Herald and the Pictou Advocate.[25]

Generally, the tidal proponents were very quick to challenge any negative reports, even on the La Rance project. On 7 January 1971 both the Amherst Daily News and the Chronicle-Herald carried an Associated Press story on La Rance which dismissed the project as a mere tourist attraction and a political payoff to Brittany by DeGaulle. The next day Les Kirkpatrick of Nova Scotia Power rebutted the AP story in the Chronicle-Herald, arguing that the calculations and comparisons with Fundy were erroneous.[26] Shortly thereafter, L.S. Loomer of Windsor, Nova Scotia, condemned the Fundy propaganda campaign in a letter to the editor and noted that the newspaper was attempting to stifle

environmental objection to the project in its editorials.[27] Citing the capital cost estimates and environmental impacts of the tidal power project, and questioning the wisdom of exporting power to the United States, Loomer identified "... a gap in credibility between [the] demonstrated editorial practice [of the Chronicle-Herald] and the admirable principle stated in [its] masthead."[28] Ironically, the edition which carried the Loomer letter also published an editorial entitled "Tide of Support" which addressed the "minimal" environmental concerns.

Tories, Grits, and Tidal

In 1971 the Progressive Conservative party in Nova Scotia raised some objections about the Fundy Tidal Power project in the province's Legislative Assembly. The first to speak on the issue was Victor Thorpe, the MLA from Kings North.[29] Thorpe and the other Progressive Conservative MLAs, including Opposition Leader John Buchanan, did not however address environmental or technical concerns. Rather, they waged a partisan debate with the ruling Liberal party on ownership, equity control, and provincial sovereignty.

With few exceptions, neither of Nova Scotia's major political parties debated the merits of Fundy Tidal Power, particularly when in office. Premiers Stanfield, Smith, Regan, and Buchanan all supported the project during their tenure, although Premier Gerald Regan, as chairman of the Nova Scotia Tidal Power Corporation, was perhaps the most vigorous premier-proponent. Criticism of the project, however infrequent, most often resulted from political posturing and partisan debate. And, although the potential for partisan conflict increased

with the availability of the socio-economic reports of the Phase I study, the proposed formation of a Maritime Energy Corporation among the federal and provincial governments served to countervail any negative environmental impact data.

Fundy: The Mythical Connection

Premier Gerald Regan's citation of Shakespeare's "tide in the affairs of man" passage is a fine example of the influential political rhetoric which was used to support Fundy Tidal Power during the 1960s and 1970s. Without attempting to diminish the credibility of Regan or his political confrères, it is useful to examine the Fundy developmental projections and political platforms as a prior, or speculative, form of science. This prior, or speculative, form is not a product of a "rational," bureaucratic, goal-setting process, nor is it based on a scholarly discipline of study such as contemporary political science. Rather, Premier Regan's quotation is an example of inspirational, self-fulfilling, political myth.

According to Claude Levi-Strauss, the principal value of such myth and the attendant political ritual is "... to preserve ... the remains of methods of observation and reflection which were precisely adapted to discoveries of a certain type: those which nature authorized from the starting point of speculative organization and exploitation of the sensible world in sensible terms."[30] Premier Regan's use of the tidal passage from the revered playwright as a "charter for social action" is also similar to Malinowski's notion of myth in which "... the action of the present [is invested] with the sacrility of historical

precedent,"[31] and to the complementary concept of myth espoused by Levi-Strauss as "... a means by which men make use of elements in their socio-cultural experience to mediate the contradictions with which social life confronts them."[32]

A.P. Cohen and G.S. Kirk draw attention to two specific categories of myth: one which is operative, interactive, and validatory and another which is speculative and explanatory.[33] According to Cohen, myths of the first category "... emphasize the continuity of society and its organizational features, seek historical precedents (or 'charters' for behavior) and provide emotional support for attitudes and beliefs."[34] Generally, they form part of the process of binding the volatile present to the traditionally- and divinely-sanctioned regularity of the past. Myths of the second category are used "... to reconcile society to inevitable truths and to resolve or render tolerable the contradictions which appear in social life."[35]

In the case of Fundy Tidal Power, myths of a "charter" nature were generally perpetuated by the pro-development forces in their portrayal of the project as a paragon of regional development opportunities. Myths of an explanatory, or speculative, nature were evident in Joggins when the gasping community sought to recover from the failure of its coal-mining industry and to protect itself from a harsh, social reality by drawing attention to its "world famous" fossil cliffs.

Initially, the "charter" myths invoked by the development forces were appealing to Maritime residents, since they were laden with promises of prosperity and widely propagated by the Nova Scotia newspapers. They were also of great appeal to the residents of Joggins.

Many of the charter statements on Fundy were catalogued in the scrapbooks of households in the community and appear to have been perceived as promises rather than threats to the continued well-being of the former town.

In Pursuit of Justice and Satisfaction[36]

Cumberland Basin residents were largely supportive of tidal power from the late 1950s until 1977. Throughout the 1950s some community residents were even enlisted to conduct some of the preliminary investigations. George Knight, a Joggins resident, worked as an engineering technician with the Maritime Marshlands Rehabilitation Administration on various dyking and tidal control projects in the Upper Bay. In Upper Rockport, New Brunswick (a community known as North Joggins until 1900), Rupert Delosdernier, a life-long resident of the community, recalled having surveyors on his property in the late 1950s and being paid to maintain tide gauges in the early 1960s. Little opposition was evident on either side of the Bay during these studies.

The activities of the Chignecto Canal Committee during the 1960s coincided with Joggins' efforts to revitalize itself. And, although the Board of Trade's initiatives were initially directed toward a search for mine development capital and entrepreneurial expertise, by 1963 the Joggins' Board of Trade had "... voiced its support that the government give every consideration to the advisability of immediate development of the Chignecto Complex through harnessing the Bay of Fundy tides for power purposes."[37] In 1963 and 1964 the Board made specific recommendations about Fundy Tidal Power to the Atlantic Development Council, and

throughout 1964 and 1965 oceanographers used local vessels to conduct current studies in the upper Bay, thus provoking ripples of curiosity throughout the community.[38]

Despite outspoken criticism of tidal power and its displacement of coal power by William Marsh of the United Mineworkers Union, the Joggins and District Board of Trade continued to support the construction of a tidal power station throughout the 1960s. When the the La Rance Tidal Generating Station was commissioned in 1966, for instance, the Board once again urged government to build the Fundy complex.

Within four months of the Board's appeal, the Atlantic Tidal Power Programming Board embarked on a three-year study of the project during which Austin Brown, an influential Joggins fisherman, was hired to conduct hydrographic surveys. Throughout 1968 the pro-tidal momentum continued to build. In 1969, however, the Atlantic Tidal Power Programming Board concluded that tidal power was not economically feasible.[39] Yet, the Joggins Board of Trade continued to press for support.

Despite some reluctance by Prime Minister Trudeau and federal Minister of Energy, J.J. Greene, to consider additional tidal power studies, continued pressure from Cumberland County leaders, Nova Scotia MPs, and Nova Scotia Premiers G.I. Smith and Gerald Regan resulted in the formation of the Tidal Power Review Board in 1971.[40] By then, however, the Board of Trade had folded in Joggins and local interest in the project had subsided.

By the mid-1970s, the enthusiasm had once again returned. Fuelled by the reassessment of Fundy Tidal Power in 1974 and the favourable

conclusions of the report as well as the enthusiasm generated by the media and the politicians, the residents of Cumberland County dreamed of tidal power once again. The local mayors persisted in their lobby, the Roman Catholic priest in Joggins retained a surplus sacristy "to accommodate the people from the Tidal project,"[41] and local Joggins fishermen speculated that their new wharf would help them compete for marine contracts.

Chapter Summary

Throughout the 1960s and 1970s, it appears that the province of Nova Scotia held consistent and almost reverent support for tidal power. Although there was concern expressed by both federal and provincial opposition politicians about the limited access to the Atlantic Tidal Power Programming Board and Fundy Tidal Power Review Board reports, the privacy of study documents did not become a sustained public issue. In fact, several newspaper articles and letters to the editor condemned the "tide of Fundy propaganda" and the "mindless boosterism" which was evident until the end of the Fundy Tidal Power Review Board study.

Fundy Tidal Power did not however emerge as a partisan political debate, due to the transcendent development value which the project represented as well as the tenure of the project, which outlasted numerous federal and provincial governments. With the exception of the New Democratic Party and select labour spokesmen, Fundy Tidal Power tended to be mythologized by Nova Scotia's public figures, both Liberals and Progressive Conservatives, and by the province's public servants. These mythologies functioned as operative charters for behaviour which

provided emotional support for the attitudes and beliefs of the pro-development forces.

Both provincial and Cumberland County newspapers willingly promoted and transmitted these mythologies to residents near the preferred Phase I development site. The residents of Joggins were thus influenced by a strong Cumberland County lobby and by both federal and provincial politicans. As a result, they became receptive to the Fundy tidal project and eagerly sought the project as a panacea for the community's economic woes.

CHAPTER V

THE EVOLUTION OF COMMUNITY INTERESTS

The law locks up both man and woman
Who steal the goose from off the common,
But lets the greater felon loose
Who steals the common from the goose.
- old, anonymous, English verse

This thesis has examined in sequence the effects of coal-mining on the structure of and communications environment in Joggins, Nova Scotia; the technical evolution of Fundy Tidal Power from the earliest experiments to the completion of the Phase I Reassessment Studies in 1977; and the enthusiasm aroused about the project by Maritime politicians and the print media in Nova Scotia. Chapter V resumes historically at the completion of the Phase I Studies in 1977, following which an environmental assessment and review panel was formed.

The following chapter thus begins with a short overview of the traditional role of the public in the decision-making processes associated with large development projects and describes how formulae for project assessment evolved during the 1970s to include environmental and social considerations. The chapter also documents a shift in public opinion in Joggins through which the community evolved from one apprehensive about a future without resource development to one apprehensive about a future resource development. Finally, the chapter recognizes the communication environment which initially mobilized support for Fundy Tidal Power in Joggins and later prompted misgivings about the project and its environmental assessment process.

Flaws in the Environmental Assessment Process

In December 1977, following the release of the Phase I report and despite the apparent lack of a legal proponent for the project, the Ministers of Environment for the governments of New Brunswick, Nova Scotia, and Canada announced the formation of a federal-provincial Environmental Assessment and Review Panel to "... review the environmental and related social and community impacts of the Fundy tidal power project."[1] The Panel, chaired by F.G. Hurtubise of the Federal Environmental Assessment and Review Office, was given the responsibility of reviewing the Environmental Impact Statement which would be prepared by the proponent as part of the Phase II Pre-Investment Design Program.[2]

The intent of environmental impact studies, in general philosophical terms, was to recognize that while governments had the right to undertake projects for the greater public good (described by Theodore Lowi as "legitimate coercion"),[3] governments should not impose unjust and unnecessary burdens upon its subjects. As a government tool, environmental impact assessment was a relatively new political means of focussing a broad spectrum of law, regulations, and government policy upon a single development initiative.

The three traditional components of the decision-making process for large development projects prior to the introduction of environmental impact assessment guidelines included market studies (need), economic analyses (financial viability), and engineering and design studies (mechanical feasibility). As Paul Emond and Douglas Johnson note,[4] resource developments, when not assessed prior to an environmental

impact assessment, are supposed to pass through a broad range of requirements from environmental performance standards and public health guidelines to advertising and market concentration regulations. Once passed, the developer can then use the traditional three components of the assessment studies to make a decision based on a benefit:cost analysis, without reference to the other requirements. The benefit:cost equation for a tidal generating station in Cumberland Basin was calculated in a similar manner for the report published by Fundy Tidal Power Reassessment Board in November 1977.

During the late 1960s North American planners began to realize that development decisions based on simple benefit:cost equations often resulted in the misuse of such free, public resources as air, water, and forests and that certain non-quantifiable costs of development such as an increased demand for social and physical services, which were generally perceived as externalities by development economists, were also being paid by the public. This realization by planners was accompanied by increased environmental activism, a phenomenon described by the Organization for Economic Co-operation and Development (OECD) as "the participatory demand." According the the OECD, the general thrust of the participatory demand is "...for a greater degree of public accountability; freer public access to technical information; more timely consultation of policy options; all of which amounts, of course, to more direct public participation in the exercise of decision-making power."[5]

The first North American legislation which addressed the questions of assessment and participation was the National Environmental Policy

Act, introduced in the United States in 1969. As a result of the requirements of this legislation, a Council on Environmental Quality was formed to monitor the legislation, and all agencies of the American federal government were required to prepare detailed statements which described when their actions would "significantly" affect the environment.

The British government adopted a comprehensive environmental planning approach in 1970. However, unlike the American policy, which Peter Walker, Minister of Environment for Great Britain, described as making "... a land fit for lawyers to live in with no great impact on the environment",[6] British policy did not assume a strictly ad hoc, adversarial approach. Rather, the emphasis was on a nation-wide regional planning system, clean air and water policies, and a comprehensive strategy towards improving the quality of urban life. This policy placed the onus on government departments to pursue high quality environment decisions without implementing environmental impact statements.

The Canadian Environmental Assessment and Review Process introduced in 1972 is a hybrid of British and American policy in that it includes a formal Environmental Impact Assessment which is monitored by an independent office and in that it was instituted by Cabinet directive rather than by legislation. Unlike the American environmental legislation, the approach of Canadian policy is basically an administrative one and reflects a certain Canadian conservatism, also evident in descriptions of the policy. According to the Hon. John Davies, for instance, federal Minister of Environment in 1974, the

policy is one through which "... I hope ... that we can avoid the delays and other pitfalls which a strictly legalistic approach would cause in this country. We will not hold up important developments which are clean from an environmental point of view and, in contrast to the situation which has developed in the United States, we will not bring the environmental assessment process into disrepute. We will not be charged with blocking everything."[7]

One major difficulty was that while it was evident in 1977 that Fundy Tidal Power, with a requirement for federal funding and a preferred site in interprovincial waters, was an obvious candidate for the Environmental Assessment and Review Process, the goals of the tidal project and the objectives of the assessment process were not always clear or well aligned. First, the Management Committee for the Fundy Tidal Power Review Board had stated in its 1977 report that "... the primary justification of a tidal power project must be based on its implications upon the energy sector of the Maritimes or, in the case of large projects, of a larger area than the Maritimes."[8] Yet, as Tom Goff, a member of the Chignecto Research Group, noted in 1977, Fundy tidal power, a unique coincidence of material need and dream, had raised regional economic expectations for the project which were far broader than those of the Review Board.[9]

Secondly, the Reassessment Board had concluded in 1977 that "... construction and operation of a tidal power plant would be unlikely to produce deleterious effects of a prohibitive magnitude,"[10] and that there would not be "any major environmental or social problems" at any of the three preferred sites.[11] These conclusions were widely dis-

seminated by the proponents of tidal power, including Robert Coates, MP for Cumberland County, and may have appeared to preclude or minimize the need for assessment.

Thirdly, the Fundy tidal project gained considerable politicial momentum without legislative clarification of either the project or the aims of the project assessment. In a press release issued by the Environmental Assessment and Review Panel on 22 December 1977, specific references were made to the Environmental Assessment and Review as an information-gathering process and to the Environment Ministers' consideration of the Panel's recommendation for Fundy Tidal Power. There was however little clarification of the relative emphasis of information-gathering and decision-making.[12] Questions such as "what" information would be gathered, "how" it would be gathered, "from whom," and "who would decide" had yet to be answered.[13]

Fourthly, both the Phase I studies and the Environmental Assessment and Review demonstrated a preference for a centralized process of assessment and decision-making, rather than a community-oriented approach. Yet, numerous studies had already demonstrated that "the most worthwhile" place to initiate environmental assessments was at the community level and that in some instances power plants could have a "largely salutary effect" upon rural communities[14] if properly presented and argued at the community level.

Fifthly, the Environmental Assessment and Review for Fundy Tidal Power actually straddled two aspects of the Phase I and Phase II studies; namely, Task Area 4 (Socio-economic Aspects) and Task Area 5 (Environmental Aspects). And, although the title "environmental

assessment and review" reflected historical anomalies, this title also lent justification to the assumption that "socio-economic" considerations were included "... on the grounds that humans were part of the environment of the project."[15] The perspectives of the residents of Joggins were not however so easily compartmentalized. The federal Environment Assessment and Review Office expected that the environmental impacts of the projects which were to be studied by experts would have secondary and tertiary impacts on the community. Conversely, the community perceived the "social/community" or "socio-economic" impacts to be wholly indivisible from the environmental aspects and aggregated "natural" and "social/community" impacts into "impacts on our community." Likewise, the potential effects of both the project and the decision-making process had become intertwined.[16]

Lastly, due to the overtures made by Joggins throughout the 1960s, the developers may have believed that the Fundy Tidal Power project was consistent with the aspirations of Joggins and other Cumberland County communities. In their collective opinion there was no doubt that the project would have been a welcome intervention in the communities adjacent to the Cumberland Basin site. Opposition to the project by some Joggins residents prior to the beginning of the Phase II studies therefore came as a surprise to both the developers and the officials from the Departments of Environment.

The Community Hears, but is not Heard

The problem was not that the residents of Joggins did not send or receive messages; rather, the community did not seem to be sharing signs

which were mutually accepted, recognized, and held in common ownership with the "outside."[17] Moreover, the decline of the community complicated communication with the "outside," while it stimulated communication within the community.

Throughout the history of Joggins, the internal interchange of ideas and messages gradually took precedence over the external interchange of people and goods. Communication with the "outside" during the community's years of resource and community development was limited by the considerable constraints of land and sea travel while, within the community, people worked and communicated in highly-structured enterprises and within strictly-defined social groups or classes.[18] Moreover, the wealthier residents, ie., the mine managers, who were more able to communicate with the "outside" forced a state of dependence on the poorer and less mobile residents, ie., the miners, who required the wealthier residents to act as filters or interlocutors of messages from the outside.[19]

As the mass media became more accessible to Joggins and as transportation improved, the interchanges between Joggins and the "outside" increased, and became more pervasive.[20] Yet, the extraction of the mineral resources and the transportation of this resource retained its dominant position in the community, until the closure of both the mines and the "Joggins Road" in 1961. As a result of the influence of the industry in the community and the economic disparity which it caused, the intimate adversity of life at the coal face, the geographic isolation of the community, and the authoritative inflow of messages from the "outside," a "world's greatest" ideology developed within the

community. This ideology, which was evident throughout the social strata of the community, was characterized by an "insider/outsider" dialectic, was made manifest through a strong communication network within the community, and acted as a mythological means of survival and a form of compensation for economic hardship. During the years in which Joggins attempted to revitalize itself, this ideology both propelled and preserved the community as it sought to renegotiate its economic future.

Throughout the 1960s the actual number of messages between Joggins and the "outside" increased through the availability of newspapers, radio, television, and improved telephone service; through visits with former residents of the community; and through correspondence with industrial and political leaders. The community however was unable to achieve its developmental aspirations by bringing industry and community-based employment to Joggins. Instead, the interchange of messages and particularly the inflow of information to the community from the outside provoked changes in the community itself which were evident in the community's adoption of a Board of Trade model, the pro-Fundy movement, and government social welfare programs.

Prior to the conclusion of the Fundy Tidal Power Review Board's Reassessment in 1977, Joggins was in fact inundated with messages about tidal power from radio and television broadcasts originating from New Brunswick, Nova Scotia, and Prince Edward Island; from newspaper articles published in the Halifax Chronicle-Herald and the two Amherst newspapers, The Amherst Daily News and The Citizen; from articles appearing in the Atlantic Advocate, a monthly magazine received in many Joggins households; and from speeches made by local and regional

politicians. Despite this abundance of "communication" on the subject, Joggins suffered some of the consequences which Ithiel de Sola Pool noted in his study of Citizen Feedback and Cable Technology:

> We are flooded by a torrent of communication ... and yet there is a breakdown in communication. The average citizen spends more than four hours a day with mass media, while increasingly he doubts that his government listens to him or that what it tells him is credible. The trend of growing alienation is well documented ... alienation has many roots. Failure of communication is but one, and perhaps more often a symptom than a cause. But one situation that clearly reduces the citizen's sense of potency is that the flood of communication is one way, he hears but is not heard.[21]

While Joggins received a flood of messages about tidal power, its ability to respond was limited by the community's isolation from county and provincial governments, its size, and location.[22] Only the Amherst Daily News, the Citizen and CKDH radio, all of which were based in Amherst, provided some media coverage of local events. Yet, even this coverage was inconsistent and varied with the abilities of local correspondents.[23] This one-way flow of communication accentuated the local cynicism which resulted from numerous studies and lack of action on the tidal power project.

The Status Quo in 1977

In 1977 the Cumberland District Planning Commission embarked on a comprehensive housing and development survey throughout Cumberland County.[24] This survey, which posed questions on housing conditions, income levels, age, occupation, satisfaction with community services, and attitudes toward Fundy Tidal Power, gathered responses from 709 households in Cumberland District Five. As a result of the survey, the

Commission completed several reports, one of which, "An Overview of Housing Conditions in County Polling District Five (Including the Village of River Hebert)," presented a grim picture of the area.[25]

According to the report, low income respondents (those with incomes less than $10,000) constituted 67.8% of the sample; an additional 20.3% reported incomes of between $10,000 and $14,999; only 11.99% reported incomes of more than $15,000. The average age of the head of the household in the sample group was 56.7 years of which 44.9% were retired or unemployed; 34.8% were employed in production and operating trades, 12.8% were employed in sales and service; and 7.5% were employed in professional, management, or administrative positions (see Table 6). Through subsequent manipulation of the data, the Cumberland District Planning Commission demonstrated that job opportunities and improved recreation facilties were most desired in Joggins (see Table 7).

Both Joggins and River Hebert showed a marked preference for radio and television as sources of information on tidal power, compared to newspapers and personal discussions (see Table 8). Curiously, three sources of information: local newspapers, major newspapers, and personal discussions, received equal ratings from those surveyed in Joggins.

One highly significant aspect of the survey was the correlation between the residents of Joggins who believed that Fundy Tidal Power would be good and would be an improvement for the area (see Table 9) and those residents who would not mind if their community was "built up like a town" (see Table 10). Both categories received a positive response of 93.1% of those surveyed. These figures may however be somewhat misleading since some surveyors indicated that "... some people,

although they evidently knew next to nothing about Fundy Tidal Power, would say that it would be good for the area for fear of losing face."[26]

A Shift in the "Tide of Support"

The year 1977 was an exciting, albeit confusing, year for Joggins. Helicopters, drilling rigs, oceanographic vessels, and marine scientists had completed their work by mid-1977, leaving the Fundy communities in highly speculative moods. Baron Edmond de Rothschild had appeared in Halifax to discuss Fundy financing with Premier Regan in March. The Premier himself appeared twice in Cumberland County: in Joggins in June and in nearby Minudie in September. A small, but innovative, wharf was under construction at Joggins, and in July MLA Guy Brown opened a ramp and stairway which enabled tourists to have better access to the renowned fossil cliffs.

Across the Cumberland Basin and marshes, at Sackville's Mount Allison University, a group of academics formed the Chignecto Research Group in March.[27] Composed of biologists, physicists, and social scientists, this group produced six papers, or internal notes, in 1977. In November 1977 (the same month that the Fundy Tidal Power Review Board report was published), the group's photograph appeared in regional newspapers.

The significance of the Chignecto Research Group did not become immediately evident to Joggins residents in March. However, through news articles, descriptions of research, and, ultimately, an appearance in a Joggins area public meeting, the Chignecto Research Group became an interlocutor of Fundy environmental and social impacts.[28]

The Research Group was not the first multi-disciplinary academic group to research and discuss the impacts of Fundy Tidal Power. Various social and environmental scientists from Dalhousie University in Halifax had been subcontracted for environmental studies. Acadia University Institute, in collaboration with the Management Committee of the Fundy Tidal Power Review Board and the federal Department of Environment, had hosted a workshop entitled "Fundy Tidal Power and the Environment" in Wolfville on 4 and 5 November 1976. This forum served not only to inspire regional multi-disciplinary academic interest in Fundy, but also to stimulate public interest in the environmental issues. Shortly following the publication of the proceedings of the workshop in January 1977, a group known as the Committee for Responsible Tidal Development launched an intensified public information campaign.[29]

At a meeting held in Wolfville on 12 February 1977, the Committee for Responsible Tidal Development discussed the economic, social, and environmental costs of the Fundy Tidal Power project. This session which was held in the Science building at Acadia University was not publicized in the Amherst area papers.[30] In fact, the Committee did not make inroads into the Joggins area until the Amherst Citizen editorialized on an apparently anti-Tidal power pamphlet produced by the group. The editorial which appeared on 13 August 1977 listed some of the negative impacts of the project, ie., sedimentation, drainage, disruption to fish and marine animals, climatic changes, and community disruption by construction, and marked the beginning of contact with diverse opinions on Fundy Tidal Power for the residents of Joggins and River Hebert.

Environmental Interest Groups and Local Interests

The most senior Nova Scotia environmental interest group, Ecology Action Centre, was founded in 1971 on the campus of Dalhousie University. From its inception the Centre maintained a watching brief on Fundy Tidal Power to ensure an adequate study of environmental concerns and a sufficient public assessment of the reports. The Centre also served as the provincial model for various interest groups which later intervened against Nova Scotia Power in rate increase and environmental hearings and was a prime organizer in the Maritime Energy Coalition, a communication network consisting of twenty-one environmental groups in Nova Scotia, New Brunswick, and Prince Edward Island.

Via the Maritime Energy Coalition, local interest groups united on projects of regional environmental interest including the Wreck Cove, Nova Scotia, and Point Lepreau, New Brunswick, generating stations. The Maritime Energy Coalition also prepared several omnibus papers on provincial and regional energy matters, including a 26 January 1977 brief to the Standing Energy Committee of the New Brunswick Legislative Assembly. This brief raised questions about the environmental and social disruptions of a large-scale tidal power project and advocated the use of small-scale tidal generating units. However, neither the Maritime Energy Coalition nor the Ecology Action Centre mobilized in opposition to Fundy Tidal Power beyond providing a social context for the Committee for Responsible Tidal Development.

Although the Committee held sporadic meetings in late 1976 and 1977, it was not ready for a public information campaign until the summer of

1977 when The Tidal Power Bulletin and a pamphlet entitled "Is Tidal Power the Answer?" were distributed in several Bay of Fundy communities.[31] Among the status reports on the Fundy environmental studies included in the Bulletin was an announcement of a $1,000 grant which the Committee had received from Imperial Oil for the preparation for a slide/tape show on tidal power.

In August 1977 the committee expanded its base of support by enrolling the support of other community and public interest groups and forming the Coalition for Tidal Power Education.[32] The objectives of this Coalition were: to promote education on tidal power "issues," to develop a basis for input into the decision-making process, and to make detailed information on tidal power available to the public. Noting that education and participation should begin with local people in their community, the Coalition sought to organize the first public seminar on Tidal Power for February 1978.

In January 1978 the Coalition held public meetings in various Bay-side comunities to select delegates for the seminar. In Joggins a community meeting was held in the Catholic Parish Hall on 18 January 1978, and approximately ten people viewed the Coalition's slide-tape show. A community planner from the Cumberland District Planning Commission was also in attendance, and six credible delegates were selected.[33]

On 3 and 4 February 1978 the Seminar on Tidal Power was held at Tatamgouche, Nova Scotia. Knowledgeable speakers including the Director of the Nova Scotia Tidal Power Corporation, the Projects Manager of the Nova Scotia Power Corporation, the New Brunswick Department of

Environment's Director of Environment Services, the Director of Stategic Planning for the New Brunswick Electric Power Commission, and the Director of the Maritime Ecology Laboratory at the Bedford Institute of Oceanography had been invited by the Coalition. Topics of discussion included the history, fundamentals, and rationale of Fundy Tidal Power as well as socio-economic and environmental issues. A plenary session was held at the end of the second day. According to one attendee from Joggins, the seminar was "quite exciting" and raised important issues in politics, decision making, and social concerns.[34]

One week after the seminar, a workshop was convened by the Coalition in Sackville, on the campus of Mount Allison University, with resource persons from the Faculty of Law at Dalhousie University, the Atlantic Provinces Economic Council, the Chignecto Research Group, and the public service. The workshop however had a vague agenda and was a failure, due to poor leadership, the inability of the leaders to communicate effectively, and the ideological differences of the participants. According to one delegate, "the Coalition abdicated responsibility for community support and coordination in a disgusting way."[35] As a result of the workshop, the Coalition disbanded, leaving a four-person planning committee to salvage the movement.

According to George Baker, a proponent of tidal power, the February seminar and workshop were "premature," despite the release of the Phase I Study Report in early March, the distribution of an "Information Kit" by the Environmental Assessment and Review Panel, and obvious plans for implementation of the $33 million Phase II design study. Unlike Baker, the planning committee which included representatives from Joggins,

River Hebert, Upper Rockport, Saint John, and Noel sensed both urgency and optimism, and a meeting was called for 1 April.

A letter from the Planning Committee which publicized the meetings stated,

> Never before have individuals and organizations with such diverse interests ever come together on a development project in the Maritimes, at such an early stage. To call the April 1st meeting an historic occasion is to make light of it; nevertheless, we are faced with the opportunity to influence, in a significant way, the manner in which development decisions will be made about Fundy Tidal Power, and the direction that energy policy and economic development will take in the next few years.[36]

The outline for the meeting did not however reflect a consensus of opinion among the members of the planning committee.[37] In its "Ingredients for an Organizational Recipe," the Information Officer for the Committee outlined objectives, programs, structures, rules, and three alternative aims for the organization: (1) to educate the public so that both individuals and organizations concerned can assess the merits and costs of the Fundy Tidal development being proposed; (2) to support and promote the development of Tidal Power in the Maritimes; (3) to oppose and organize against the development of Tidal Power in the Maritimes."[38]

To assist in the formation of the new organization, the former Coalition for Tidal Power Education agreed to produce a summary report on the Tatamagouche Seminar. At a working meeting on 25 February 1978, the Coalition received notice of a $4200 grant from Secretary of State to cover outstanding seminar expenses. Despite this incentive, the Coalition was unable to complete the report by the April meeting, and

instead tabled a summary document.

The Noel meeting nonetheless produced three results: a new name for the group, People, Tides, and Energy; new committees with officers; and a "great divergence of opinion."[39] Within the group there were confusing internal political currents, despite a circulated policy statement which described the intent of the meeting (to set up a new organization) and who might attend (delegates from the seminar and workshop). Moreover, since a large influx of new people was perceived as one of the problems of the workshop held in Sackville, the meeting was not advertised publicly, nor were statements offered to or conferences scheduled with the media.[40]

As a result of the meeting, four committees dealing with research, education, public participation, and finance were formed and four directors, two from Nova Scotia and two from New Brunswick, were elected. The public participation committee was based in Joggins-River Hebert, and following the meeting in Noel, its members solicited local support and established a mailing list. People, Tides and Energy thus began to protect the public interest in the planning of Fundy Tidal Power and related developments.

In late April 1978 People, Tides, and Energy held its first executive meeting. Since the group's publication fund was completely exhausted and since travel costs were becoming prohibitive, fund-raising was discussed. This matter precipitated a discussion of purpose, which in turn provoked debate about the scope of public participation and particularly the balance between the participation requirement of the local communities and that of the entire region. Only one executive

member appeared at the third meeting of People, Tides, and Energy.

According to one Cumberland County organizer, lack of public image, insufficient funding, and internal discord led to the demise of the organization.[41] Ironically, two members of People, Tides, and Energy and Les Kirkpatrick of Nova Scotia Power were later approached by CBC to appear on Take 30. The responsiblity for public information and participation thus reverted to the communities on both sides of the Bay, in the vicinity of Cumberland site A-8.

The Greening of Upper Rockport, New Brunswick

The community impact of tidal power was partly contingent on the location of construction headquarters and the starting site for the tidal barrage. These factors would determine the impact of worker housing units and the flow of heavy construction. On the north side of the Cumberland Basin site, across from Joggins, is Upper Rockport, a small community which was once an official Canadian port where grindstones were manufactured and exported. By 1970, however, Upper Rockport's population had dwindled to a few year-round residents and a number of absentee landholders.[42]

During the early 1970s the spectacular geographic beauty and the isolation of the community brought a number of utopia seekers from Dorchester, Sackville, and several communities in the United States to Upper Rockport where they formed what one immigrant called "a chickenshit commune."[43] As a result of this new community and a desire by the new inhabitants to improve transportation and communication linkages, the Rockport Community Association was formed. By 1977 the

Association had constructed a unique, octagonal, meeting hall, complete with stained glass windows and skylights.[44]

The Phase I site exploration studies for Fundy Tidal Power proved unsettling to the Rockport Community Association which had a strong feeling of helplessness with the "on again, off again" project. Thus, when a representative from the Wolfville Committee for Responsible Tidal Development arrived in Upper Rockport in an effort to organize a Fundy coalition, the audience of 14 was quite receptive and an official liaison was immediately established with the Coalition. While the Association unanimously preferred tidal power to nuclear power (and feared being down wind of Point Lepreau), the group also expressed numerous social and environmental concerns about Fundy Tidal Power. In particular, the Association feared damage to the marine environment, expropriation, loss of freedom, community change, and an influx of five thousand construction workers.[45]

The Rockport Community Association did not however maintain its interest in the project. The Association changed from a community development agency to a social clique; within both the community and the Association "old-timer versus new-comer" conflicts abounded; and many new-comers deserted the community when their utopian aims were not achieved. Moreover, since the tidal power project was perceived to be in abeyance throughout 1978 and 1979, many members resigned or remained as proxy members.

The Greening of Joggins and River Hebert, Nova Scotia

From a political and administrative point of view, Joggins was

neither fish nor fowl. Although the community had a County Councillor and certain established groups such as the Volunteer Fire Department and the Citizens' Committee, Joggins did not have a local representative government. The community did, however, have several residents with leadership skills who had participated in the Fundy environmental coalitions and who remained committed to the ideals of local education and participation in the Fundy Tidal Power environmental assessment process.

It seemed apparent in March 1978 that Fundy Tidal Power was no longer a dream. On 17 March a Sackville-based correspondent for the Halifax Chronicle-Herald claimed that the land speculation had already begun in the Cumberland Basin area.[46] In April copies of the draft guidelines for the tidal power Environmental Impact Assessment were distributed throughout Cumberland County and resulted in an increased awareness of the potential scope of environmental impact. By 6 May the Cumberland District Planning Commission, which had initially taken a conservative observer's stance with the public interest groups stating that "... the Commission view[ed] the development of such symposia [Tatamagouche symposium, etc.] as significant but preferr[ed] to avoid participation because of possible conflict between levels of government,"[47] had co-ordinated joint Fundy planning efforts with the Department of Municipal Affairs.

While the planning efforts of the Municipality of Cumberland and the provincial Department of Municipal Affairs slowly gathered momentum, a rather curious circular was distributed to Joggins households on 15 May 1978.[48] Entitled The Joggins Community Forum - People, Tides, Land,

Resources, the five page document began with "The Joggins Song" and the following declaration: "The future of Joggins looks brighter, because of the interest shown in tidal power and the possibilities of coal as a cheaper source of fuel. Not everyone is in agreement about the benifits (sic) of tidal power, but the "pro-tidal" are hopeful new industries will be the result and the exodos (sic) of the young will end."[49]

Following a meeting of the Community Forum, Nanciellen Sealy, an ethnologist from the Chignecto Research Group, interviewed nineteen residents in nine Cumberland communities, including Joggins. Her intent was to construct a profile of the region through life histories and to identify local concerns about Fundy Tidal Power. The results of her survey showed that the scope of opinion ranged from supporters (who cited development benefits, lower power rates, and more jobs) to critics (who feared cyclical economic effects and environmental impacts) to sceptics. According to Sealy, the sceptics accommodated Fundy Tidal Power by assigning the project to a familiar category: "It [Fundy Tidal Power], like the Chignecto Isthmus Canal and the Prince Edward Island causeway, were pipe dreams which reappeared from time to time usually in conjunction with elections .... In the long run, it may also be a quite realistic appraisal of the project and its chances for construction."[50]

Despite the labelling of the project as a pipe dream, the communities were not completely assuaged about Fundy Tidal Power. In June 1978 Conn Desplanque, an employee of the Maritime Research Management Service and an authority on tidal and marine construction, spoke to a small but receptive audience at the Joggins Saint Thomas Aquinas Parish Hall.[51] Later in the summer, a Municipal Leaders

Conference on Tidal Power was co-sponsored by the Cumberland District Planning Commission and the Departments of Municipal Affairs and Environment. This event was also poorly attended.

Nevertheless, the conviction remained within the minds of some people in Joggins-River Hebert that Fundy Tidal Power must be countered with some local initiative. There was a perceived need to remain attuned to the Fundy Tidal Power research, to understand and challenge the rationale for the project, and to understand the potential local impacts of the project. During January 1979 several Joggins area residents sought support from the regional coordinator of the Nova Scotia Community Schools' Program to host a series of seminars on tidal power and, after much telephone lobbying, funding was approved.[52] By February 1979 the household flyers which announced a series of meetings on "The Future of Fundy" had been prepared and distributed by the River Hebert-Joggins Community School Association. The meetings were scheduled for 7, 14, 21, and 28 March 1979 at the Lower Cove Community Hall.

The series attracted an average of fifty people to each meeting and proved to be a balanced, a-political forum. Topics ranged from energy futures in the Maritimes (and the Maritime Energy Corporation) to a slide show of tidal construction methods, Cumberland Basin research, environmental assessment, and public participation.[53] The slide show on construction, which depicted the potential size of the development and machinery, was a big attraction, as were as the Ecology Action Centre speakers. The public participation speaker was also well received when he urged the listeners to "be their own experts." However, the

Chignecto Research Group primarily identified the "knowledge gaps" in Fundy Tidal Power, and the Environmental Assessment and Review Panel representative was perceived by the audience to be both disappointing and unduly cautious.

The "Future of Fundy" series provided the communities with an understanding of the fundamentals of Fundy Tidal Power. According to one Community School Committee organizer, the communities had hitherto been misinformed by the media, politicians, and word-of-mouth accounts and within the communities, there had been much arguing about the project. The communities thus viewed each other in competitive terms, despite shared economic and developmental problems.[54]

By the end of the series, the participants had a new awareness of how Fundy Tidal Power could cause strain in their communities. Overall, social issues such as expropriation, provision of services, local employment, bust-boom economics, and opportunities for profits loomed larger for the residents than did than marine or general environmental impacts, such as climatic changes and damage to seabirds. However, the Lower Cove residents, who lead a more agrarian lifestyle than residents of Joggins, feared that part or all of their scenic community would be expropriated or flooded. The residents of this community also accused Jogginers of valuing the birds and the fish more than human beings and identified with fellow Acadian, Jackie Vautour, who at the same time was stolidly defying expropriation for Kouchibouquac National Park in New Brunswick.[55]

By the summer of 1979 Jogginers had a stated ambivalence towards the project. As one resident noted, "everyone is for it [Fundy Tidal Power]

and everyone is against it."[56] Fundy Tidal Power was perceived as a large indeterminable force which could both "hurt a lot and help a lot." The community's perception therefore had matured to the degree that the costs were generally acknowledged with the benefits (see Table 11). Within Joggins, there was also a growing conviction that the costs and benefits of the project would not be evenly distributed between the region and the community.

The community was not however forced to weigh the costs and benefits of the project. In the fall of 1979 the proposal for a Maritime Energy Corporation lapsed into abeyance, a victim of regional political discord. Once more the speculation subsided in Joggins as residents noted that Tidal had gone to the Annapolis Valley instead.[57]

Chapter Summary

When the Fundy Tidal Power Review Board released its Phase I Reassessment Report, Joggins' understanding of Fundy Tidal Power had been greatly influenced by development mythologies of jobs, prosperity, and cheap renewable energy. These mythologies came to the community through the politicians and the media, and created positive residual effects in the minds of would-be developers in Joggins. A cursory reading of the 1977 Cumberland County Housing and Development Survey reveals substantial support in Joggins for Fundy Tidal Power, despite a propensity noted by fieldworkers that certain uninformed respondents answered affirmatively "for fear of losing face."[58]

Shortly after the Fundy Tidal Power Review Board released its Reassessment Report, Joggins and other Cumberland communities learned

that a seemingly centralized information-gathering and decision-making process would be used in the Phase II environmental studies. The community, having emerged from a paternalistic political model in the mining eras to an informal, but determined, civic style, acquired negotiating skills through government community development ventures, while maintaining a strong interest in local political autonomy, as evidenced by the actions of the Citizens' Committee and the Volunteer Fire Department. Due to Joggins' experience with the mines and its subsequent revitalization efforts, the community had a strong will to survive as a collectivity and to define standards for industrial development.

With the participation of certain community leaders in the Fundy environmental coalitions and with the release of the Fundy Tidal Power Review Board report, community apprehension about Fundy Tidal Power began to increase. Through the initial, vicarious actions of the environmental interest groups, and later through direct participation in the Parish Hall and Community School sessions, the community mood shifted from the boosterism evident throughout the 1960s and scepticism of the early 1970s to a confused dualism.

Almost two decades after the failure of the community's sole industry, Joggins still retained a powerful mythological mask over its economic and social woes. To the "outsider," Jogginers communicated a litany of "clean air, world's greatest fossil cliffs, and no better place" but inwardly the community hoped to find some new stimulus, or raison d'être. Fundy Tidal Power, with its aura of unparalleled technological achievement and economic prosperity had initially been presented as a dream development but on closer inspection revealed

nightmarish possibilities for Joggins.

Insofar as Joggins was spared the political dilemma of Fundy Tidal Power, 1979 ended happily. From a "dream on the verge of fulfillment," the project fell once more to "election talk," and real, divisive community issues such as sewers, amalgamation, and church and school closings loomed in the fore as the community's focus reverted to economic and social survival.

CHAPTER VI

THE PROCESS FALTERS AND JOGGINS ORGANIZES

Thirteen years elapsed between the initiation of a study by the Atlantic Tidal Power Programming Board in 1961 and the completion of the fieldwork for this thesis in 1979. During this period of time and despite some widely divergent, although closeted, opinions, the tidal power project did not evolve beyond scientific communication and political posturing. As a result, tidal power did not become a subject of confrontation between the Province of Nova Scotia and any of the Cumberland Basin communities.

The perceptions of tidal power by the community and government were nonetheless very different. At the completion of the Phase I studies in 1977, for instance, the Fundy Tidal Power Review Board, which was composed of a number of federal and provincial public servants, noted optimistically that "... there would not be any major environmental or social problems which would prohibit development of any of the sites."[1] Subsequently, the attitudes of many Joggins residents wavered between cautious optimism and anxiety as they weighed the benefits of jobs against the costs of disruption and expropriation.[2] As Harry Thurston, a writer and resident of the neighbouring community of River Hebert, explained, Fundy Tidal Power had by 1977 acquired a unique social status in many Cumberland County communities. "Through successive generations, tidal power [had] been elevated to the status of ancestral myth. Every election, promises [were] glibly delivered. Under-

standably, as a political ploy, tidal power had lost its charm."[3]

This chapter begins by examining the tidal power environmental assessment and review process which was to be included as part of the Phase II studies. Although these studies were never completed, as a result of the limited financial resources of the project and interprovincial conflict, an examination of the review process demonstrates that the process itself was both poorly conceived and poorly communicated to the communities in the immediate vicinity of the development site.

Communication and Political Processes

In the report issued by the Atlantic Tidal Power Programming Board in 1969 and in the Preliminary Reassessment completed in 1974, the government investigators foresaw the necessity of environmental studies and assessment standards for the tidal power project as well as some form of review and decision-making process. Although these concerns were acknowledged in the Phase I studies conducted by the Fundy Tidal Power Review Board from 1975 to 1977, the major socio-economic impacts of the project were identified in the study as the capital requirements for the project and the requirements for electrical system expansion, rather than those impacts which would be experienced by the community in which the project would be constructed.[4] In a similar manner, the studies for Task Areas 4 and 5 (Socio-economic and Environmental Aspects, respectively) were completed with little consultation with the communities neighbouring the favoured sites.[5]

The Phase I report however had its own social and political impact.[6]

Shortly after its publication in November 1977, the Ministers of Environment for the governments of New Brunswick, Nova Scotia, and Canada announced that "a mechanism for community interaction" would be put in place for the tidal power project via the introduction of a federal/provincial Environmental Assessment and Review Panel.[7] In the press release issued on 22 December 1977, the Ministers also announced that the guidelines for the Environmental Impact Assessment would be subject to public review; that the Environmental Impact Statement then prepared by the project's proponent would be subject to review both by the public and by a federal-provincial environmental assessment panel; and that based on this review, the Ministers of Environment would make a recommendation to Cabinet about the future of the project. The press release also suggested that an information kit would be forthcoming from the Environmental Assessment and Review Panel which would explain the opportunities for public involvement in the review process.[8]

This press release demonstrated a shift in the communication environment which enveloped the Fundy tidal power project, from one of scientific secrecy and political "boosterism" to one which was both more accessible and more conducive to communication.[9] Moreover, as a result of this announcement by the Ministers of Environment, both the scientific data from the Phase I studies and the draft guidelines for the Environmental Impact Assessment became legitimate topics of public discussion.

The operative political processes for the Phase II Pre-Investment Design Program were twofold. During the first year of the three-year Phase II program, a technical, internal review of "... the financial

implications of demand growth and systems expansion with and without a tidal scheme ..." would be conducted.[10] At the same time, an Environmental Assessment and Review process would be initiated by the Environmental Assessment and Review Panel. Through the public information and participation components of the latter, public interest would be represented in the environmental and social impact assessments (see Table 12). Both the Environmental Assessment and Review Panel and the Working Group on Public Participation[11] indicated that they wanted "positive two-way communications" with the public during the review of the assessment guidelines and in anticipation of the extensive Stage III review of the completed Environmental Impact Statement.[12] The Working Group therefore set two general goals for the process: "to provide an opportunity for 'constructive' public involvement and to avoid contention by providing sufficient time for a public review of the documents."[13] The group further proposed that a public participation manager, in conjunction with various combinations of staff and fieldworkers from the three public information offices, conduct various aspects of the program and that the Panel itself receive, assess, and respond to requests for public funding and intervention. Demands for the latter were not however anticipated by the Working Group until "... 1980-81 when the final environmental assessment information [would be] made available to the public for discussion and comment."[14]

On 10 March 1978 the Panel issued a rather vague information package.[15] This package indicated that a series of "widely-publicized" public meetings would be organized by the Panel once the Phase II studies were approved, and that six weeks prior to these meetings, the

draft guidelines for the Environmental Impact Assessment would be made available to the public. The package also described the studies which the proponent would undertake in preparation for the publication of the Environmental Impact Statement, the last stage of the public participation process, and the public and technical review of the Statement. The latter would be followed by the submission of a report by the Panel to the Ministers of Environment. From the contents of the package, it appeared that neither the Panel nor the Working Group intended to include technical hearings on the guidelines during the initial review.

In April 1978 the draft guidelines for the Environmental Impact Statement were distributed throughout the Maritime region. These guidelines included a study of the "degree and effectiveness" of community organization, an issue not included in the Task Area 4 studies of Phase I.[16]

It may be argued that both the Environmental and Social Impact Assessment and the public participation programs were conceived to fulfill political and quasi-legal requirements. It is probable, however, that the proponents of the project wanted to know the potential distribution of the costs and benefits of Fundy Tidal Power for both humanitarian and democratic reasons. Such an attitude is reflected in the Phase I reports, despite the prevailing notion that the public could participate in discussions about Fundy Tidal Power, but not in the decision-making process.

"No Major Environmental or Social Problems ..."

From a tactical perspective, the "public participation program" accepted by the Environmental Assessment and Review Panel was both ill-conceived and very naive. The Working Group had assumed a de facto acceptance of the draft guidelines for the Environmental Impact Assessment in Stage I of the process,[17] a conflict-free "tick-over" period in Stage II,[18] and somewhat extensive participation by the public at the end of the assessment in Stage III, shortly before a decision about the future of the project. The communities in the vicinity of the preferred development site were not however prepared to conform to the vision of the Review Panel or its Public Participation Working Group.

Initially, it may have appeared to the Working Group that a number of questions about tidal power had already been answered on behalf of the communities during the Phase I studies which were completed in 1977. According to a report prepared by R. I. McAllister for the Fundy Tidal Power Review Board, the social analysis was designed to concentrate on three main points:

> (a) Are there apparently strong social reasons for not proceeding with Fundy in terms of such questions as "do the people of the area have strong views against Fundy" and "will a project of this size create social costs that, once recognized, will be regarded as quite unacceptable to the people of the area (and their governments)?"
> (b) Is there social information that could seem to militate strongly against one possible site, in favour of another?
> (c) If the project proceeds, can useful planning generate more benefits and minimize costs?[19]

This analysis was based on the assumption that there would be "no major environmental or social problems" at any of the Fundy sites,[20] that both the public and the communities in the vicinity of the site A-8 were

generally in favour of the project, and that careful planning could generate more benefits and minimize costs.

Both the environmental and the community interest groups which had not participated in the Phase I Reassessment studies were somewhat indignant that the jury was brought in half-way through the trial. The onus for this oversight does not however rest with the socio-economic consultants who were asked to conduct "an initial reconnaissance survey"[21] but with the Fundy Tidal Power Review Board which established the guidelines for the Reassessment studies.[22] In fact, a thorough reading of the socio-economic reports reveals that the socio-economic consultants identified some of the key political and communication issues at the early stages of the study and recommended an improved social impact framework.[23]

Nonetheless, as a direct result of the manner in which the original impact assessment studies were conducted, the community of Joggins was sceptical about the "public information and participation program" devised by the Environmental Assessment and Review Panel for Phase II. Moreover, since it was likely that Joggins would experience more hurt than would larger communities at a greater distance from the preferred site, and that the construction of a tidal power generating station at Site A-8 would result in competition between the social goals of the project and those of the surrounding communities, Joggins implemented its own forum of information and participation.

Joggins Begins to Participate

Fundy Tidal Power was a sacred cow. From its inception, the

project was endowed with a unique political and communication environment complete with definitions of what was constructive "Fundy talk" and what was not. When the Fundy code was broken, sanctions were imposed; when the code was adhered to, rewards in the form of endorsements were provided.

Joggins received both sanctions and rewards. In 1964, for instance, the Joggins Board of Trade petitioned the provincial government to "... give every consideration to the advisability of the immediate development of the Chignecto Complex through harnessing of the Bay of Fundy tides for power purposes."[24] This action coincided with the political will of the Nova Scotia government, and the Tidal Power lobby was therefore applauded by politicians and industrialists throughout Nova Scotia. Conversely, in 1978, two months after the appointment of a federal-provincial Environmental Assessment and Review Panel, several representatives from Joggins attended a workshop sponsored by the Coalition for Tidal Power Education. As a result of their attendance, one of Nova Scotia's leading tidal proponents criticized their interest for being premature.[25] Similar sanctions of both a formal and an informal nature had been exercised earlier by the media, regional industrialists, and politicians and had resulted in a general lack of public dissent and public participation until the end of the Phase I studies.

Leonard and Partners, the principal socio-economic consulting agency hired by the Fundy Tidal Power Review Board for the Phase I studies, stated in its report that one of the reasons "... for lack of interest and more specific awareness stemmed from the fact that the idea of developing Fundy Tidal Power [had] been "kicked around for decades

without it coming to anything."[26] In other words, it appeared that the residents of Joggins perceived tidal power development as a very remote possibility.

Key informants surveyed by Leonard and Partners generally favoured the project and also surmised that there would be little opposition from the general public. As a result, the consultants concluded that organized opposition would most probably be evident "... in the main centres, particularly among environmental and alternative energy groups, but it should not be ruled out in rural areas or small communities."[27] Based on their respondents' recommendations that "opposition (if not conflict) could be in large measure avoided"[28] by the inclusion of municipal administrators and planners in the assessment process, Leonard and Partners also urged that "a program to help citizen organization and liason" be established at the outset of the Phase II studies.

Although it was indicated that the municipal planning authorities would be included in the assessment process and that a "public information and participation program" would be implemented by the Environmental Assessment and Review Panel, environmental and public interest groups perceived a need to coalesce and to participate in the Fundy studies early in the process. This perceived need conflicted with the prediction of the Working Group on Public Participation who advised the Environmental Assessment and Review Panel in September 1977 that demands for public funding were unlikely until 1980-81 when "... the final assessment information [would be] made available to the public for discussion and comment."[29]

Despite the absence of a formal proponent for Fundy Tidal Power, of

interest group funding, and of formal channels of communication with either the project proponent or the regulatory agency, the environmental and public interest groups began to organize themselves in 1977. By July the Coalition for Tidal Power Education had received $1000 from Imperial Oil to prepare a slide/tape show on tidal energy, and by February 1978 the Coalition had procured $4200 from the Secretary of State to pay for the costs of organizing a tidal power seminar in Tatamagouche.[30]

Although the Coalition, later reorganized as People, Tides, and Energy, collapsed in 1978, the group did manage to establish several precedents. The planning committee for People, Tides, and Energy itself recognized that "... never before [had] individuals and organizations with such diverse interests ever come together on a development project in the Maritimes at such an early stage."[31] The organization also served as a prototype and a form of social reinforcement for the Joggins Community School Committee which, following the disintegration of the regional organization, assumed the task of disseminating information on tidal power throughout Joggins and the neighbouring communities, and adopted as its philosophy a phrase used earlier by the Coalition: "Education and participation should begin with local people in their community."[32]

Chapter Summary

This chapter describes how, on the eve of the implementation of the environmental assessment and review process for Fundy Tidal Power in 1977, the Fundy Tidal Power Review Board continued to underestimate the

potential opposition to the tidal power project in the communities surrounding the preferred development site. On the one hand, the Board presumed that there would be no prohibitive environmental or social problems at any of the proposed development sites. On the other hand, the Cumberland Basin communities demonstrated a fair amount of scepticism about the review process, regarding it and tidal power as political ploys with the status of ancestral myth.

The release of the Phase I report had a political impact which wholly surpassed the efforts of the Fundy environmental assessment panel to establish a communication forum for project impacts. But, as delays in the incorporation of the project proponent and in the commencement of the review process occurred, the Cumberland Basin communities became increasingly apprehensive about the environmental assessment process. Although the public participation program was neither publicized nor implemented beyond the release of draft assessment guidelines, internal documents reveal that the program was conceptually naive, particularly when one considers the potential social impact of Fundy Tidal Power.

Thus, as a response to this naiveté, Joggins was obliged to implement its own "participation program," thereby overcoming the informal sanctions against activism. Moreover, this activism, which was originally manifest by the formation of the Tidal Power Coalition and later by the organization of several public meetings on tidal power in Joggins, upheld the prediction by the Phase I consultants that opposition to Fundy Tidal Power was possible in the rural communities adjacent to the proposed development site -- a prediction which was virtually ignored by the Working Group on Public Participation.

CHAPTER VII

TOWARDS A MORE COMMUNICATIVE PROCESS

At the conclusion of the preliminary tidal power studies in 1977, the interests of the regional governments and the residents of the Cumberland Basin communities began to coalesce and polarize, resulting in what might be described as latent conflict. Such conflict need not however be perceived as a destructive force, particularly since it propelled the community to participate in the decision-making process, thereby enhancing its political competence.

This chapter extends the communication analysis begun earlier in the thesis by identifying the theoretical basis for public participation in the decision-making process. Alternative philosophical and methodological perspectives are discussed so as to provide a context for both the actual and potential communication among the regional advocates of Fundy Tidal Power, the community, and the environmental assessment panel.

The thesis concludes by demonstrating that both short-term, project-oriented goals and long-term, democratic objectives are served by a dynamic, interactive process of communication, for within this context, the participants in the decision-making process are better equipped with the tools to predict, avoid, and mitigate the impacts of resource development projects.

Public Participation in Environmental Assessment

The academic sources for public participation in environmental assessment are drawn from a broad historical and disciplinary spectrum. Both environmental assessment and planning fall within the natural and social sciences. Public participation as a tool of assessment is referenced in law, political science, sociology, and planning. In recent years, scholars in environmental studies, communication, and ethics have added further breadth to this spectrum, and have sought to resolve contemporary environmental issues through their own particular multi-disciplinary paradigms.

The notion of widespread participation in the government of society and in the management of industry actually dates from the eighteenth century, and includes the work of such social philosophers such as Rousseau and John Stuart Mill as well as that of contemporary humanists. Within the past fifteen years (since the publication of the Report by the Atlantic Tidal Power Programming Board in 1969), environmental assessment research has mushroomed, largely as a result of what the Organization for Economic Co-operation and Development has called "the participatory demand."[1] Within this period of time, environmental legislation has also resulted in a greater volume of literature written on the social and participation aspects of project assessment. The latter, which has been provoked by the construction of large-scale resource development projects throughout North America, represents a departure from the theoretical nature of earlier research. Written by government agencies and commercial consultants in response to very practical situations, environmental impact literature has acquired a

project orientation with an emphasis on technical and empirical approaches.

The motives for legislated or voluntary participation in the decision-making process are diverse. From an extremely pragmatic perspective, public participation may be practised as what Reg Lang and Audrey Armour describe as "a hedge against later criticism that insufficient opportunities to participate were offered."[2] Project proponents have also demonstrated, although somewhat less commonly, a concern that inadequate participation in a development decision may "transform the manipulated community into a formidable agency opponent for subsequent developments."[3]

Public participation in environmental assessment as a data-gathering or planning process is another common pragmatic perspective. Working from this definition of participation, Roy Bowles argues that "local residents should be incorporated into the assessment process in such a way that they can protect the outside expert from the errors resulting from his own conceptual specialization."[4] Indeed, Joggins fishermen confirmed Bowles' hypothesis when they took issue with sediment analyses, conducted in Cumberland Basin by research scientists from Mount Allison University, during the Community Schools' Series on The Future of Fundy Tidal Power. Had such a forum been incorporated into the assessment process for the Fundy Tidal Power project, there is little doubt that it would have resulted in better data, hence, a better decision.[5]

Public Participation as a Means to Accountability

The judicial model for public participation is based on the concept of accountability. In an essay entitled "A Disciplined Framework for Public Participation," Andrew Thompson suggests that public participation is a means to a particular end and that in the case of accountability, "the principal end is to establish in an open way that a policy, program, or project is in the public interest."[6] Prior to the introduction of the Canadian environmental assessment and review policy in 1973, government-sponsored projects always faced a legislative test of accountability. Following 1973, public participation in the decision-making process was implemented as a means of determining the public interest, thereby adding a second level of accountability to the process.

Under the system of English common law, judicial and quasi-judicial bodies, including assessment panels, are obliged to observe the principles of natural justice. For instance, if individuals are denied the opportunity to hear how their rights may be specifically affected by the actions of a developer, or if they are denied the opportunity to contest the arguments presented by the developer, then the courts may intervene to ensure both the right to a fair hearing and the right of rebuttal. The test of accountability may therefore be based on the observance of the principles of natural justice. Accountability may also be tested by the observance of due process, since as Thompson notes, "The most frequent flaws in public participation proceedings today are failure to define basic policy issues, failure to tackle issues in the proper order, failure to allow adequate time, failure to

provide information, and failure to tailor the participation procedures to the particular circumstance."[7] By addressing these issues, due process ensures that accountability is both more effective and efficient. Observance of both of these criteria, the principles of natural justice and due process, is an essential step towards accountability in project decision-making.

Participation as Social and Political Development

Although public participation may be described as a means of the rendering the decision-making process more responsive, it may also be seen as either mitigation, or as a means to a more democratic state.

Public participation as a means of mitigating impact is a corollary of the "assessment as planning" theory. Through involvement in environmental assessment and decision-making processes, communities such as Joggins should be in a better position to preserve their social vitality, thereby weathering the social change induced by the construction of megaprojects. For Joggins, the advent of Fundy Tidal Power could have entailed an exodus from the community or a drastic change of lifestyle which, in turn, would have diminished the sense of commitment to the community by its residents. Either alternative would have had negative psychological and social implications since, as Bowles notes, "(1) families and individuals are better able to adjust to new behavioural demands if they are connected with continuing networks of social support than if they become socially isolated, and (2) community political efficacy can be maintained or enhanced through collective action to deal with an impacting event."[8]

Joggins' collective ability to articulate its goals and communicate with external agencies evolved most during its years of revitalization. Despite the loss of younger, skilled workers during these years, the community was strengthened by newcomers who helped Joggins secure advice and resources from the larger social system, while minimizing external manipulation.[9] This internal means of adjustment helped preserve and protect cherished community values.

The notion of political efficacy as mitigation is also related to the democratic basis for public participation which Carole Pateman describes in Participation and Democratic Theory. According to Pateman, participation performs an educative function which consists of "both the psychological aspect and the gaining of practice in democratic skills and procedures."[10] This function might be restated: the more people participate, the better they participate; the more participatory the society, the more democratic the polity. Thus, the educative function of participation becomes a vital hypothesis in a theory of participatory democracy.[11]

Throughout this study, the will and the capacity of a government megaproject developer to communicate, in a sharing sense, with a rural community has been examined. The distinction "government" is imperative, insofar as it evokes the protective, unifying pact of individuals in the state which Rousseau characterized as "a social contract." Within the terms of this contract, Rousseau described government as "an intermediary body established between the subjects (citizens who have placed themselves under the law of the state) and the sovereign (the body politic) for their mutual communication, a body

charged with the execution of the laws and the maintenance of freedom, both civil and political."[12] Thus, in a well-balanced state, citizens are both sovereigns and subjects, and the role of government is to regulate both the body politic and its citizens.

Striving towards a participatory theory of democracy, Pateman builds on Rousseau's vision of democracy and drawing from both John Stuart Mill[13] and twentieth-century theorist G.D.H. Cole,[14] concludes that participation or "mutual communication" in a democratic state means participation in the making of decisions, protecting private interests, and ensuring good government. Moreover, since participation at the local level has both an integrative function for citizens and aids in the acceptance of decision-making, Pateman observes that democratic constitutions must be supported by democratic institutions beyond the central government. Unlike some contemporary, political theories, Pateman's theory of participatory democracy implies that by providing the opportunity for individuals to acquire the fundamentals of self-government at the local level, the stability of political leadership is preserved while at the same time the individual maintains control over the political mechanism.

Certain contemporary theorists suggest that the average person is rendered incapable of participating in politics so as to prevent him from challenging the existing distribution of power and wealth, a concept known as the consent of the governed.[15] This concept was of course vindicated in Joggins during the years in which autocratic mining companies thwarted the community's political evolution. In more recent years, however, the participation of residents in the community's

revitalization efforts performed an educative function which, in turn, facilitated their efforts in encounters with the proponents of Fundy Tidal Power.

Thus, within the context of participatory democracy, the decision-making process must include not only the determination of the public interest but also the assurance that decisions are democratically made. The determinants of impact must therefore be expanded to include the manner by which development decisions are made, the way by which development decisions are shared with the public, and the means by which development projects are implemented and monitored. In terms reminiscent of a cybernetic theory of communication, a participatory model of decision-making is one in which "maximum input [participation] is required and where output includes not just policies [decisions] but also the development of the social and political capacities of each individual so that there is 'feedback' from output to input."[16]

The Limitations of the Social Systems Model

The Phase I studies of the Fundy Tidal Power Review Board studies were based on engineering, environmental, and socio-economic systems models. As implied in the Phase I report and in the draft guidelines for impact assessment, the Phase II environmental studies were intended to expand the systems models for presentation in the public hearings at the end of the environmental review. The assessment panel thus anticipated public and collective community responses which would guide the decision-making process and the implementation of the project. It also presumed that the response of the proponent, the public, and the

panel would be made directly and primarily to the actions of the other, rather than through an interpretive or mediating process. These presumptions were accompanied by what Disanto et al. describe as "the simplistic notion of manipulation of objectively measured elements as means of mediating the type of impacts that result in conflict."[17] Such a notion explains little about the process of interaction involved in mediation.

Disanto et al. describes this style of assessment and public response as a social systems approach which is based on structural functional theory.[18] Social systems thinking, akin to the analytical and philosophical perspectives of biological, engineering, and economics disciplines does provide a high capacity to quantify and use variable analysis. Presuming that individuals are indeed "organisms with some degree of organization," who respond mechanically to forces and elements of social systems, nonetheless tends to make reckless presumptions about social systems and impacts, and often reflects, as noted by Liora Salter and Debra Slaco in Public Inquiries in Canada, an "inappropriate commitment to an engineering orientation."[19]

The Phase I socio-economic consultants had approached community impacts from an "initial reconnaissance" perspective, due to concerns by the Review Board about the adverse politicization of the community and limitations of time and money.[20] Nevertheless, the Review Board ignored the preliminary and tentative nature of these socio-economic studies and concluded that environmental or social problems were not key considerations in deciding about the future of Fundy Tidal Power. For the Board, the greatest social considerations in planning the project were

the requirements of capital and electrical system expansion.[21] By making such conclusions, the Board thus drew inferences beyond the competence of the methodology of the initial study and relied on value judgements which relegated community impacts to a less significant area of research.

Conversely, the thesis fieldwork used a highly productive and satisfying "bottom-up" methodology which demonstrated considerable potential for the prediction, avoidance, and mitigation of project impacts. Participant observation provided an interactive, although uncommon, approach to project assessment whereby data-gathering became an animated transaction or exchange of knowledge between community residents and the fieldworker. This process was both symbolic and interpretive.

Communication and the Regional Advocates

Communication by the regional advocates of Fundy Tidal Power conformed to three general phases: reconnaissance, promotion and analysis. As Chapter III documents, all three forms of communication were manifest concurrently by the diverse advocate groups, although one form usually predominated. Proprietary communication occurred within the industrial and academic milieu of the early studies. Promotional behaviour predominated during the years in which the Chignecto Canal Committee was most active. The behaviour exhibited by the Atlantic Tidal Power Programming Board and the Fundy Tidal Power Review Board was investigative in nature.

Neither the early studies nor the political boosterism of the Fundy

debate can be perceived as promoting accountability. During the early studies, the private developers, who were either industrialists or academics, conducted independent, small-scale research for entrepreneurial motives. At the same time, the public representatives, in particular the Maritime Marshlands Rehabilitation Agency and the Nova Scotia Power Corporation, monitored tidal power technology in a confidential way. The latter appear to have been directed by the presumption that "the government is the people," since their work was intended for the greater good, in the social contract sense.

While there were clearly elements of accountability in the Report of the Chignecto Canal Committee which was submitted to the Prime Minister in 1961 and in legislative discussions on the subject, the orientation towards inspirational rhetoric dominated the public forums of the day. Advocates of the project described Fundy Tidal Power in patriotic terms, thus avoiding or minimizing the environmental issues. Such mythologies also succeeded in placing the Atlantic Tidal Power Programming Board study on the federal and provincial agendas in 1966. Both the Atlantic Tidal Power Programming Board and the Fundy Tidal Power Review Board, like commissions of inquiry, functioned independently from government departments. Both Boards were given the mandate of assessing the feasibility of developing Fundy Tidal Power, [22] and included representatives from the provincial and federal departments responsible for economic growth, energy, industry, and the environment.

While these Boards were accountable in the sense of conducting a thorough investigation of Fundy Tidal Power, they were not proponents of the project in the legal sense and thus were unconstrained by federal or

provincial legislation.[23] Unlike commissions of inquiry, they were not obliged to define or examine publicly the fundamental issues of regional or energy development, nor were they constrained to provide ample opportunity for public information and participation. In spite of their terms of reference, the manner by which the preliminary studies were conducted, and the failure of the Boards to provide for "due process," both the Atlantic Tidal Power Programming Board and the Fundy Tidal Power Review Board concluded that neither environmental nor social problems need interfere with the economic merit of the project.

As a result of these conclusions, representatives from the regional utilities (which were also represented on the tidal boards) demonstrated an interest in establishing co-operative, non-adversarial relationships with "legitimate," interested parties. The informal, private meeting approach (the model used for labour negotiations) allowed the utilities to avoid the risk of polarizing opinion,[24] and to distinguish between participation by duly-elected representatives and participation by "minority" vested interests, who were perceived to use the forum of public hearings to draw attention to their opinions. According to an engineer employed with the Nova Scotia Power Corporation, the latter opposed all types of development and wished to impose "back to the land" values on all of society.

For the most part, the regional advocates of Fundy Tidal Power demonstrated four general reservations about citizen participation in the decision-making process.[25] First, it appeared to the regional advocates that public interest groups as possible intervenors were more interested in the larger generic issues of energy conservation,

alternate vs. conventional sources of energy, nuclear power, etc. than they were in feasibility studies for a specific generating station. Yet, Salter notes, with reference to the inquiry which preceded the construction of the Point Lepreau Generating Station, "nothing in the policy process would have allowed [the underlying strategy which made nuclear power a 'logical' choice] to surface and be debated effectively outside cabinet. Even a reformed Environmental Assessment and Review Process would have been insufficient for the task."[26]

Representatives of the regional utilities also questioned whether laypersons could participate effectively in complicated system planning processes without special qualifications, whether the early disclosure of planning information would interfere with the purchase and/or approval of a preferred site (thereby placing the utilities at a tactical disadvantage), and whether public interest groups, especially the environmental coalitions, could behave in a rational and constructive manner, and be willing to accept ambiguity in the planning process as well as compromise.

The advocates of Fundy Tidal Power also failed to distinguish between issue-oriented, or "expressive" groups such as the Joggins Community Schools' Committee, and what Jacoby and Babchuk describe as "instrumental" groups, or those which pursue strategies for environmental quality for its own sake.[27] Puzzled officials who did not fully understand the motives for participation in Joggins thus assumed that individuals with ideological motives (which were generally perceived to be less legitimate) had "activated" community residents.

The tendency to censure ideological participants, the propensity to

favour a "closed-door" bargaining process, and the predisposition to fear open planning and shared power characterize the regional advocates of Fundy Tidal Power. For both the advocates and investigators of the project, to participate in an open, communicative forum was to run the risk of prematurely raising public expectations, thereby jeopardizing the site selection process and inviting delays. The regional tidal power advocates thus demonstrated specific perceptions about the forms of communication behaviour which were appropriate within the context of the decision-making process in which they were working.

In Pursuit of Justice

It is probable that Joggins' participation in the pro-tidal lobby of the 1960s represented a desire for local jobs, more than an intrinsic attraction to tidal power technology. However, community research during 1978 and 1979 indicates that the residents of Joggins held a broad spectrum of opinions about the project, ranging from enthusiastic support to militant opposition,[28] and that some community leaders who petitioned the government to develop tidal power during the 1960s were moderately opposed to the project by 1979. The community of Joggins was thus capable of exhibiting a wide range of behaviour about the project, which eventually made it difficult for regional advocates of the project to understand why community residents responded as they did.

Joggins might be perceived as a micro arena of interaction within the macro arena of the Fundy debate. The three categories of "major actors" identified by Leonard and Partners in the Reassessment studies, i.e. government, private industry, and the public, were present in both

local and regional spheres. Moreover, via the direct "vertical linkages"[29] which the regional and provincial actors maintained with their local counterparts, the opinions of the regional actors were represented at the community level. These linkages, some of which were remnants of earlier eras of development in the community, often influenced and hampered community consensus.[30] For instance, the wealthier, former mine management and merchant families who lived on Main Street, were more apt to support civic improvements in street lights, sewer or recreation facilities, whereas the poorer "miner" families who lived on the side streets were less apt to support civic improvements.

Within Joggins, or the micro arena of interaction, "horizontal linkages"[31] among community residents were stratified as a result of the mining years. "Lower class" groups therefore did not participate in the early discussions about tidal power, because of their socio-economic status within the community.

By the mid-1970s, various community "enablers"[32] were able to stimulate sufficient interest in tidal power to organize a series of community meetings at which senior tidal power advocates, environmental scientists, and a member of the Environmental Assessment and Review Panel were present. These meetings were unanticipated by the Working Group on Public Participation, but were supported by a $300 grant from the Nova Scotia Department of Education, and represented a venture unique to Joggins in the Fundy debate. Indeed, had the Fundy debate continued via the implementation of the Phase II studies, the community could have emerged as a prominent "underdog" for neighbouring Cumberland Basin

communities and Fundy opponents alike.

Despite the efforts of the Community Schools' Committee and the "world's greatest" ideology promoted by the activities of the community's competitive athletic teams and zealous volunteer Fire Department, Joggins did not achieve community consensus on all of its internal development decisions. Yet, there is evidence that the community discussed development topics more than other Cumberland County communities. Data obtained through the 1977 Cumberland Housing and Development Survey demonstrates that 68.1% of the respondents from Joggins learned about tidal power through discussions, as compared to 59.6% of the respondents from River Hebert and 21.8% of the county residents.[33] As a result of this style of interpersonal communication, Joggins residents had a tendency to view the closing of a local church or school as having a collective impact on the community, even when some residents did not have school-age children or attend the threatened church.[34] Similarly, Fundy Tidal Power evoked solidarity among community residents who feared evacuation or a boom-bust cycle, although the community offered no collective, overt resistance to the project.[35]

Despite the financial obstacles imposed by the isolation, age, and poverty of the community, the residents of Joggins wanted some form of polity through which conflict among the various factions in the community could be resolved and through which local interests could be represented in municipal and provincial forums. This will was inhibited by the County Councillor, who kept groups such as the Citizens' Committee in check through his understanding of community symbols and politics, and by invoking the ward/warden model of governance. This

model was first introduced to the community by the coal-mining companies and continued to have symbolic power in Joggins throughout its history.

Thus, throughout the 1970s Joggins subscribed to conflicting local political models. On the one hand, the County Councillor and his protégés emerged as brokers for federal and provincial welfare programs, thereby preserving Joggins as a "client of modernization."[36] On the other hand, new, more democratic community institutions evolved during the decade which threatened to erode the power base of the County Councillor.[37] A new political competence thus emerged in Joggins as the tidal power discussions progressed. This competence, which resulted in transfusions of money into the Joggins-River Hebert area for numerous "community improvement" projects, stimulated community interest in such issues as sewage problems and tidal power.[38]

Although the contamination of the community's water supplies by raw sewage failed to bring political action, because of the familiarity of the hazard and the small scale of the problem, Fundy Tidal Power had an inadvertent politicizing effect on Joggins. The issue moved from the perceptual categories of "election talk" to "studies," which were perceived as an ongoing issue, to an "acute" community concern. At the acute stage, Joggins invited government officials to participate in the community's own forum on tidal power, a tactical move which was disquieting for the Nova Scotia Department of Environment official on the Environmental Assessment and Review Panel.[39]

Fundy's vulnerability to "socio-economic" impact was predicted by the Review Board's own consultants, Leonard and Partners, who understood that the economic benefits in the immediate proximity of resource

development projects are generally outweighed by economic costs (ie.) dislocation, loss of environmental quality, etc.[40] The release of this report, coupled with its reflexive effect and the announcement of the Phase II studies, provided what Dennis Ducsik describes as a rationale for local extremism: "a natural response on the part of concerned citizens to a perception that unless they resort to unorthodox tactics, their strongly held values will be excluded altogether from the decision process."[41] The mild, local "extremism" exhibited by the Cumberland Basin communities was thus founded both on a perception of impending social and environmental change, which they would be powerless to influence.

Conclusions and Recommendations about Participation in Assessment

The conclusions which may be drawn about the Fundy Tidal Power Assessment Process are many. First, the regional politicians seemed to have abdicated decisions on the broad Fundy Tidal Power social and environmental issues to technical experts and technical processes. This propensity seemed evident during both the non-participatory studies of the Programming and Review Boards. Furthermore, the environmental officials were allowed to launch a public participation program which provoked a confrontational posture by public or environmental interest groups, and favoured a centralized data-gathering/decision-making approach. As a result, the Cumberland communities felt a responsibility to take collective action to prove why the Basin should not be used for tidal power, even though there had been no formal proponent declared.

The community of Joggins thus sought full disclosure of project

impacts, having been denied an opportunity to present its case to the investigators of Fundy Tidal Power during the Phase I study. Thus, the community doubted that an open, consensus-oriented decision would be made. Moreover, since the Environmental Assessment and Review process would have been Joggins' only "kick at the can," the community was prepared to assume an adversarial position.[42]

Secondly, the credibility of the Fundy environmental assessment/ decision-making process was at risk. Given the regional significance of Fundy Tidal Power, its symbolic stature, and the support which it garnered from the region's premiers, the concern demonstrated by Cumberland Basin communities about the fairness of the decision-making process was not without basis. To be credible, the Environmental Assessment and Review Panel would have to have been perceived to be especially sensitive to public concern and to exercise firm, decisive control over the assessment and review process. Instead, it appeared that the project proponents were willing to gamble upon the willingness and ability of the Panel to define communication on the project in such a way as to sanction the construction of the project and to negotiate the costs in the best interest of the developer. "Under these conditions," Salter and Slaco observe that "environmental assessment is a negotiating strategy, a means of establishing fundamental data and giving prominence to certain engineering design questions."[43]

Thirdly, the community of Joggins had developed its own working definition of appropriate communication behaviour within the Fundy Tidal Power debate which formed the basis for its decision to participate. This decision was motivated by a fear of loss through not participating,

rather than by a genuine expectation of gain. A unique lifestyle had been developed by the community which provided a form of local economic vitality derived from barter, traditional occupational pluralism, direct income from social welfare programs, and industrial wage labour.[44] While increased construction employment might have resulted from the construction of the Fundy Tidal Power project, the community also feared that sudden, massive change would jeopardize both the social and economic structure.[45]

Fourthly, the community's interpretation of the Fundy debate was a more influential determinant of its communication behaviour than was the establishment of a formal public participation program designed by the Federal Environmental Assessment and Review Panel. This determinant is manifest both by the prior participation of Fundy Basin communities in the tidal power environmental coalitions and by the inherent design and philosophy of the public participation program. It must also be recognized however that the panel's initiatives were highly contingent upon the approbation of regional governments and the designation of a project proponent.

Finally, it must be noted that the use of socio-economic systems models were not wholly adequate for either the scale of the Fundy Tidal Power development or the social and economic institutions at the community level. As Scott Wood notes, the economic indicator models used for social indicator development assume that "analysis and sound decision-making can be guided by the economists' notion of marginal utility."[46] There is some question as to whether the systems models used both in the Phase I report and in the draft assessment guidelines had

comprehensively identified the components of the appropriate social systems, particularly the components capable of generating conflict between the proponent and affected local communities. Similarly, there is some question as to whether the social systems models could enable the avoidance and mediation of conflict, especially since it appears that the Fundy Tidal Power planning process would not have encompassed the natural growth of locally responsive economies and the informal establishment of locally relevant social institutions.

As an alternative to the adversarial approaches which were probable during the Phase II assessment and review, the project proponent and the assessment agency could have reappraised their definition of communication processes. Had the Environmental Assessment and Review proceeded, it is likely that the process would have been nothing more than a negotiating strategy for the project proponents, especially if the community's interpretation of the debate had not been fully understood and constructively integrated within the decision-making process. As a pre-requisite then to understanding the symbolic context of the Fundy Tidal Power debate, the Federal Environmental Assessment and Review Panel had a responsibility to understand the perspectives of key players and groups.

In earlier chapters, the social milieu of resource development projects was characterized as a communication environment. This environment provides a context for individuals to give meanings or to "make indications to themselves of things in their surroundings which thus provide a guide to their actions,"[48] a process which Herbert Blumer describes as "self indication."[49] In the Fundy debate, individual

lines of action coalesced into group action through a process of ascertaining the meanings of others as a first requisite of building concensus. Thus, environmental interest groups and community groups initially formed and later created coalitions, and the electrical utilities banded together through common definitions of opportunity and benefit. Conversely, both the interest groups and utilities disbanded when divergent definitions evolved within their associations.

The Assessment Panel also had a responsibility to better tailor its proposed public participation program to the specific needs of Cumberland Basin communities. Within the communities, there were certain pre-conditions, described collectively by Salter, as a paradigm of public participation which played a continuing role in citizens' interaction with project advocates.[50] Two of these pre-conditions, the means for participation and cognitive data, were within the Panel's potential sphere of influence, and could have influenced both the level and quality of public involvement, thus providing the basis for a more democratic form of decision-making.

Providing the means for residents of Joggins to participate on either an individual or a collective basis would have been an arduous task, considering the duration and complexity of the Fundy Tidal Power decision-making and planning processes. Nevertheless, community participation would have been facilitated and improved by collaboration between the Working Group on Public Participation and a municipal agency on such matters as initial organizational assistance, a community-oriented framework for cooperation, and direct citizen access to technical and professional expertise.[51]

Neither the information feedback nor the fixed consultation approach favoured by the Working Group on Public Participation would have been adequate to order or structure the inevitable conflict toward ameliorative structures and solutions. Given the political will evident within Joggins, a joint planning or delegated authority perspective would have been warranted as part of the Environmental Assessment and Review Process. Such a perspective would have placed an emphasis on public and community involvement and led to an interactive process of communication, based on mediation and negotiation.[52] This perspective could have, in some manner, incorporated the labour relations model preferred by the Fundy advocates, a relationship characterized by Dennis Ducsik as hard-nosed bargaining:

> Given human nature, it seems more pragmatic to conceive of interaction in terms of hard-nosed bargaining, in which participants are asked only to seek a compromise consistent with their own interest. In this way, accommodation can often be reached even if the respective parties don't accept each other's facts, figures or line of reasoning, because each side is motivated at least initially by the realities of what can be gained from compromise.[53]

This bargaining process could have transpired according to the tenets of due process, with clearly defined arbitration and appeal channels especially in matters of mitigation or compensation. Implicit is the assumption that there should be more direct and active involvement by legislators.

These recommendations are, after Blishen, grounded in "the conception of community process and change in which the current objective economic, social and political structures of the community exist in a subjective social, and psychological climate of attitudes and

values."[54] They presume that communities such as Joggins, with a reasonable level of functional competence, whether newly-emergent or longstanding, are capable of articulating guidelines for an assessment and impending impact due to the community's own resources and processes.[55] The potential success of impact research in such communities is highly contingent upon the researcher's ability to explain the motives underlying the research and to feed back "meanings" into the local communication environment.[56]

Chapter Summary

Failure to mobilize a Maritime Energy Corporation as a sponsor of nuclear and tidal power megaprojects functioned as a redeeming "stay of proceedings" for Phase II of the Fundy studies. The Fundy Tidal Power Review Board and its predecessor had relied unduly upon social systems models of development as well as hurried socio-economic analyses, and therefore generalized about minimal social and environmental impact. The Board had very definite strategic notions about project communication, although it advocated co-operative, non-adversarial relationships with "legitimate" local interests.

Joggins' ambivalence towards tidal power may have reflected confusion between a belief that the project could reinstate a corporate patron/employer in the community, and the fear of social, economic, and environmental destruction. Despite the retarding influence of the mines on the development of local democracy, Joggins' internal communication and subsequent experience with revitalization equipped the community for partnership in environmental decision-making. Assessment and review was

perceived by community leaders as a proponent-panel pact, whereby only "benign" communication such as information feedback or consultation would be exercised.

For the community, the need for accountability and the need to mitigate project impacts were critical motives for participation in the development decision. Beyond open determination of the public interest, the ultimate test of accountability is, nonetheless, the evolution of a socially and politically efficacious citizenry, willing and able to bargain with the government developers of tidal power.

Characterizing the developer/community relationship on either a conflict or consensus basis is highly contingent upon the symbolic processes already at work, both within and between these entities. As a consequence, environmental assessment panels are obliged to understand and refocus the conflicting interpretations of proponents and intervenors. The assessment itself should be prefaced by a genuine commitment to a social contract whereby more democratic communication processes such as joint planning or delegated authority may be implemented.

A collective bargaining or labour relations contract model could provide a more constructive context for assessment than does the current adversarial hearing process of the Federal Environmental Assessment and Review Office. Future processes must be based on the political equality, need, and the capability of local interests to participate in the environment versus development bargaining. The criteria of due process - definition of issues, sequence of issues, sufficient time for participation, availability of information, and customized participation

procedures - apply equally well to consensus-oriented approaches.

Furthermore, the environmental assessment process should not diminish ultimate legislative responsibility for regional or provincial accountability, the role of the courts when arbitration or compensation is warranted, and the electoral process which is, perhaps, the ultimate form of accountability. To some advocates of development and elected representatives, power-sharing from the outset of project decision-making erodes the tradition of responsible government. To them, the question might be asked, "If an economic development, whether advertently or inadvertently, subverts the rights and social development of individuals within the state, does the development truly contribute to the future political stability of the realm?"

TABLES

TABLE ONE

Population of Joggins, Nova Scotia
Census Subdivision A, Division of Cumberland
1901-1976

Year	Population
1976	692
1971	777
1966	799
1961	909
1956	873
1951	1049
1941	1109
1931	1000
1921	1732
1911	1648
1901	1088

Source: Census Canada

TABLE TWO

Mine Production
Joggins Area Coalfields
1867-1966

Mine	Seams	Dates	Production	Peak Year-Tonnage
Joggins	Joggins/Fundy	1867-1966	3,133,049	1916 - 201,915
Fundy Mines	Fundy/Forty Brine	1903-1934	147,120	1932 - 16,135
Fundy No. 6	Fundy	1929-1930	8,722	1930 - 5,579
Maple Leaf	Joggins Bench	1920-1943	988,418	1929 - 87,326
Maple Leaf #4	Joggins Bench	1929-1939	607,202	1929 - 87,326
Maple Leaf #5	Joggins Bench	1930-1931 1943	11,877	1943 - 4,726
Casey	Joggins Bench	1923	4,053	
Bayview	Queen	1923	25,770	
Bayview #8	Forty Brine	1939-1961	2,092,390	1943 - 127,873
Trestle Brook	Fundy	1925-1928	3,156	1927 - 1,378
Seashore	Fundy	1934-1943	124,488	1935 - 27,360
Green Crow	Forty Brine	1935	616	
Hillcrest	Forty Brine	1941-1942	130,903	1942 - 103,548
Lower Cove	Fundy/Hardscrabble	1904-1915	25,709	1904 - 9,037
Sub-total, Joggins			7,303,473	
Sub-total, River Hebert			4,859,368	
Sub-total, Maccan			1,291,564	
Total			13,454,405	

Source: Gregory, D.J. Coal Production Figures for Nova Scotia, 1863-1976. Halifax. Nova Scotia Department of Mines and Energy, Open File Report 327, 1976.

TABLE THREE

Socio-Economic Breakdown of Membership
Joggins Board of Trade
1965

Total roster - 49 active members
- 11 inactive members

Retired - 7	Mine Operators - 2
Teachers - 6	Nurses - 2
Skilled Labour - 6	Engineers - 2
Unskilled Labour - 6	Insurance - 2
Store Managers/Operators - 6	Tourist Operator - 1
Mechanics - 3	Bank Managers - 1
Service Station Operators - 3	Barbers - 1

Joggins - 34 members	Amherst - 2
River Hebert - 12 members	Maccan - 1

Source: Joggins Board of Trade, Membership report, 1965

TABLE FOUR

Economic Evaluation Summary of Benefits and Costs
Cumberland Basin Site A-8

ITEM	COSTS Retimed Storage - 250 MW* MIS-NEPOOL TIE - 500 MW
MIS gross value from tidal	950.7
NEPOOL gross value from tidal	48.6
Total gross value from tidal	999.8
MIS internal transmission cost	6.0
MIS - NEPOOL transmission cost	22.0
Total transmission cost	28.2
Net benefits from tidal (unadjusted)	971.1
Present worth of Energy, Gigawatthours	47,732
Levelized value of Energy, mills/kwh	20.3
Total capital cost of tidal plant	1,197
Annual charge @ 6.231%	47
Present worth in 1985 of annual charges (unadjusted over the period 1990-2045)	*1,040
At site cost of Energy, mills/kwh	21.8
Benefit/Cost ratio	971/1,040 = .93

1. All present worth values and costs are in $ million (June 1976 dollars); values are present worthed to mid-1985 at 5.5% discount rate over the review period (1980 - 2045).
2. Based on Intense Nuclear Scenario for the Maritime Integrated System.
3. The B/C ratio of 971/1040 or .93 was adjusted to 1.2 based on market sensitivity analysis on page 37-40 of the Reassessment.

*Cost of 250 MW storage installed in 1995 has been subtracted to give MIS gross value from tidal.

Source: Bay of Fundy Tidal Power Review Board,
Reassessment of Fundy Tidal Power
(Ottawa:Supply and Services, 1977), 35.

TABLE FIVE

Calendar of Environmentally - Significant Activities
Fundy Tidal Power, 1965-1980

1. Results of the Chignecto Canal Committee Report conveyed to Prime Minister Diefenbaker and Premier Robichaud (N. B.), January 1962.

2. Atlantic Tidal Power Programming Board, Feasibility of Tidal Power Development in The Bay of Fundy, October 1969. Contained 18 pages on "effects on other interests".

3. Jason Baxter, "Tidal Power Politics," The Mysterious East, October 1971.

4. Cabinet Directive issued for environmental assessment and review, December 1973.

5. Fundy Tidal Power Review Board, "Preliminary Reassessment of Feasibility of Tidal Power Development," September 1974.

6. Agreement signed for Reassessment study (Phase I), 3 December 1975.

7. Leonard and Partners, "Reports on The Socio-Economic Aspects of Fundy Tidal Power" completed between May 1976 and February 1977.

8. Acadia University Workshop, Fundy Tidal Power and The Environment, November 1976.

9. Beak Consultants, "Report on Environmental Aspects of Fundy Tidal Power", February 1977.

10. Chignecto Research Group, Mount Allison University, begins activity, April 1977.

11. R.I. McAllister, "Review of Socio-Economic Aspects of Fundy Tidal Power," August 1977.

12. Bay of Fundy Tidal Power Review Board, Reassessment of Fundy Tidal Power, November 1977.

13. Environmental Assessment and Review Panel formed, 22 December 1977.

14. Environmental Assessment Review Panel releases "Draft Environmental Guidelines," 10 March 1978.

15. Department of Fisheries and Oceans Canada, Bay of Fundy Environmental and Tidal Power Bibliography, November 1978.

16. Department of Municipal Affairs, Province of Nova Scotia, Social Impact Assessment Bibliography, January 1979.

17. Maritime Energy Corporation, "Draft Agreement," 16 February 1979.

18. Dissolution of the Maritime Energy Corporation, Fall 1979.

TABLE SIX

Occupational Analysis of Voters*
Joggins and Ragged Reef
1973

Unknown occupation (exclusively female ... housewives, unemployed, pensioners) - 145
Retired (some pensioners, some disability) - 75
Labourer (possibly includes above ground mine labor) - 70

Widows - 45	Cook - 1	Student - 1
Pensioners - 33	Watchman - 1	Mason - 1
Miners - 18	General Manager - 1	Commercial Traveller - 1
Home girls - 12	"Joggins" - 1	Truck Driver - 1
Clerks - 7	Post Master - 1	Secretary - 1
Teachers - 6	Priest - 1	Carpenter - 1
Merchants - 5	Hairdresser - 1	Boilermaker - 1
Lumbermen - 4	Surveyor - 1	Meat Cutter - 1
Fishermen - 4	Commissionaire - 1	
Housekeeper - 4	Telephone Operator - 1	Total 450+
Mechanics - 3	Barber - 1	
Inspectors - 2	Mail Courier - 1	
Office Clerks - 2	"Housewife" - 1	

*Based on municipal voter enumeration by experienced, life-long community resident. Subsequent voters lists do not carry occupations and list Christian names of wives (ie. "Harriet Doe", rather than Mrs. John Doe).

+Note, there are 300 persons in listed in the following categories: Blank, Retired, Widows, and Pensioners.

Source: Municipality of the County of Cumberland, Enumeration Records, 1973

TABLE SEVEN

Satisfaction with Select Community Services, Opportunities
Joggins, Nova Scotia

Data produced on 13/02/80.

Services, Opportunity	Response	
	Satisfied	Not Satisfied
Job Opportunities	27.8%	68.1%
Education for Children	84.7%	9.7%
Education for Adults	80.6%	13.9%
Medical Facilities	86.1%	13.9%
Police Service	84.7%	15.3%
Sports Facilities	29.2%	66.7%
Senior Citizens Activities	62.8%	18.1%
Parks, Playgrounds	26.4%	73.6%
Children's Activities	19.4%	77.8%
Teenagers' Activities	16.7%	80.6%
Grocery Shopping	66.7%	33.3%
Major Items Shopping	55.6%	44.4%

Source: Cumberland District Planning Commission,
1977 Cumberland Housing and Development Survey,
(Amherst, Nova Scotia: C.D.P.C., 1980).

TABLE EIGHT

Sources of Information on Fundy Tidal Power*
Cumberland County

Data produced on 13/02/80

Source	Response		
	Joggins	River Hebert	Cumberland County (other)
Local Papers	68.1%	77.7%	41.2%
Major Papers	68.1%	54.3%	50.0%
Radio/TV	84.7%	87.2%	69.7%
Discussions	68.1%	59.6%	21.8%
Row Total (Count)	72	94	2875

* This data is in response to the question "Please indicate if each of the following [media sources] is a significant source of information on Fundy Tidal Power?"

Source: Cumberland District Planning Commission,
1977 Cumberland Housing and Development Survey,
(Amherst, Nova Scotia: C.D.P.C., 1980).

TABLE NINE

Effect of Fundy Tidal Power
Cumberland County

Data produced on 18/02/80.

Response	Area Sampled		
	Joggins	River Hebert	Cumberland County (other)
Good/Improvement	93.1%	88.3%	65.1%
Bad/Worse Situation	1.4%	0.0%	2.1%
Make no difference	1.4%	0.0%	6.5%
No Answer	0.0%	0.0%	0.3%
Don't Know	4.2%	8.5%	17.5%
Refuse to Answer	0.0%	0.0%	0.2%
Never Heard of	0.0%	3.2%	8.4%
Row Total (Count)	72	94	2875

Source: Cumberland District Planning Commission, 1977 Cumberland Housing and Development Survey, (Amherst, Nova Scotia: C.D.P.C., 1980).

TABLE TEN

Attitudes Towards Possible Urbanization/Build Up
Cumberland County

Data produced on 13/02/80.

Response	Area Sampled		
	Joggins	River Hebert	Cumberland County (other)
Would not like	5.6%	5.3%	20.1%
Would not bother	93.1%	67.0%	15.9%
Not Applicable	0.0%	27.7%	62.5%
No Answer	0.0%	0.0%	0.5%
Don't Know	1.4%	0.0%	0.3%
Refuse to Answer	0.0%	0.0%	0.0%
Indifferent	0.0%	0.0%	0.7%
Row Total (Count)	72	94	2875

Source: Cumberland District Planning Commission,
1977 Cumberland Housing and Development Survey,
(Amherst, Nova Scotia: C.D.P.C., 1980).

TABLE ELEVEN

Joggins' Perceptions of Tidal Costs and Benefits*
August 1979

Costs	Benefits
Social	
Expropriation	Improve services
Worker influx	Create employment
Land speculation	Lead to industry
Boom-Bust (Economic Stress)	Improve transportation,
Social decay	Improve housing
Long-term population inrease	Develop community (sustain)
Tax increase	Improve recreation
Electrical rate increase	Repair wharf
Construction disruption	New citizens
Strain on services	General economic well-being
Strain on community fabric/decay	Reduce long-term energy rates
Business competition	Reduce reliance on off-shore (renewable)
Environmental	
Flooding of marshlands	Preferable to nuclear
Siltation	Not as dangerous, dirty as coal
Marine impacts (Fish)	Minimal flooding of marshland
Shorebirds	Minimal marine impact
Climate	
Alteration of waves, current	

*Based on interviews in community of Joggins and records of meetings.

TABLE TWELVE

Public Information and Participation Process
Fundy Tidal Power - Phase II

Stages of Process	Duration	Cost Estimates
Stage I - Preparation and Public Review of EIA Guidelines - Preparation of draft guidelines by Panel (Jan. 1978) - Distribution of information kit, draft guidelines (Mar. 1978) - Public meetings in Maritimes and elsewhere, written submissions (late April) - Panel review of public input - Decision and publication of official guidelines to proponent (May)	3-4 mos	$ 17,100
Stage II - Environmental Impact Assessment, Statement Preparation: - "Low-intensity public information exercise with periodic tick-overs" - Review Panel to show flag once in awhile to limit local spadework during EIS review (Stage III) - Summary press releases every six months on "study progress", but not results or findings. - Carefully coordinated release of proponent & environmental information.	2 years	$ 0
Stage III - Public Review of Environmental Impact Statement: General concepts - large impact area with significant population - 6 major centers, numerous communities - considerable public interest in FTP environmental impacts. - much EIA material and great distribution task	6-9 mos.	$150,000

*Derived from NB Department of Environment corresondence to Mr. F.G. Hurtubise, Chairman of the Federal Environmental Assessment and Review Panel of 22 September and 30 December, 1977 and FEARO information kits of 10 March and April 1978.

FIGURES

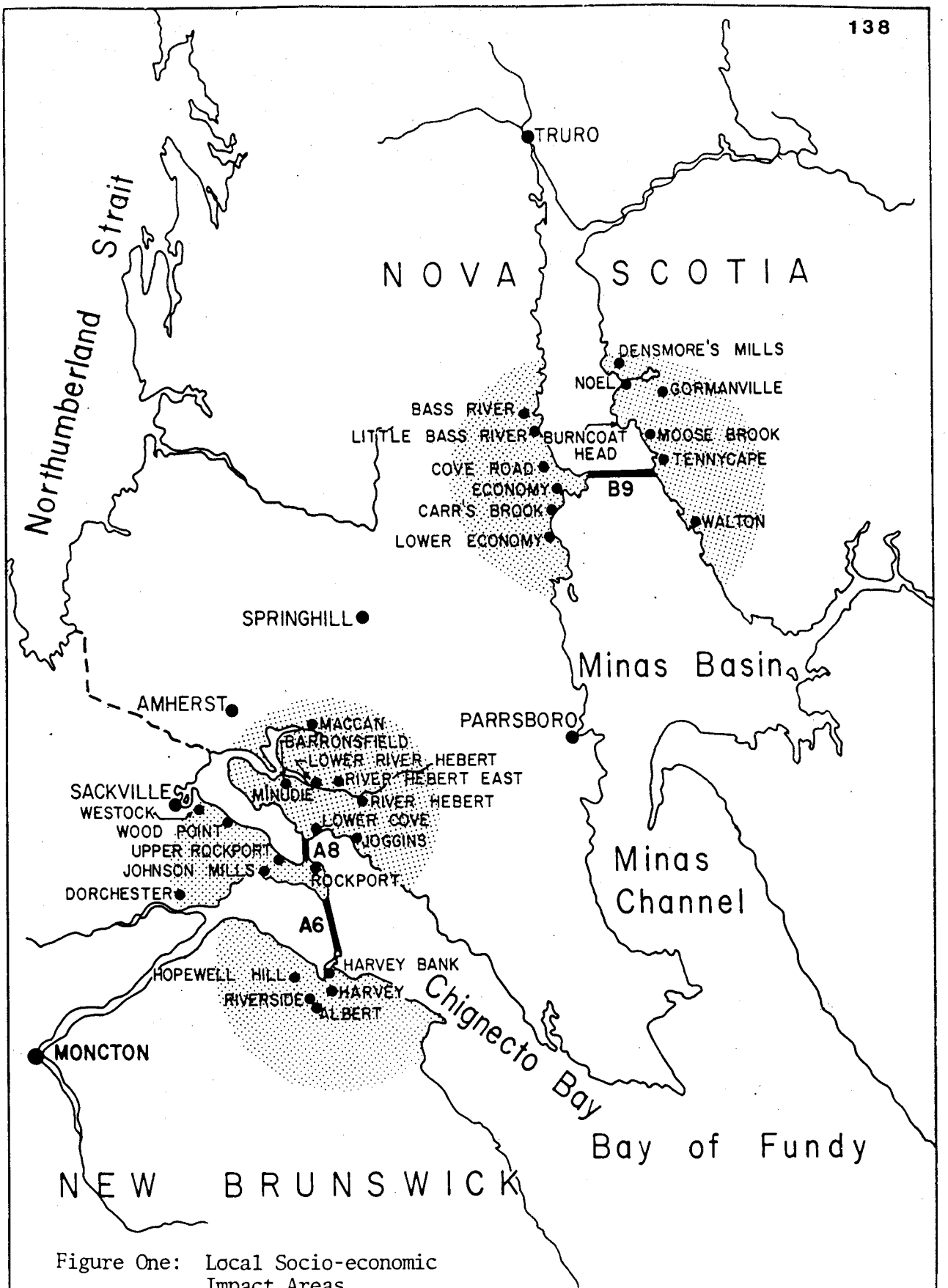


Figure One: Local Socio-economic Impact Areas

km 10 5 0 10 20 30 40 50 km

Source: Bay of Fundy Tidal Power Review Board, Reassessment of Fundy Tidal Power, (Ottawa: Supply and Services, 1977), p. 384.

BAY OF FUNDY TIDAL POWER REVIEW BOARD
NEW BRUNSWICK - CANADA - NOVA SCOTIA

LOCAL SOCIO-ECONOMIC IMPACT AREAS

NOVEMBER 1977 | PLATE NO 15-3

Figure Two
Aerial Photograph, Joggins, Nova Scotia
Maritime Resource Management Service, 1975
Scale: 1:10,000 (1" = 833')

FIGURE THREE

PRODUCTION — JOGGINS MINES

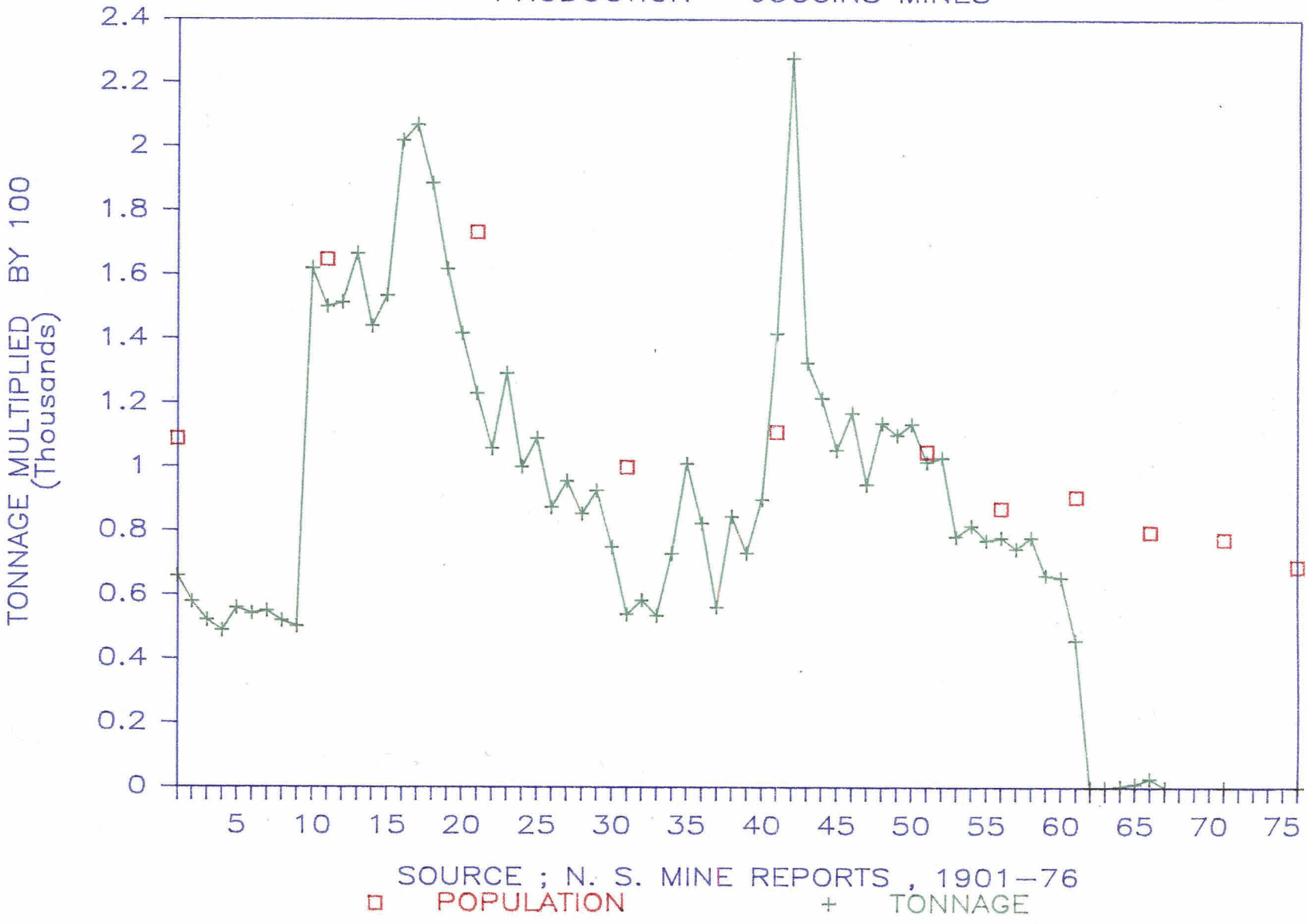


FIGURE FOUR

Map of Chignecto Canal, 1960

from

A Report to The Chignecto Canal Committee

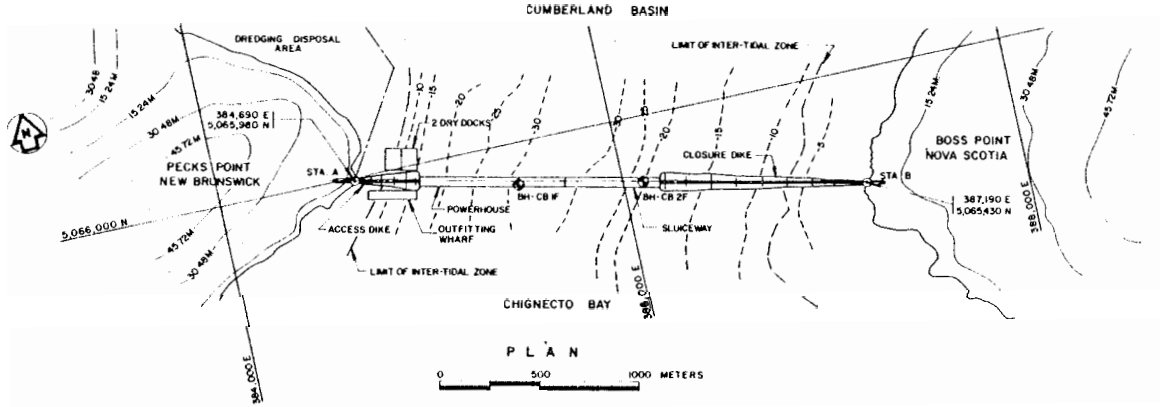
by

Economic Research Corportion Limited

April 1960

Legend:
The Chignecto Canal. The dotted line indicates potential shipping routes through the Chignecto Canal linking the St. Lawrence and Northumberland Strait areas with the Bay of Fundy and the U.S. Atlantic coast. Inset, three possible variants of the Canal are shown: 1. From Cumberland Basin to Baie Verte, along the Missaquash River.
2. A waterway along the course of the Memramcook River and a canal to Shediac Bay.
3. A waterway along the course of the Petitcodiac River and a canal to Shediac Bay. The dams for tidal power projects which which may be developed in future are indicated in red.

THE CHIGNECTO CANAL



LEGEND

- BH-CB 1F = BOREHOLE LOCATION
- 30 48 = TOPOGRAPHIC CONTOURS IN METERS
- -25M- = BATHYMETRIC CONTOURS IN METERS
- STA A = SURVEY CONTROL POINT

NOTES

1. ELEVATIONS ARE REFERED TO GEODETIC SURVEY OF CANADA DATUM
2. SOUNDINGS ARE GIVEN IN METERS AND ARE RELATIVE TO G.S.C.D.
3. HWL REFERS TO HIGH HIGH WATER LARGE TIDE PLUS 1.22M.
4. L.W.L. REFERS TO LOW LOW WATER LARGE TIDE MINUS .76M.
5. COORDINATES ARE RELATED TO THE TEN THOUSAND METER UNIVERSAL TRANSVERSE MERCATOR GRID REF AMHERST 21 H
6. SEA-BED CONTOURS HAVE BEEN INTERPOLATED FROM GEOPHYSICAL SURVEY (1977)
7. POWERHOUSE - WIDTH OF UNIT AS SHOWN
   - TURBINE DIAMETER 7.5 M
   SLUICEWAY - WIDTH OF SLUICE AS SHOWN
   - SLUICEWAY GATE 12.2 M x 12.2 M
   BOTH POWERHOUSES AND SLUICEWAYS SHALL BE CONSTRUCTED IN MODULES OF TWO UNITS. ONE SERVICE BAY SHALL BE PROVIDED FOR EVERY 16 POWERHOUSE UNITS
8. INSTALLED CAPACITY IS NUMBER OF UNITS TIMES 34 MW
9. THE SERVICE BAY IS INCORPORATED WITH TWO GENERATING UNITS IN A POWERHOUSE MODULE
10. THE LENGTH OF DIKE REQUIRED FOR THE DRY DOCK (ACCESS DIKE) SHALL BE BUILT BY END DUMPING. THE BALANCE OF THE DIKE SECTION (CLOSURE DIKE) SHALL BE CONSTRUCTED IN HORIZONTAL LIFT FROM THE SEA-BED USING MARINE TECHNIQUES
11. ALL THE FOUNDATION INFORMATION ON SITE A8 IS BASED ON THE RESULT OF INVESTIGATIONS CARRIED OUT DURING PHASE 1 SUPPLEMENTAL STUDY
12. SUNFICIAL DEPOSITS INCLUDING CLAYED SILT AND SILTY CLAY, DO NOT PROVIDE ADEQUATE FOUNDATION AND MUST BE REMOVED

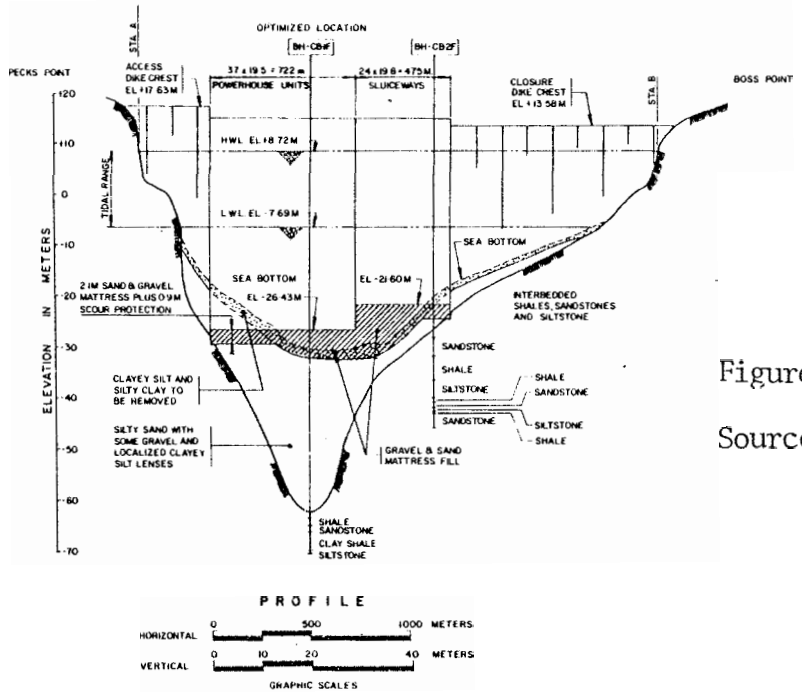


Figure 5: Plan and Profile of Cumberland Basin Barrage

Source: Bay of Fundy Tidal Power Review Board, Reassessment of Fundy Tidal Power, (Ottawa: Supply and Services, 1977), p. 100.

BAY OF FUNDY TIDAL POWER REVIEW BOARD NEW BRUNSWICK - CANADA - NOVA SCOTIA	
SITE A8 - CUMBERLAND BASIN PECKS POINT TO BOSS POINT STAGE 2 LAYOUT SINGLE EFFECT	
NOVEMBER 1977	PLATE NO 5 - 1

PROGRAM ASPECTS		DESCRIPTION OF WORK	Budget x 1,000
I	DATA BASE	1) Site Geology & foundation explorations	1,700.
		2) Identification of material sources & proving-up borrow areas and quarries	150.
		3) Topographic and bathymetric surveys - incl. map preparation	250.
		4) Wave measurements	50.
		5) Current measurements	50.
		6) Ice surveys	50.
		7) Tidal measurements	100.
		8) Sedimentological data surveys	400.
		9) Corrosion testing of materials	25.
II	REGIME MODELLING	1) Development and testing of detailed region model of Cumberland Basin	60.
		2) Development and testing of storm surge model	60.
		3) Development and testing of wind-driven circulation model	10.
		4) Feasibility study and design of hydraulic model facility	250.
		5) Hydraulic model - construction of facilities	2,600.
		6) Design of test program, modelling and 1 year of testing	1,000.
III	ENGINEERING DESIGN	1) Preliminary feasibility studies of pumped storage sites to meet system capacity requirements	500.
		2) Turbo generator units - development design	500.
		3) Feasibility study of off-site caisson fabrication facility	250.
		4) Engineering design of Site A8	7,000.
IV	SYSTEM DESIGN	1) Review of demand, markets, generation alternatives and financing	200.
		2) Final selection studies - mode of operation incl. pumped storage options	100.
		3) Institutional framework	100.
		4) Detailed financing studies	100.
		5) System implications of sequence development of tidal power	100.
		6) Final optimization analyses and system stability studies	500.
		7) Operation and control design	500.
V	SOCIO-ECONOMIC & ENVIRONMENTAL STUDIES	1) Compilation and review of existing information	40.
		2) Physical oceanographic investigations	190.
		3) Surface water studies	20.
		4) Groundwater studies	10.
		5) Bird habitats and utilization	50.
		6) Fish passage and habitat	110.
		7) Agriculture	20.
		8) Navigation	10.
		9) Borrow areas	30.
		10) Specialist advice	20.
		11) Preparation of E.I.S.	500.
		12) Misc. Socio-Economic studies	500.
VI	SUPP. STUDIES OF OTHER SITES	1) Supplemental work on other sites for tidal power development	1,000.
			19,005.
		Contingency 20%	3,800.
			22,805.
		Project Management 20%	4,560.
			27,365.

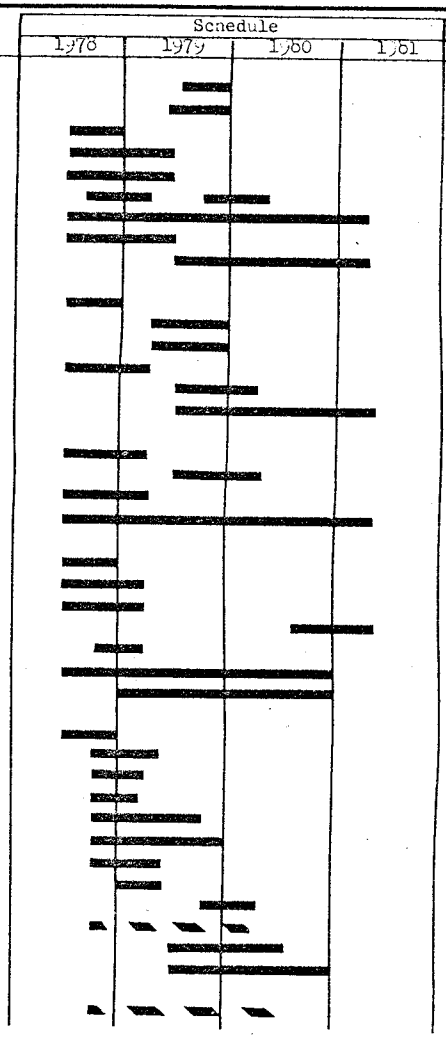


Figure Six: Schedule, Pre-Investment Design, A-8

Source: Bay of Fundy Tidal Power Review Board, Reassessment of Fundy Tidal Power, (Ottawa: Supply and Services, 1977), p. 415.

BAY OF FUNDY TIDAL POWER REVIEW BOARD
NEW BRUNSWICK - CANADA - NOVA SCOTIA
PHASE 2 - PRE INVESTMENT DESIGN FOR THE DEVELOPMENT OF SITE A8
NOVEMBER 1977 | PLATE NO 18 - 2

APPENDIX: DOCUMENTS, BOARD OF TRADE

May 17, 1962

Mr. Robert Coates, M.P.,
Amherst, N. S.

Dear Sir:

The urgenty of our economic situation here in the village of Joggins seems to be forgotten now that the party is busy with preparations for the coming election.

The plight of the coal mining industry in Cape Breton appears to be getting a large share of publicity and efforts are being made to keep the industry alive there. If percentage of unemployment per capita were given any thought, it would be quite obvious that the plight of the coal mines in Cape Breton is certainly brighter than we have here. Can you name a mining community anywhere in the province that has a larger percentage of industrial closure than our village? With our one mine closed the industrial closure is 100 per cent.

We believe, as Canadian citizens, we deserve as much attention as residents of other communities, and therefore something should be done to relieve the situation here. In Springhill, for instance several small industries were put into operation, and we also know that these industries were not due wholly to the efforts of the citizens of that town.

Being a small village with not too many influential and moneyed people we have not the know how or capital to set up industries, and therefore the Government should use its influence and persuasive powers to do something for us. This village has a potential man power of 150 who are either on Unemployment Insurance or County relief. The majority of those on Unemployment are now facing the fact that their last U.I. cheques will soon be issued, and County relief is the next step. It is not a pleasant outlook.

We have had the Government drill here for the past few weeks but have been told by the Minister of Mines that it is now needed in Springhill and it has been moved to that town. We fail to see their need is greater than ours. There still remain seams of coal here that could be tested.

Our Government maintained wharf is badly in need of repairs, and even this could relieve our unemployment problem somewhat, but to date nothing has been planned or put into effect except the grading of the approach to the wharf, a contract which was let to a contractor outside our village using outside machinery and man power.

In our last communication from you, you stated that as soon as you returned from Ottawa you would contact us and set up a meeting. We are still waiting, despite the urgency of our situation. If, in the immediate future you can find a date on which you could meet our executive we could more fully explain the gravity of the unemployment problem here in Joggins.

Yours truly,

T. LeBlanc, President

EVERYONE WELCOME
PLEASE ATTEND

CITIZENS MEETING

AREA MEDICAL CENTRE ANNUAL MEETING

THIS IS YOUR BUSINESS

— AGENDA —

MINUTES
FINANCIAL REPORT
ELECTION OF DIRECTORS
GENERAL DISCUSSION

WED. JANUARY 19th

TIME - 8:00 pm

RIVER HEBERT DISTRICT HIGH SCHOOL

- MUSIC ROOM -

— SIGNED —
AREA MEDICAL COMMITTEE

GR 1965

NOVA SCOTIA

THE PREMIER
HALIFAX

March 4, 1963

Dear Mr. LeBlanc:

Following the conference Mr. Pyke and I had with you and your associates from Joggins and River Hebert we have given further consideration to your request that the Chignecto Game Sanctuary and related crown lands be considered as a second National Park in the province.

We have had discussions with officials in our Department of Lands and Forests. The lands in question are considered to be excellent growing lands for timber; and while the timber is at present mostly immature because of disastrous fires, these lands are considered to be potentially very valuable as a timber resource, much more so than other lands being considered for a national park. You will bear in mind that once land is used for national park purposes it is no longer valuable for lumber operations. Our Department of Lands and Forests would have grave doubts about the wisdom of removing the land in question from future lumber operations.

As I mentioned to you also we must try to meet the wishes of a fair preponderance of people in Nova Scotia as to the general location of the second national park. We recognize of course that there will always be substantial differences of opinion about this but there does seem to be a general opinion that the park should be far enough within the province to pull visitors well within Nova Scotia.

I thought therefore that following discussions we have had since your visit to Halifax I should write you and advise you that it now seems clear that your request cannot be met in this instance.

I wish to assure you on behalf of my colleagues in the government that we are well aware of the problems you have been having in your area. We are sorry that your wishes cannot be met in this instance but we will certainly co-operate fully with you in endeavours to improve the economy of your area.

Yours sincerely,

R. L. Stanfield

Mr. T. LeBlanc
President, Board of Trade
Joggins, N. S.

IRVING OIL COMPANY LIMITED
SAINT JOHN, N.B.
CANADA

A. L. IRVING
EXEC. VICE PRESIDENT

February 27th, 1964

Dear George:

Thank you for your recent letter, and also I wish to acknowledge your other letters which you have addressed to my father.

At present we do not know of any immediate use to which we could put the wharf facilities at Joggins. However, we very much appreciate your interest in trying to locate industry for your area, and you can rest assured that if at any time we know of any industry or have any suggestions, we shall be pleased to get in touch with you.

I have asked our District Manager, Mr. Arnold Payson, to call on you as soon as he recuperates from his present illness.

I do remember you when you were in Acadia. I will make it a point to call in and see you the next time I am in your area. If you are ever in Saint John, please come in to see me.

Best personal regards,

Very truly yours,

Arthur L. Irving

Mr. George Knight,
Joggins, N.S.

CUMBERLAND COUNTY LIBERAL ASSOCIATION

AMHERST, NOVA SCOTIA

Resolution passed unanimously by the executive of the Cumberland County Liberal Association:

Whereas Cumberland County is designated as a depressed area;

And whereas Cumberland County has been one of the foremost coal producing counties of Nova Scotia and has at the present time an operating thermal power plant;

And whereas Cumberland County has not been favored with any new major industries for some years;

And whereas more particularly the Joggins - River Hebert area is one of the most depressed areas of the county and is readily accessible by land and water;

Be it resolved that the Cumberland County Liberal Association urge that the Government of Nova Scotia urge the Government of Canada to give their utmost consideration to the locating of the next heavy water plant in the Joggins - River Hebert area of Cumberland County.

Dated at Amherst in the County of Cumberland and the Province of Nova Scotia this [illegible] day of March, A.D. 1966.

President

Secretary

CN Telecommunications

AMHERST, N. S.
TEL. 8738

XDXX-076 MOA280 MO

local time · heure locale

1964 MAY 6 PM 2 03

GA192 12/11 HU OTTAWA ONT 6 1217P EDT

FRED COMEAU, CHAIRMAN OF WHARF COMMITTEE=

JOGGINS BOARD OF TRADE JOGGINS NS=

REYRTEL AM CHECKING INTO THIS MATTER IMMEDIATELY. WILL ADVISE YOU SOONEST=

ALLAN J MACEACHEN MINISTER OF LABOUR=.

...hone No........ Time

...pts to phone ....

...er Mail ✓File

J. R. White, general manager · directeur général, Toronto 6122b

MINISTRE DE LA
MAIN-D'OEUVRE ET DE L'IMMIGRATION

CANADA

MINISTER OF
MANPOWER AND IMMIGRATION

Ottawa 2, April 22, 1970

Dear Father Robertson:

I refer to my Special Assistant's letter of March 16, 1970.

My colleague, the Minister of Public Works, has informed me that recent investigations by his officials show that the wharf at Joggins is in very poor condition. They also found that there was insufficient justification to warrant the expenditure necessary to put the structure in serviceable condition.

I am also informed that, on February 16, 1970, the Department declared the wharf surplus, through Crown Assets Disposal Corporation.

I regret that I am unable to be of greater assistance.

With warmest regards,

Yours sincerely,

Allan J. MacEachen

Reverend K. L. Robertson,
Corresponding Secretary,
Joggins and District Board of Trade,
Box 35, River Hebert, Nova Scotia

LIST OF REFERENCES

Chapter I

1. Bay of Fundy Tidal Power Review Board, The Tides of Fundy: Renewable Energy Resources in the Maritimes (Ottawa: Supply and Services Canada, 1977), 2.

2. Duncan Fraser, "Planned Fundy Tidal Power Project in 1915: Finances Frustrated Acadia Scheme," The Halifax Chronicle-Herald, 23 January 1971.

3. J.D. Conlon, "General Remarks on Tidal Power" (Paper delivered at a meeting of the Canadian Electrical Association, Hydraulic Power Section, Halifax, N.S., 20 January 1961), 1.

4. Maritime Energy Corporation, "Draft Memorandum of Understanding," Halifax: Governments of New Brunswick, Nova Scotia, Prince Edward Island, and Canada, 16 February 1979.

5. Jerry Delli Priscoli in Institute of Environmental Research Inc., "Current Issues and Future Directions in Public Participation: An Analysis Based on a Review of Literature," Report no. 81533, Prepared for the Community Relations Department, Ontario Hydro (Toronto: Ontario Hydro, October 1981), 39.

6. I am indebted here to my external examiner, Professor J.W. Wilson, who introduced me to a source which supports this first premise - Bernard R. Blishen et al., Socio-Economic Impact Model for Northern Development (Ottawa: Policy, Research and Evaluation Group, Research Branch, Indian and Northern Affairs Canada, October 1979), 5.

7. See Roy T. Bowles, Social Impact Assessment in Small Communities: An Integrative Review of Selected Literature (Toronto: Butterworths, 1981), 11,34. To minimize the effect of reflexivity on predictive impact assessments, Bowles, after Johnson and Burdge, proposes a technique known as comparitive diachronic analysis. Through the use of such a technique, communities and projects of comparable scale to the study community are used to forecast project impacts in the study community prior to construction.

Chapter II

1. Harry Thurston, Barefaced Stone (Fredericton: Fiddlehead Poetry Books, 1980), 34. Poem used with permission of the author, a former resident of River Hebert, N.S.

2. Ethel Fife, unpublished notes on the history of Joggins.

3. Charlene LeBlanc, unpublished notes on the history of Joggins used in the local school district. Pagination appears occasionally in the text indicating previous publication of material. The General Mining Company of London was granted a monopoly right to all Nova Scotia coal seams in 1847. The development rights would have reverted to the Province if forfeited by the General Mining Company. This right complicated subsequent land-holdings, titles, and transferrals in Joggins.

4. Town of Joggins, Minutes of Meetings, 1949.

5. The four stages of community development which Rex Lucas documents in Minetown, Milltown, Railtown are: construction, recruitment of citizens, transition, and maturity. These stages do not strictly apply to Joggins because of the age of the community and because of the availability of rich farmland, timber, fish, and minerals other than coal.

6. Especially the records of the Joggins and District Board of Trade and its successors, 1961-1973, and Town of Joggins, Minutes of Meetings, 1949.

7. Amos Seaman's influence over his Acadian tenants in Joggins, Minudie, Lower Cove, and Ragged Reef was influenced by: (a) extensive land grants from Territorial Governor J.W.F. Desbarres (a total of 7000 acres), (b) the relative isolation of the grants, (c) the landlord/tenant relationship, and (d) the diversity of his economic interests. Vincent Durant, "Amos Seaman: The Grindstone King," The Atlantic Advocate, December 1980, 74-78. Approximately 125 men were employed at peak production in Seaman's Lower Cove quarries. Additional crews operated at the Ragged Reef Quarry, two miles west of Joggins, and the Apple River Quarry, eight miles west of Joggins. Altogether, 15,000 tons of grindstone were exported to Boston each year. Boston merchants in turn exported the grindstone to European markets. James Snowden, "The Cumberland Basin Grindstone Industry" (B.A. graduating essay, Mount Allison University, 1972).

8. Charlene LeBlanc, unpublished notes.

9. From a clipping in a Joggins scrapbook.

10. Ibid.

11. Charlene LeBlanc, unpublished notes, and an interview with a Joggins nonagenarien. According to these sources, skilled positions were advertised abroad. A folk song which commented on the immigration was recited in June 1979 by a former miner and went as follows:

    Belgians and Bohunks, Italians 'n Jews,
    They all came to Joggins when they heard the great news.
    With an old pair of pit shoes

And an old axe to grind,
All came to Joggins to work in the mines.

12. Charlene LeBlanc, unpublished notes. The Saint John merchants developed the "Old Joggins" No. 1 on a seam 4 1/2 feet high and the 3 1/2 foot Hard Scrabble seam.
13. Ibid.

14. A. Andrew Merrilees, Member, Upper Canada Railway Society, "A History of the Maritime Coal, Railway, and Power Company, Ltd." (Undated paper found in a Joggins scrapbook. Likely written in 1961 at the close of railroad.)

15. Ibid.

16. Charlene LeBlanc, unpublished notes.

17. Interview with elderly ex-miner, July 1979.

18. Ibid.

19. Interview, ex-miner; Charlene LeBlanc, unpublished notes.

20. Despite hearsay accounts of a population 3000 residents in 1906, it is likely that the population of Joggins was closer to the 1,648 persons reported by the Dominion Bureau of Statistics in 1911. The school enrollment figure was provided by a retired school teacher. LeBlanc's notes indicate that a world congress of geologists gathered at the fossil cliffs in 1913.

21. Personal observation from interviews as well as newspaper accounts by Joggins correspondents, ie. "Joggins is the only incorporated town along the Bay" in "Fundy Districts Noted for Varied Production," The Amherst Sentinel, 1943.

22. Interview with County Councillor, 13 August 1979.

23. Ibid.

24. Interview, Mine Manager's Widow, 8 September 1979.

25. Interview, retired school teacher and local historian, 12 June 1979.

26. Interview, retired coal-miner, 24 July 1979.

27. Interview, former Deputy Mayor and County Councillor, 10 July 1979. Also interviews with present County Councillor, 13 August 1979 and 21 October 1979. The Municipality of the County of Cumberland was was formed in 1879; River Hebert joined in 1932 and Joggins joined in 1950. The Council has eleven, four-year term, elected positions, each of which represents the unincorporated areas and villages of Cumberland County. Municipality of the County of Cumberland, Annual

Report, 1979.

28. For example, the Cumberland District Planning Commission, which was founded in 1969, the County Committee for Social Services, and the Municipal School Board played a particularly important role in Joggins affairs.

29. Vickery held the offices of Notary Public, Commissioner of Oaths, County Councillor, and mine accountant.

30. Nova Scotia Department of Mines and Energy, Mines Report, 1942.

31. Taylor and Hedley are remembered as respected miners and community workers. Taylor, a man who was "always in his pit-clothes" was quick to personally inspect hazardous underground conditions. His widow stated to me in 1979 that her husband had forseen the displacement of coal by gasoline, oil, and electricity. Knowing that both markets and suppies were dwindling, he discouraged younger men from working in the pits and sought alternate industry for Joggins. His salesmen travelled from Yarmouth to Quebec City in search of contracts for Joggins Coal.

32. Mines Reports, 1950-1959.

33. The "immigrants" were affected greatly by the mine closing and either left Joggins in great numbers or remained in abject poverty. One bachelor miner, who immigrated from Britain in 1912 to work on the cutting machines, found himself stranded in Joggins without family or money. A generous, fellow miner presently shelters him in the cold winter months; during the summer months he tents, at age 93.

34. According to a report issued by the County Welfare Office in 1963, River Hebert had even more welfare families than Joggins, 28 compared with 21, and the small farming community of Maccan had 8 welfare families. At a meeting with Premier Stanfield on 12 February 1963, the Board of Trade reported that only 100 people out of a population 700 did not collect Unemployment Insurance benefits in Joggins. A Board of Trade document dated fall 1962 cites 43 area families on County relief, and predicts that an additional 44 area families would be on relief by winter.

35. Dominion Bureau of Statistics, Census of Canada, 1901-1976.

36. Ibid.

37. These comments are based on personal observation, as well as mappings of the community by residents which listed the "nicest" homes, as well as the homes of the "most influential." One resident who had moved less than 1/4 mile from a small house on Main Street to a more commodious and attractive house on a side street lamented the move because of the "isolation" of the newer house, its relative

length of occupancy, and also, I believe, a perceived loss of "class" or status. This phenomenon may be attributed to the mining company's practice of locating their barracks or workers' cottages along side streets.

38. Patterns of kinship tended to reinforce the stratification of the community, although from my observation there were marriages and consanguineal relationships which defied class boundaries. In such cases, the lower class (usually miners') families ascribed importance to their upper class "relatedness;" the converse was rarely true.

39. Harry Flemming, "Railway enthusiasts gather to pay homage," The Amherst Daily News, 22 September 1961.

40. Correspondence, Joggins Board of Trade, 1961.

41. Canadian Press, "UMW Demands Tax on Oil: Brief Says Coal Industry Suffers Serious Setback Due to Production Cutbacks," The Amherst Daily News, 13 January 1959.

42. Joseph Howe quoted in Hans K. Larsen, "Confederation, Was It Worth It? A Historical Perspective," The Fredericton Daily Gleaner, 15 March 1979.

43. Cumberland County MP Robert Coates maintains that free trade might have ensured continued economic viability and diversity in northeastern Nova Scotia. The Atlantic Development Council notes that 150,000 Maritimers left the region between 1920 and 1925. In the same period, manufacturing jobs in key Maritime centres fell from 25,000 to 14,000. Atlantic Development Council, The Atlantic Region of Canada: Economic Development Strategy for the Eighties (Ottawa: Supply and Services Canada, November 1978).

44. The expression "take off" is from W.W. Rostow, The Stages of Economic Growth (Cambridge: University Press, 1966), 26, and represents the growth theory perspective. For a dependency theory perspective, see David Flynn, "Regional Economic Growth or Regional Underdevelopment: The Construction of Nuclear Generating Stations" (Paper delivered at meeting the Atlantic Association of Sociologists and Anthropologists, St. John's, Newfoundland, 10-12 March 1978).

45. This reference alludes to Amos "King" Seaman as well as to the Maritime Coal, Railway and Power Company "empire."

46. The Joggins Volunteer Fire Department (which operated without external funding until it received modest equipment subsidies in the 1960s and 1970s) was supported through a community service tax of $3.00/household in 1979. In that year, the Volunteer Fire Department's account contained $8,000 which was raised through community fairs, bingo, dances, catering, and LIP grants. The Department resists continual municipal pressure to amalgamate with

the nearby River Hebert Fire Department which Jogginers perceive to have a less effective method and philosophy of fire-fighting.

47. Interview, 29 August 1979. The Chief speculated, from his construction experience at the Glace Bay Heavy Water Plant, that "Fundy would give his department a big boost" through contracted services to the developer.

48. An "Unsightly Premises Report" issued by the County in 1967 listed and depicted ten properties in Joggins which were destroyed under the provincial Health legislation.

49. The Mine Consultative Committee was founded by Rev. R. M. Miller and Ron Beaton, the River Hebert Mine Manager, in 1968 and in anticipation of the closing of the Cochrane mine in River Hebert. The Life Skills Project was founded by the Mine Consultative Committee and used staff from Frontier College to assist in "alternate employment information" and training. The River Hebert School District Recreation Committee was formed in 1973 with the assistance of Tim Ardenne, a former Frontier College staff member, and eventually became a civic service group which installed street signs, etc. The River Hebert-Joggins Community Schools' Committee was sponsored by N.S. Community Schools from 1976 to the completion of the fieldwork for this study in 1979. Scientist/writer Harry Thurston and community organizer Edna Boon founded this group.

50. Mrs. Lillian Taylor, the mine manager's widow; the present County Councillor, Basil Brine; and leaders in the Volunteer Fire Department attended.

51. At the inaugural meeting, Mr. Dakin of the Amherst Board of Trade spoke extensively on the "Chignecto Complex with canal, power plant, and transportation linkage."

52. The Board's records were salvaged from a rotting garage in River Hebert by the writer and upon completion of the thesis will be permanently housed with the records of the Joggins Citizens' Committee. Appended are several examples of Board correspondence, including a telegram from the Hon. Allan MacEachen, dated 6 May 1964. Other contacts included the Hon. Robert Stanfield, Premier of Nova Scotia (and his successors); Robert Coates, Member of Parliament for Cumberland County; industrialists K.C. and Arthur Irving; the presidents of CIL and Sifto Salt; the Area Development Council; and sundry politicians.

53. Operated by two Joggins men, the mine was grossly under capitalized and closed in 1965 with a peak employment of 18 men and a peak production of 2,786 tons/year. The Board's initial lobby to Hon. D.A. Smith, N.S. Minister of Mines, maintained that the coal supply contract for the Maccan Power Plant was only "on loan" to the government-operated mine at River Hebert. In its correspondence with Smith, the Board cited assurances from the Cumberland MLA, Hon.

Stephen Pyke (formerly Minister of Labour, then Minister of Highways), that the contract would "always remain the property of a Joggins-operated mine as long as a mine could be operated." Board to Smith, 10 September 1962.

54. A study by the Board listed the community's phones by number of parties, commercial, and domestic categories. Of 119 Joggins phones, only 7 were "one party," 29 phones were "four party," and 83 telephones were "multi-party." Joggins Board of Trade, "A Preliminary Study of the Telephone System," April 1964.

55. Joggins Board of Trade, "Brief to the Hon. W.S.K. Jones, Minister of Trade and Industry on the Matter of a Second Heavy Water Plant in Nova Scotia," 24 February 1966.

56. Ibid.

57. The 1967 and 1968 year-end reports reflect the introverted interests of a group primarily concerned with public RCMP statements about extreme vandalism in the area. The Board noted "outsiders should not be questioning the area as a fit place to live."

58. Joggins' County Councillor Basil Brine was recording secretary. A full slate of officers was installed on 9 February 1970. Membership fees were $3.00/annum and attendance ranged from 19-25 persons.

59. Joggins and District Board of Trade, Minutes of Meeting, 14 April 1971.

60. The River Hebert Village Commission, perturbed by the Board's interest in sewer service, used the office of the County Councillor to limit the Board in such "civic matters."

61. One Joggins woman, who held "production awards" from her employer, Northern Telecom, told me that she performed 1800 connections per hour on one machine in the factory. She confided to one community resident that "her nerves were going." A surprising number of men stayed at home while their wives carpooled to Amherst daily. Factors such as: lack of education and skills (a carry-over from mining days), age, alcoholism, and dislike for the factory environment contributed this situation.

62. Interview, J.G. Lidster, Plant Manager for Northern Telecom, 16 August 1979.

63. One proposal writer listed $100,000 in grants which he had procured through Opportunities for Youth, Local Initiatives Programs, tourist grants under the provincial "Little Red Schoolhouse Program," and the Department of Recreation. Councillor Brine itemized $3-$4 million expended in his district from 1970-1979, including $600,000 for a seniors' complex in Joggins, $1,200,000 for the seniors' complex in River Hebert, $600,000 received from the Rural and Native Housing Rehabilitation Program for 29 welfare homes in Joggins-River

Hebert, and $60,000 from the County for the River Hebert sewage system. (These amounts do not include an expenditure of $98,000 by the federal and provincial governments for a new wharf).

64. During the summer of 1979, Joggins grant employees received $2.75/hr. and complained bitterly about the meaninglessness of the work, poor pay, and inadequate supervision. Both grant workers and recipients of "welfare homes" were stigmatized severely by "the society class," despite the many other forms of government aid which were distributed to the individuals and institutions belonging to this "class."

65. The postmaster, an authority on community cash flow, verified the statement and described various government sources of income available to the community such as pensions, supplements, disability allowances, etc. Cumberland MLA Guy Brown, "the first Liberal elected for two terms since Confederation," vigorously sought grants for the Joggins area since his election in 1974 and declares that River Hebert and Joggins "have improved 5000%." In addition to various other projects, he mentioned over $4.5 million acquired for a shore road project.

66. By comparison, River Hebert installed a sewer system in 1975. The initial impetus for a sewer system in River Hebert came from an informal development group, not the Village Commission. According to the Annual Report of the Municipality of Cumberland, published in 1979, a CMHC financial assistance program had expired before Joggins submitted its application. According to a Citizens' Committee representative, sewer service would have added $125 per annum to the local tax rate.

67. Cumberland District Planning Commission, "Cumberland County: 1977 Housing and Development Survey: Report 12: An Overview of Housing Conditions in County Polling District Five (Including River Hebert)," December 1980. One interviewee offered the unsolicited statement, "Some of us are living in shithouses."

Chapter III

1. Bay of Fundy Tidal Power Review Board, The Tides of Fundy: Renewable Energy Resources in the Maritimes (Ottawa: Supply and Services, 1977), cover.

2. Ibid., 2.

3. Ibid.

4. Ibid.

5. Duncan Fraser, "Planned Fundy Tidal Power Project in 1915: Finances Frustrated Acadia Scheme," The Halifax Chronicle-Herald, 23 January 1971.

6. An excellent example is documented in a letter dated 31 July 1957 from J.D. Conlon of the Maritime Marshlands Rehabilitation Board to the Chief Engineer at the Nova Scotia Power Corporation. In this letter Conlon states that the planned Annapolis River Dam would primarily protect agricultural marshlands and serve as a causeway, although it could also work for tidal power generation.

7. For example, the aforementioned letter of 31 July 1957 ends with the statement, "It is requested that this matter be kept confidential."

8. One employee of the Maritime Marshlands Rehabilitation Administration lived in Joggins, but could not divulge information on the project due to strong sanctions from his employer. Later, when the sanctions were lifted, he became an advocate of the project.

9. By the completion of the Annapolis River Power Dam Report in 1957, a new horizontal axis turbine-generator with a bulb shaft and adjustable blades had already been developed in Europe for use at La Rance. This innovation is referenced in correspondence and in the 1957 report.

10. Editorial, "The Report to The Prime Minister," The Atlantic Advocate, April 1962, 14.

11. It should be noted that the Committee was multi-partisan. The Federal Minister of Finance and former New Brunswick Premier, Hugh John Flemming, chaired the Committee.

12. Editorial, "Report to Prime Minister," 14.

13. Ibid.

14. Economic Research Corporation, The Chignecto Canal. Report prepared for the Chignecto Canal Committee (Montreal: Economic Research Corporation, 1960), 1.

15. Ibid.

16. As early as 1950 the Chignecto Canal Committee had developed an extensive roster of municipalities and civic organizations from throughout the Maritimes which supported the project. As a result of this network, which remained active until the mid- 1960s, the Committee published a tract entitled The Voice of the Maritimes: Calling for the Construction of the Chignecto Canal, (1686-1950). The tract contained the names of supporters and several testimonials.

17. According to B. Malinowski, myth serves as a "charter" for social action, "investing action of the present with the sacrality of historical precedent." Anthony P. Cohen, The Management of Myths: The Politics of Legitimation in a Newfoundland Community,

Newfoundland Social and Economic Study no. 14 (St. John's: Institute of Social and Economic Research, Memorial University, 1975), 13.

18. J.D. Conlon, "General Remarks on Tidal Power" (Paper delivered at a meeting of the Canadian Electrical Association, Hydraulic Power Section, Halifax, N.S., 20 January 1961), 1. Conlon's agency, MMRA, was adapted by the Council of Maritime Premiers as the Maritime Resource Management Service. Through its continuation of the Acadian tradition of dyking and building aboiteaux, MMRA created civil structures superior to those at La Rance. Conlon advised against tidal generation at the Annapolis River Dam due to excessive energy cost projections in 1960.

19. John Diefenbaker in Gerald Childs, "PM Would Expand Atlantic Economy," The Saint John Telegraph-Journal, 16 May 1962.

20. Robert Coates, "Coal Needed for Canal Complex," The Halifax Chronical-Herald, 16 May 1962.

21. John Diefenbaker in Childs, "Expand Atlantic Economy," The Saint John Telegraph-Journal, 16 May 1962.

22. Federal Board membership consisted of C.M. Isbister, Deputy Minister, Department of Energy, Mines and Resources, (Chairman); E.P. Weeks, Assistant Deputy Minister Department of Regional Economic Expansion; T.M. Patterson, Special Consultant, Department of Energy, Mines and Resources; G.M. MacNabb, Assistant Deputy Minister, Department of Energy, Mines and Resources (alternate to C.M. Isbister); R.O. Lyons, Engineer, Inland Waters Branch, Department of Energy, Mines and Resources, (Secretary). Provincial Board representatives were: R.E. Tweeddale, Deputy Minister, New Brunswick Department of Economic Growth; L.F. Kirkpatrick, General Manager, Nova Scotia Power Corporation; and A.J. O'Connor, General Manager, New Brunswick Electric Power Commission (alternate to R.E. Tweeddale).

23. Atlantic Tidal Power Programming Board, Feasibility of Tidal Power Development in the Bay of Fundy (Ottawa: Supply and Services Canada, October 1969), 2.

24. The study office employed nineteen staff at peak, in addition to a consortium of nine consulting firms.

25. Atlantic Tidal Power Programming Board, Feasibility, 3.

26. Again, the three governments were represented: For Canada: E.W. Humphreys, Senior Advisor, Electrical Energy, Department of Energy, Mines and Resources; and Dr. A.E. Collin, Assistant Deputy Minister, Fisheries and Marine Service, Department of Environment. For New Brunswick: A.J. O'Connor, General Manager, New Brunswick Electric Power Commission; and Eldon Thompson, President, Trans-Canada Telephone System. For Nova Scotia: L.F. Kirkpatrick, President,

Nova Scotia Power Corporation; and Dr. R.B. Cameron, Nova Scotia Tidal Power Corporation. Meetings of the Board were held every month with rotating chairmanship.

27. Bay of Fundy Tidal Power Review Board, "Preliminary Reassessment of Feasibility of Tidal Power Development in the Bay of Fundy," Internal report, September 1974.

28. Ibid., 8.

29. Bay of Fundy Tidal Power Review Board, Reassessment of Fundy Tidal Power (Ottawa: Supply and Services Canada, November 1977), p. 3.

30. J. H. Matthews, "Fundy Tidal Power: Comments on Socio-economic Effects," in "Energy in New Brunswick," ed. D.C. Arnold (Sackville: Chignecto Research Group, Mount Allison University), 16.

31. Bay of Fundy Tidal Power Review Board, Reassessment, 5 and 40.

32. Ibid., 11.

33. Ibid.

34. Ibid.

35. Bay of Fundy Tidal Power Review Board Management Committee, Reassessment of Fundy Tidal Power (Ottawa: Supply and Services, 1977), 371-395.

36. Bay of Fundy Tidal Power Review Board, Reassessment, 9.

37. Bay of Fundy Tidal Power Management Committee, Reassessment, 409.

38. "In its work, the Tidal Power Review Board is an investigator rather than a proponent of any tidal power development in the legal sense of the word. It is therefore not constrained by federal or provincial legislation. However, assessment of environmental impact is clearly necessary in forming an estimate of feasibility." G.C. Baker and D.G. Hayward, "Bay of Fundy Tidal Power Study Program (1975)" (Paper delivered at the Atlantic Professional Engineers Conference, Saint Andrews, N.B., September 1976), 33.

Chapter IV

1. Gerald Regan, guest editorial, The Halifax Chronical-Herald, 5 January 1971. The quotation was repeated in an editorial in The Herald on 13 January 1971.

2. Some dissent resulted from the five year "restricted access" classification applied to the Atlantic Tidal Power Programming Board reports. Dartmouth-Halifax East MP Michael Forrestall raised this matter in the House of Commons. "Tidal Power Report Restrictions

Should End - Forrestall," The Herald, 12 January 1971.

3. Jason Baxter, "Tidal Power Politics," The Mysterious East, October 1971, 3.
4. Gerald Regan in "Fundy Publicity Unfortunate in Some Ways," The Herald, 22 May 1971.

5. Baxter, "Tidal Power Politics," 5. Jason Baxter was a member of the New Brunswick Journalism Co-op when he wrote the article. The Mysterious East, an alternative newspaper, was renowned for its "Rubber Duck" awards to polluters and bungling politicians.

6. The expression "civil service gobbledigook" appeared in a pro-Fundy editorial in The Herald on 13 January 1971.

7. A second article on tidal power by the "underground press" of the Maritimes was written by Ralph Surette in The Fourth Estate, April 1976.

8. Jeremy Akerman, "Editorial," The Herald, 21 December 1977, and Jeremy Akerman, "Opinion," The Amherst Daily News, 19 December 1977.

9. Ibid.

10. Akerman listed eight main objections: (1) the "myth" of lower power bills was wrong; (2) financing was a major unresolved issue; (3) Phase I reports were not immediately accessible for public scrutiny and discussion; (4) there were unanswered environmental questions; (5) Canadian experience with caisson construction technology was limited; (6) the real costs of the project were not known; (7) a national and regional electrical grid were requisites of the project; and (8) the Fundy publicity had caused undue wishful thinking about jobs.

11. Dr. Clarence L. Gosse, "Letter to the Editor," The Herald, 7 January 1964.

12. Editorial, The Herald, 25 May 1964.

13. "The age-old dream of harnessing the massive tides of the Bay of Fundy came a step closer to reality with the Atlantic Development Board announcement that tidal power development in Shepody Bay and Cumberland Basin is technically possible." Editorial, "Exciting News," The Herald, 26 August 1964.

14. Ian M. MacKeigan, Chairman of the Atlantic Development Board, in "Sees Great Power House in Atlantic Provinces," The Herald, 16 October 1964. The statement was frequently used by editors and tidal proponents.

15. "Minas Channel Dam Would Put Niagara in the Shade," The Herald, 25 February 1963. Premier Gerald Regan stated Nova Scotia has "a

horizontal Churchill Falls" in the Bay of Fundy tides. "Fundy Power is Certain," The Herald, 14 January 1971. Patrick Nowlan said, "Fundy Power was more realistic than Churchill Falls and more realistic than power development at James Bay ... which has been suggested by Quebec Premier Robert Bourassa." "Hopes of the East Ride on Fundy Tides," The Herald, 16 December 1970.

16. Alvin M. Savage, Managing Editor, "La Rance ... Merely a Pilot Project for Fundy: the Comparison - Ponies with Elephants," The Herald, 20 May 1971.

17. Lesmere Kirkpatrick, "Address on Bay of Fundy Tidal Power" (Paper delivered at the Annual Meeting of the Joggins Board of Trade, 21 April 1966).

18. Lesmere Kirkpatrick in "Fundy: 1978 Start is Possible - Study Results Encouraging," The Herald, 9 March 1977.

19. Patrick Nowlan in "Hopes of East."

20. Robert Coates in "Fundy power decision must be made - Coates," The Herald, 12 January 1971.

21. Robert Coates in "Federal action required," The Herald, 2 July 1977.

22. Editorial, "Studying Fundy," The Herald, 7 October 1977.

23. Editorial, "Fundy Report," The Herald, 25 November 1977.

24. Professor John Connor in "Tidal Power Development: Big Impact - Big Problems," The Herald, 26 February 1965 and William Marsh in "Fundy Tidal Power Survey Begins Soon: NS Power Official Approves; UMW Leader Opposes," The Herald, 30 June 1965.

25. Editorial, "Needed Study," The Herald, 3 July 1965 and especially Editorial, "An Abundance of Power," The Pictou Advocate, 16 July 1965.

26. Lesmere Kirkpatrick in "No validity to tidal power comparisons," The Herald, 8 January 1971.

27. L.S. Loomer, letter to the editor, "Serious Questions," The Herald, 25 January 1971.

28. Ibid. The masthead reads "The Chronicle-Herald stands for Atlantic progress and development and is dedicated to the service of the people that no good cause shall lack a champion and that wrong shall not thrive unopposed."

29. Victor Thorpe in "Ownership and equity control of Fundy must stay in N.S. - Thorpe," The Herald, 25 February 1971.

30. Claude Levi-Strauss, The Savage Mind (Chicago: University of Chicago Press, 1969), 16.

31. Malinowski in Anthony P. Cohen, Management of Myths: The Politics of Legitimation in a Newfoundland Community (St. John's: Institute of Social and Economic Research, Memorial University, 1975), 13.

32. Levi-Strauss in Cohen, Management of Myths, 13.

33. G.S. Kirk in Cohen, Management of Myths, 13.

34. Ibid., 13.

35. Ibid. See also E.R. Leach in Cohen, Management of Myths, 14. "Myth may function to mask contradictions and thereby make them tolerable."

36. The title of this section is derived from a 1964 letter to the Hon. Jean-Paul Deschatelets, Federal Minister of Public Works, from the Joggins Board of Trade Wharf Committee which states, "For a number of years, our community prospered but, lately, because of many obstacles our people are hard-pressed to make a suitable living. With determined citizens, we are now in the threshold of revival and we will not falter or waiver until justice and satisfaction are received."

37. Joggins Board of Trade, "1963 President's Report," 7 March 1964.

38. See especially "Will Study Tides, Currents, Bay of Fundy," The Amherst Daily News, 6 April 1965, and "Hydrographic Plans Outlined," The Herald, 1 July 1965.

39. Atlantic Tidal Power Programming Board, Feasibility of Tidal Power Development in the Bay of Fundy (Ottawa: Supply and Services Canada, 1968), 21.

40. For example, at a meeting of Cumberland County mayors on 4 February 1971, it was unanimously agreed to support provincial efforts for Fundy Tidal Power.

41. Personal interview with Father William Slaney, July 1979, on a decision made in 1976 by Father Hatherly, one of Father Slaney's predecessors.

Chapter V

1. Hon. F.G. Dubé, Hon. V.J. MacLean, and Hon. Len Marchand, "Fundy Tidal Power Environmental Assessment Panel Formed," Press Release, 22 December 1977.

2. The original Panel members consisted of F.G. Hurtubise, Chairman; R.H. Bailey, Nova Scotia Department of the Environment, Vice-

Chairman; L.V. Branden, Fisheries and Environment Canada; A.E. Collin, Bay of Fundy Tidal Power Review Board. Shortly before the the draft environmental assessment guidelines were released for public review in April 1978, two other members, Dr. J.G. Ogden III, Professor of Biology, Dalhousie University, and Dr. T.W. Goff, Assistant Professor of Sociology, Mount Allison University, were added to the Panel. They both attended two meetings prior to the release of the guidelines.

3. Theodore Lowi, "Decision Making vs Policy Making: Toward an Antidote for Technocracy," Public Administration Review, May/June 1970, 314-325. "Whatever services the citizen can render the state, he owes whenever the sovereign demands them, but the sovereign on its side, may not impose on the subjects any burden which is not necessary to the community; the sovereign cannot indeed, even will such a thing, since according to the law of reason, no less than to the law of nature nothing is without a cause." Jean-Jacques Rousseau, The Social Contract, trans. Maurice Cranston (Middlesex, England: Penguin Books, 1975), 74.

4. Paul Emond, Environmental Assessment Law in Canada (Toronto: Emond-Montgomery, 1978), 5. Douglas M. Johnston, "The Existing Statutory Framework in Canada and the Atlantic Provinces" in Coastal Zone: Framework for Management in Atlantic Canada (Halifax: Institute of Public Affairs, Dalhousie University, 1975), 30. According to Johnson, the BNA Act gave statutory backing for a broad regulatory regime in the Maritime provinces. For example, the 1970 revision of federal laws itemized 380 federal Canadian statutes, of which 67 could effect a coastal project such as Fundy Tidal Power.

5. Organization for Economic Co-operation and Development, Committee for Scientific and Technological Policy, Public Participation in Decision-Making Related to Science and Technology (Paris: OECD, 1978), para. 427.

6. S. Lindsay, "Conversation with Britain's Environmental Chief," Saturday Review 55 (1972): 70.

7. Canada, House of Commons, Debates, 29th Parliament, 2d session, Vol. 1, 1974, Hon. J. Davis, 499.

8. Bay of Fundy Tidal Power Management Committee, Reassessment of Fundy Tidal Power (Ottawa: Supply and Services Canada, 1977), 380.

9. "First there is a not so peculiar fascination with the possibility of achieving a technological feat which has few parallels. Second, there is that insistent desire to do something which will dramatically stimulate Maritime economics. Finally, these factors seem to gell exceedingly well that we switch to new sources, if not new forms of energy production." Tom W. Goff, "Fundy Tidal Power: Comments on Socio-Economic Effects" in "Energy in New Brunswick,"

ed. D.C. Arnold (Sackville: Chignecto Research Group, Mount Allison University October, 1977), 20.

10. Bay of Fundy Tidal Power Review Board, Reassessment of Fundy Tidal Power (Ottawa: Supply and Services Canada, 1977), 48.

11. Ibid., 9.

12. Dubé, MacLean and Marchand, "Panel Formed." According to Vincent, information-gathering draws criticism as a form of consultation whereby government informs the public of pre-existing plans and suggests ways in which they can adapt to them. Emond argues that environmental assessment as a decision-making mechanism implies a move towards centralized public decision-making, "a marked departure from the traditional basis of our society." Emond, Assessment Law, 3.

13. "Hard figures have always enjoyed a considerable tactical advantage in the decision-making." John H. Ross, "Quantitative Aids to Environmental Impact Assessment," Occasional Paper No. 3, Lands Directorate, Environment Canada, Ottawa, April 1974, 7.

14. Emond, Assessment Law, 167-207. Stephen Webb, Richard Krannich, and Frank Clemente, "Power Plants in Rural Area Communities: Their Size, Type and Perceived Impacts," Journal of the Community Development Society 11, no. 2: 81-96.

15. Roy T. Bowles, Social Impact Assessment in Small Communities. (Toronto: Butterworths, 1981), 31. This orientation is evident in the "Draft Guidelines for Preparation of an Environmental Impact Statement for a Proposed Bay of Fundy Tidal Power Project," April 1978, in which "environment" is divided into "natural" and "social/community" categories.

16. "Discussions of public participation and the assessment of project effects are so intertwined in the SIA literature that, at the moment, it is unlikely that there are any SIA studies which can distinguish the effect of a project from the effect of the impact study .... In terms of objective methodological criteria, however, it should be recognized that extensive (public) participation makes it almost impossible to distinguish between the effects of the project and the effects of decision-making." Bowles, Social Impact Assessment, 33.

17. Colin Cherry in Alan Baker, "Alienation or Communication," Canadian Journal of Communication 5, no. 4: 7.

18. Warren identifies the relationship of the local community to other centres of influence and communication which exist outside of the local area as an important analytic issue, identifying patterns of relationship in horizontal or vertical connections. "Horizontal relationships are connections between social units within the community" while vertical relationships are "connections of social

units inside the community to external social units." Warren in Bowles, Social Impact Assessment, 44.

19. This opinion is based on the distinction between miners' and railroad workers' connections with "the outside." A former local UMW official commented that there was little union activism in Joggins, and various sources stated that Joggins had little interest in social democratic movements or parties despite their activities in other Nova Scotian mining communities. On the other hand, several Jogginers who were railroad workers held executive positions in the Nova Scotia transportation and labour unions.

20. A popular community anecdote recalls a Jogginer with a wireless in his attic as the first to hear Titanic distress calls.

21. Ithiel de Sola Pool in Alan Baker, "Alienation or Communication," 8. The research for this thesis included an examination of more than 300 newspaper reports on tidal power from 1961 to 1979.

22. For example, the people of Joggins shopped more frequently in Moncton, New Brunswick, than in Halifax, Nova Scotia.

23. It is ironic that Jogginers can easily see the high international shortwave transmission towers of CBC stretching across the Tantramar marshes near Sackville.

24. This significant local baseline study covered 126 variables and solicited information from 3,042 Cumberland County homes. The CDPC was assisted by the Nova Scotia Housing Corporation, Young Canada Works, and provincial Job Corps staff. Twenty-minute, personal interviews were conducted in 33% of Cumberland homes (144 households in the River Hebert-Joggins area). In Joggins (Census sub-division A, area #206), 73 interviews were conducted, a sample of 35.6% based on the 205 dwellings listed in the 1976 census.

25. Cumberland District Planning Commission, "Cumberland County: 1977 Housing and Development Survey: Report 12: An Overview of Housing Conditions in County Polling District Five (Including the Village of River Hebert)," December 1980, 9-10. Approximately 49.8% of the sample recorded "physically inadequate" housing. The residents were "overcrowded" in 7.5% of the sample and "moderately crowded" in 17.6% of the sample. As with any survey, there were both sampling and respondent biases which affected the process. The survey sought personal data of a potentially embarassing nature on one hand, and on the other provided an opportunity for people to manipulate the interviewers for various reasons. The interviewers were admittedly reluctant to enter some "run-down" homes and avoided "nasty" dogs, thus skewing the responses somewhat.

26. Cumberland District Planning Commission, "Housing Conditions: Report 1: History, Methodolgy, Overview and Manual for Use," December 1978, 21.

27. Editorial, The Amherst Citizen, 26 March 1977. In 1978 the Chignecto Research Group prepared a preliminary bibliography for social analysis of the Chignecto Region and conducted nineteen "life history" interviews in ten Cumberland communities.

28. The greatest manifestation of the group's impact was the appointment of sociologist Dr. Tom Goff to the Environmental Assessment and Review Panel.

29. The Committee, in a February 1977 press release, stated that it was formed "nearly a year ago to act as a citizens' committee and watchdog on tidal development in the Bay of Fundy."

30. In a humourous circular, which was attached to the Committee's press release and circulated to all Fundy Tidal Power Review Board management committee members on 8 March 1977, one senior Review Board engineer stated: "(1) Re. the attached: despite disguise by clever choice of title, these people are the opposition. (2) They are active, being University people without need to do much work to make a comfortable living and thus lots of time for mischief. (3) Sorry all you irresponsible developers didn't get this notice in time to attend the meeting and be enlightened."

31. Particularly, Joggins, Economy, and North Hants in Nova Scotia; Rockport Peninsula and Mary's Point in New Brunswick.

32. Member groups included: the West Colchester Rural Development Association, the Nova Scotia Federation of Agriculture, the Committee for Responsible Tidal Power Development, the Maritime Energy Coalition, the Conservation Council of New Brunswick, North Hants District Worker's Institute, Windsor and District Labour Council, Truro Labour Council, Society for Alternatives in Food and Energy, Ecology Action Centre, and Community Planning Associations of Canada and Nova Scotia.

33. They included a prominent sheep farmer, a surveyor, a marine biologist/writer, a fisherman, a market gardener, and a community leader/housewife.

34. Interview, 5 September 1979.

35. Ibid.

36. Planning Committee for People, Tides and Energy, undated circular announcing meeting in Noel, Nova Scotia, on 1 April 1978.

37. This committee met on 12 March 1978 in River Hebert.

38. Planning Committee, People Tides and Energy, 1 April 1978.

39. It should be noted that a County Warden from East Hants

Municipality, Dr. Tim Snow, was appointed to assure a strong and non-partisan chair.

40. Planning Committee, undated policy statement for Noel meeting, 1 April 1978.

41. Interview, 5 September 1979.

42. Two of the oldest remaining residents in 1979 were the Delosdernier brothers. They told me that when translated their name meant "of the last."

43. Interview, 12 August 1979.

44. The Hall cost $40,000 according to the ex-president of the Association, and was built with LIP grants and "hippie power." The Federal Minister of Fisheries, Hon. Romeo LeBlanc, officiated at the Hall opening.

45. The Rockport Community Association had direct access to the Chignecto Research Group at Mount Allison University where this data was obtained.

46. Wallie Sears, "Fundy Tidal Power No Longer A Dream," The Halifax Chronicle-Herald, 17 March 1978.

47. Cumberland District Planning Commission Chairman Don Sutherland in "DPC Will Monitor Dialogue," The Amherst Daily News, 20 January 1978.

48. The provenance of this xeroxed piece is a complete mystery to me and to several local residents. While the publisher seems well informed of Joggins' community conditions and politics, an "outsider's" name and the phone number appear on the circular. The number is currently disconnected; tracing attempts have failed.

49. The Joggins Community Forum - People, Tides, Land, Resources, May 1978, 2.

50. Nanciellen Sealy, "A Report on Preliminary Ethnographic Research in The Chignecto Isthmus Region," Internal Note no. 11 (Sackville, N.B.: Chignecto Research Group, Mount Allison University, February 1979), 1.

51. Only ten persons appeared since the meeting coincided with a forest fire at Shulee where many Jogginers had hunting camps. From personal observation, it seems that the Joggins Volunteer Fire Department fights a large variety of fires including trash or practice fires in old mine dumps.

52. The sum of $300 was not channeled through Community Schools, but through a provincial Adult Education budget. Despite the nominal

cost of the seminars (Speakers had volunteered to come at little or no cost to the organizers), four months of pestering officials was required to obtain funding.

53. Except for several Dalhousie professors who declined to attend, the speakers were extremely cooperative and included Susan Holtz and Bill Zimmerman, Ecology Action Centre; R.P. DeLory, Manager, Design and Construction, N.S. Power Corporation; Professors Arnold, Goff and Cant, the Chignecto Research Group; Dr. R.H. Bailey, Vice Chairman, Bay of Fundy Tidal Power Environmental Assessment Panel; and Jim Lotz, Communications Task Group, Nova Scotia Technical College.

54. One "outside" group attending the Community Schools series, the West Colchester Rural Development Association, was cited as an interesting model for community development in River Hebert-Joggins.

55. Interview, 16 August 1979.

56. Interview, 30 August 1979.

57. Interview, 17 August 1979.

58. "Lack of knowledge," the orientation of the survey, the wording of the questions, surveyor-respondent interaction, and the interpretation of the survey all influenced the survey's outcome.

Chapter VI

1. Bay of Fundy Tidal Power Review Board, Reassessment of Fundy Tidal Power (Ottawa: Supply and Services Canada, 1977), 3.

2. This point of view is powerfully stated by Sydney Eagles in an article written by Harry Thurston, "Fundy Tidal Power: Ancestral Myth or Future Shock?" in Promise of The Future (Halifax: Atlantic Provinces Economic Council, Fall 1980), 9. In this article, Mr. Eagles states, "I'll live here 'till they put me out .... People don't know whether to fix up their house or what! You might as well live in a tar paper shack."

3. Ibid.

4. Bay of Fundy Tidal Power Review Board Management Committee, Reassessment of Fundy Tidal Power (Ottawa: Supply and Services Canada, 1977), 414.

5. In Leonard & Partners, Ltd., "Socio-Economic Aspects of Tidal Power Generation: Part 3, Social and Community Development Impact," A Report to the Bay of Fundy Tidal Power Review Board, November 1976, (Halifax: Regional and Urban Studies Centre, 22 November 1976), the authors note they "interviewed a few key informants and made use of

some newspaper reports and editorials." Subsequently, the Leonard consultants, Andrew S. Harvey, W. Stephen Macdonald and K. Scott Wood, authored a second report in which they acknowledged that large-scale scientific sampling of the population was out of the question at the preliminary stage because "(1) sampling might raise expectations and apprehensions at a stage in the project where no mechanism for community interaction is as yet even conceived, and (2) the time and funds allocated in Phase I simply did not permit it." Harvey, Macdonald, and Wood, Socio-economic Aspects of Tidal Power Generation (Halifax: Institute of Public Affairs, Dalhousie University, 1982), 88.

6. Roy T. Bowles, Social Impact Assessment in Small Communities (Toronto: Butterworths, 1981), 11. According to Bowles, "Impact research, even more than most social science research, is reflexive. The announcement of the results of a study can change the behaviour of those studied and hence change the predicted outcomes."

7. This panel would "study the potential environmental and related social and community consequences of the project and evaluate the significance of the impacts that might result from its implementation." Hon. F.G. Dube, Hon. V.F. MacLean, Hon. Len Marchand, "Fundy Tidal Power Assessment Panel Formed," Press release, 22 December 1977.

8. Ibid. In fact as the correspondence of N.B. Department of Environment indicates, a working group on public participation had been formed in mid-July, well in advance of the Phase I Reassessment publication. G.N. Hill to F.G. Hurtubise, 22 September and 30 December 1977.

9. See Chapter I for a discussion of communication environment. Communication for the purposes of the thesis is defined as a social process. Strictly, it is defined as "sharing .... Sharing, notice, not I send messages. Sharing does not mean simply passing something, some sign, from one person to another. It implies also that this sign is mutually accepted, recognized and held in common ownership by each person." From Colin Cherry, in "Alienation or Communication," Canadian Journal of Communication, 5, no. 4: 7.

10. Fundy Tidal Power Review Board Management Committee, Reassessment, 413.

11. The Working Group on Public Participation consisted of G.N. Hill, Coordinator of Information Programs, N.B. Environment; Michael Warder, FEARO; and Donald Waugh, N.S. Environment. Despite inter-governmental financial haggling, as evidenced in the correspondence, there was early consensus on public involvement. This likely reflects Cabinet adjustments in the EAR Process on 15 February 1979 to encourage public review and extra-governmental Panel members.

12. G.N. Hill to F.G. Hurtubise, 30 December 1977.

13. Ibid.

14. G.N. Hill to F.G. Hurtubise, 22 December 1977.

15. The vagueness of the package is understandable since in March 1978, Canadian and Maritime governments were embroiled in institutional and financial debates regarding the $33 million Phase II study.

16. Bay of Fundy Tidal Power Environmental Assessment Panel, "Draft Guidelines for Preparation of an Environmental Impact Statement for a Proposed Bay of Fundy Tidal Power Project" (Ottawa: FEARO, April 1978), 39. According to the guidelines, the "major social/community areas" which may be significantly affected by the project are: (a) demographic changes, (b) community service systems, public and private, (c) land and water uses, (d) historic resources, and (e) economic activity. Topics such as values, political efficacy, social cohesion, and public participation were omitted.

17. This acceptance is evident from the budget and from the schedule for the program, both of which were absurdly modest when compared with other inquiries such as the West Coast Oil Ports Inquiry, the Berger Inquiry, and the Porter Commission.

18. Conflict was especially likely insofar as the Assessment Panel's "Draft Guidelines" indicated a plan to study local government structure and community organizations to ascertain their degree and effectiveness as well as other obtrusive topics. Bay of Fundy Tidal Power Environmental Assessment Panel, "Draft Guidelines," 24.

19. R.I. McAllister, "Review of Socio-Economic Aspects of Tidal Power Developments," A report to the Management Committee, Bay of Fundy Tidal Power Review Board, 31 August 1977, 6.

20. Although this judgement appears in the Fundy Tidal Power Review Board Reassessment of November 1977, virtually the same statement is made by the Nova Scotia Tidal Power Corporation, Fundy Tidal Power Update '82 (Halifax: N.S. Tidal Power Corporation, 1982), 37.

21. Leonard and Partners Ltd. "Socio-Economic Aspects Tidal Power Generation: Part I, Executive Summary," Report to the Bay of Fundy Tidal Power Review Board, February 1977, 3.

22. The guidelines reflected the Board's desire to avoid political contention in Phase I. The Leonard consultants were interested in social factors which were "(a) key considerations in reaching a decision about any particular project and (b) important considerations in planning any project because of the costs or benefits their impact has on communities and people in the area." "Socio-economic Aspects, Part II," 1.

23. Ibid., 42. An improved social impact framework would: (1) identify "the groups" to benefit or to be hurt by alternative systems (disaggregation), (2) determine the social values of tidal power "communities of interest" and local communities, (3) provide non-quantitative information on project and community social goals, and (4) permit openness to a broad spectrum of alternatives early in project planning and design.

24. Joggins Board of Trade, "1963 Annual Report," 20 April 1964.

25. George Baker, Tidal Power Corporation, in Jim Vibert, "Fundy Power must abide by regulations," The Halifax Chronicle-Herald, 4 February 1978. Mr. Baker was later vindicated for his opinion when the project failed to move from Phase I into Phase II.

26. Leonard and Partners, Ltd., "Socio-economic Aspects, Part I," 90.

27. Ibid., 91-92. Following the Leonard consultants' discussions of particular scenarios with clear impacts with community respondents in 1976, the respondents recalled instances where community groups with "threatened interests" had opposed planning initiatives.

28. Ibid. The Cumberland District Planning Commission, which exhibited much interest in Fundy Tidal Power, initiated joint planning with the N.S. Department of Municipal Affairs as early as May 1978, sponsored a municipal leaders conference on Tidal Power in June 1978, and contributed to a social impact bibliography on tidal power published in January 1979 for the N.S. Department of Municipal Affairs.

29. G.N. Hill to F.G. Hurtubise, 22 September 1977.

30. Noted in Chapter V, Environmental Interest Groups and Local Interests.

31. Ibid. The statement's significance is derived from the belated "participation" of N.B. environmental interest groups in the assessment for the Point Lepreau Nuclear Generating Station and of N.S. environmental groups in the environmental assessment for the Wreck Cove Hydro Generating Station. Both cases are documented in Emond, Environmental Assessment Law in Canada (Toronto: Emond-Montgomery 1978), 235-59; the Lepreau case also appears in G. Bruce Doern, The Atomic Energy Control Board, A Report for the Law Reform Commission of Canada (Ottawa: Supply and Services Canada, 1976).

32. Coalition for Tidal Power Education, "Tidal Power Coalition Seeks to Inform Public," Press Release, 19 August 1977. See also Chapter V.

Chapter VII

1. Organization for Economic Co-operation and Development, Committee for Scientific and Technological Policy, Public Participation in

Decision-Making Related to Science and Technology (Paris: OECD, 1978), para. 427.

2. Reg Lang and Audrey Armour, Environmental Planning Resourcebook, Report prepared for the Lands Directorate, Environment Canada (Ottawa: Supply and Services Canada, 1980), 302.

3. Edward R. Lowenstein, "Citizen Participation and the Administrative Agency in Urban Development: Some Problems and Proposals" Social Science Review, 45 (1971): 292.

4. Roy T. Bowles, Social Impact Assessment in Small Communities (Toronto: Butterworths, 1981), 102. The Joggins residents who animated the Community Schools' Series had actually established "community shadow portfolios" for each of the Task Force Areas. These persons then developed a reading knowledge of and technical contacts in: Tidal Power Design; Tidal Power Generation; Market and System Studies, Alternative Supplies and Transmission; Socio-Economic Aspects; and Environmental Aspects. It would thus seem that the public wanted to know the objectives, process, and underlying values of all the Fundy studies as well as the decision-making process.

5. Community residents indignantly showed that one of the study documents indicated a working rail-line in Joggins. As the thesis observes, this line was terminated and removed at the end of the era of Post-War Decline. This inclusion was a mild form of symbolic violence to the community and helped cast aspersions on all of the Reassessment studies.

6. Andrew R. Thompson, "A Disciplined Framework for Public Participation" in Public Participation in Environmental Decision Making: Strategies for Change, ed. Barry Sadler, Proceedings of a National Workshop, Banff, Alberta, 17-20 April 1979 (Edmonton: Environment Council of Alberta: 1980), 25.

7. Ibid.

8. Bowles, Social Impact Assessment, 102.

9. See Cottrell in Bowles, Social Impact Assessment, 61.

10. Carole Pateman, Participation and Democratic Theory (Cambridge: Cambridge University Press), 42.

11. Ibid., 44. The other vital hypothesis is the crucial role of industry in democratic society.

12. Jean-Jacques Rousseau, The Social Contract, trans. Maurice Cranston (Middlesex, England: Penguin Books, 1975), 59.

13. Pateman, Participation and Democratic Theory, 30-31. Mill believed

that participation at the local level had both an integrative function for citizens and aided in the acceptance of decision-making. He also declared that democratic constitutions needed to be supported by democratic institutions "in detail" and beyond the central government.

14. Ibid., 37-38. Cole argued that a system of functional representation implied the continual involvement of the average person in their political affairs. By providing opportunity for individuals to "learn the rudiments of self government within a smaller unit," the stability of political leadership would be preserved, yet the individual would have more control over the political mechanism.

15. Edgar Z. Friedenberg in Lang and Armour, Environmental Planning Resourcebook, 18.

16. Pateman, Participation and Democratic Theory, 43.

17. Joseph E. Disanto et al., "Industry, Government, and Community Relations in SIA" in Social Impact Assessment: Theory, Method and Practice, a collection of original papers from the First Canadian Symposium on Social Impact Assessment 1978, ed. Frank J. Tester and William Mykes (Calgary, Alberta: Kananaskis Centre for Environmental Research, 1981), 28.

18. Ibid., 24.

19. Liora Salter and Debra Slaco, with the assistance of Karin Konstantynowicz, Public Inquiries in Canada, Science Council of Canada Background Study 47 (Ottawa: Supply and Services Canada, 1981), 166. What Salter and Slaco see as an insistence by advocate groups to do their own social studies has led to a gap between these studies and social research in scientific, discipline-oriented journals.

20. Andrew S. Harvey, W. Stephen Macdonald, and K. Scott Wood, the Socio-economic Aspects of Tidal Power Generation: the Social and Community Development Component (Halifax: Institute of Public Affairs, Dalhousie University, 1982), 88.

21. Bay of Fundy Tidal Power Review Board and Management Committee, Reassessment of Fundy Tidal Power (Ottawa: Supply and Services Canada, 1977), 3.

22. Ibid., 414.

23. G. C. Baker and D. G. Hayward, "Bay of Fundy Tidal Power Study Program (1975)" (Paper delivered at the Atlantic Professional Engineers Conference, Saint Andrews, N.B., September 1976), 33.

24. Salter and Slaco, Public Inquiries, 180.

25. These reservations are substantiated in Salter and Slaco, Public Inquiries; Dennis W. Ducsik, "Citizen Participation in Power Plant Siting: Aladdin's Lamp or Pandora's Box?" Journal of the American Planning Association 44, no. 2: 154, from personal observations in the Maritime electric utilities, and in Lang and Armour, Environmental Planning Resourcebook, 306.

26. Salter and Slaco, Public Inquiries, 59.

27. A.D. Jacoby and N. Babchuk in Timothy O'Riordan, "Towards a Strategy of Public Involvement" in Perceptions and Attitudes in Resources Management, ed. W.R. Derrick Sewell and Ian Burton (Ottawa: Policy Research and Coordination Branch, Energy Mines and Resources Canada, 1971), 105. It is historically true that individuals active in instrumental groups such as the Maritime Energy Coalition instigated the Coalition for Tidal Power Education, and that this coalition had both "expressive" and "instrumental" factions. It is also true that so-called environmentalists resident in the Cumberland Basin communities were active in the Upper Rockport and Joggins "expressive" groups.

28. Nanciellen Sealy, "A Report on Preliminary Ethnographic Research in the Chignecto Isthmus Region," Internal note no. 11 (Sackville, N.B.: Chignecto Research Group, Mount Allison University, February 1979), 1.

29. Vertical relationships are connections of social units inside the community to external social units outside the community. Warren in Bowles, Social Impact Assessment, 44.

30. Three schools of thought in development decisions: conservationists, promoters, and technologists are identified by Peter H. Pearse, "Natural Resource Policies: An Economist's Critique," in Managing Canada's Renewable Resources, ed. Ralph R. Krueger and Bruce Mitchell (Toronto: Methuen, 1977), 17.

31. Warren uses the term "horizontal linkages" to describe social connections within a community. Warren in Bowles, Social Impact Assessment, 44.

32. Joggins "enablers" consisted of indigenous leaders and new residents with experience in organizing communities and formal academic training. Jogginers were also encouraged to "be their own experts" by Jim Lotz, author of "Bridging The Gap: Modern and Tradional" Plan Canada 7, no. 2: 81-85.

33. Some caution is warranted with this data due to the sampling and respondent biases which affected the process. Interviewers reported that some people said Fundy Tidal Power would be good for the area for fear "of losing face ... although they evidently knew next to nothing about Fundy Tidal Power." Nova Scotia, Cumberland District Planning Commission, "Cumberland County: 1977 Housing and

Development Survey: History, Methodology, Overview, and Manual for Use," Report 1, December 1978, 21.

34. The dynamics were comparable to the residents of Small Harbour who telegrammed, "We are proud to announce that we are here to stay" in Ralph Matthews, "There's No Better Place Than Here:" Social Change in Three Newfoundland Communities (Toronto: Peter Martin Associates, 1976), 25-52.

35. Significantly, while the Citizens' Committee and the Volunteer Fire Department anticipated positive and adverse effects from Fundy for Joggins, it was a newly created entity, the Community Schools' Committee which took the lead in tidal power "education and participation," perhaps due to the County Councillor's censorship of tidal power "activism" in the former forums.

36. "Small Harbour has been left behind in the process of modernization. But, while it is largely the victim of modernization, it continues to exist only because it has become the client of modernization." Matthews, No Better Place, 45.

37. Note the parallels to the "newcomer" versus "traditionalist" conflict cause by the bridge-building controversy in Kenneth Westhues and Peter R. Sinclair, Village in Crisis (Toronto: Holt, Rinehart and Winston, 1974).

38. "To actively influence or control events, the comunity as a collective must have or develop the internal competence to manage local resources and bargain with external organizations." Bowles, Social Impact Assessment, 57.

39. Personal observation, based on a remark from a local leader.

40. Leonard and Partners, Ltd., "Socio-Economic Aspects of Tidal Power Generation. Part 3: The Social and Community Development Component," Report to the Bay of Fundy Tidal Power Review Board, May 1976, 1-10. See especially Table 1-2: Relative Locational Impact of Fundy Project on Census Subdivisions During Construction. This model is known as the zone benefit/cost distribution approach and also appears in Lang and Armour, Environmental Planning Resourcebook, 302.

41. Dennis W. Ducsik, "Citizen Participation," 160.

42. As Andrew Thompson notes "when [the] power balance is missing, as is characteristically the case when citizens are confronted with major development projects or new government programs, the public has no recourse other than to assert an adversarial position in a structured review process." Thompson, "A Disciplined Framework," 25.

43. Salter and Slaco, Public Inquiries, 60. On the other hand, since the Fundy Tidal Power Review Board co-sponsored a workshop on the

Environmental Implications of Fundy Tidal Power at Acadia University in 1976, there has been a continuing regional forum among the natural sciences on the potential implications of the project. In this sense the project debate has increased the breadth of information on environmental effects.

44. According to Roger Clarke, in a study of a Gaspe community, "Occupational pluralism describes the traditional pattern of combining several different activities, most of which rely on local resources, to produce income adequate to support a household and its members." Clarke in Bowles, Social Impact Assessment, 71.

45. It would be difficult to "measure" local economic activity to determine the social impact of Fundy upon this former industrial community. Sociologist and EAR Panelist Tom Goff raised his concerns about the volunteer or barter economy during an interview. Due to the fact that much of the product of rural communities is for home consumption, "the community is its own product." Matthews, No better place, 80. Thus Joggins' income would likely be underestimated in impact analysis.

46. K. Scott Wood's 1974 research for DIAND cited in Bernard R. Blishen et al., Socio-Economic Impact Model for Northern Development (Ottawa: Policy, Research and Evaluation Group, Research Branch, Indian and Northern Affairs Canada, October 1979), 1.

47. Ibid., 1.

48. Disanto et al., "Industry, Government and Community Relations," 30.

49. Herbert Blumer, Symbolic Interactionism: Perspective and Method (Englewood Cliffs, New Jersey: Prentice Hall, 1969).

50. R. Liora Salter, "An Exploration of Citizen Participation in Media," (M.A. thesis, Simon Fraser University, March 1973). After Wilhelm, Salter's six pre-conditions for public participation (known collectively as a paradigm) are: ends - people believe they may achieve some goal by participating, norms - when participation is in line with norms of political persuasion, values social or economic status and the problem is "significant"; means - there are courses of action available; social conditions - no limiting conditions, i.e. cost in time, limited finances, social "accessibility" of process; values - people want to participate (this is in part culturally determined); and cognitive data - when information is available on which to base a decision to participate (subjectively defined).

51. See Edward R. Lowenstein, "Citizen Participation," and Lang and Armour, Environmental Planning Resourcebook, 304.

52. Disanto et al. prescribe very specific roles for environmental panels, proponents, communities, and sociological consultants. They

propose the active participation of all parties in conflict resolution, with the environmental panel acting as an appeal board, and the consultant performing a mediator's or interpreter's role. The success of this model is based on understanding the definitions of the situation or symbolic interaction by other players. Disanto et al., "Industry, Government and Community Relations," 30-34.

53. Dennis W. Ducsik, "Citizen Participation," 164.

54. Blishen et al., Socio-Economic Impact Model, 11.

55. Ibid., 73, 80.

56. Ibid., 82.

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Figure Two
Aerial Photograph, Joggins, Nova Scotia
Maritime Resource Management Service, 1975
Scale: 1:10,000 (1" = 833')

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The Kentville Advertiser, selected articles.

The Pictou Advocate, selected articles.

The Sackville Tribune, selected articles.

The Saint John Telegraph-Journal, selected articles.

The Springhill Record, selected articles.

Interviews

Government Officials, Elected Representatives

Senior official, N.B. Cabinet Secretariat.

Deputy Minister, N.B. Energy Secretariat.

Member from N.S., Fundy Tidal Power Review Board Management Committee

Information officer, Federal Environmental Assessment and Review Panel.

Sociologist, Federal Environmental Assessment and Review Panel.

Environmental Official, Federal Environmental Assessment and Review Panel.

Member of Parliament, Cumberland County.

Member of the Legislative Assembly, Cumberland County.

Entrepreneurial and Industrial Representatives

Plant Manager, Northern Telecom.

Mine Manager, River Hebert Coal Mine (from Springhill).

"Outsiders"

Senior lifelong resident of Upper Rockport.

Vactioner and land-owner, Upper Rockport.

Former U.S. resident and member of Upper Rockport Community Association.

Joggins Area Residents, Past and Present

Female, early twenties. Office worker in Amherst and resident of River Hebert.

Retired nurse in sixties. Lifelong resident of Joggins and former midwife.

Retired school teacher, female. In sixties.

Former resident of River Hebert and active historian. In late fifties, female.

"Pensioned" coal miner in mid-fifties. (Several interviews.)

Former Joggins resident in mid-thirties. Presently teaches college in Ontario. Female.

Retired coal miner, railroad worker, and power plant employee. In sixties. Present County Councillor.

Coal miner's wife and immigrant in early forties.

Ex-coal miner of African ancestry. In mid-fifties.

Retired bookkeeper in early sixties, former Deputy Mayor and County Councillor. (Several interviews.)

Retired storekeeper and miner in early sixties. (Two interviews.)

Female, school principal in late thirties. (Two interviews.)

Female, university graduate. In early twenties. Worked on a county history. (Several interviews.)

Business administration teacher, male. In late forties. Quite active in community organizations.

Tradesman, approximately thirty.

Divorcee, active in Home and School Association. In early forties. (Several interviews.)

Retired school teacher and community leader. Female, in seventies. (Three interviews.)

Senior clerk in liquor store. Male, in late fifties. Outstanding sportsman and former UMW representative. (Three interviews.)

Parish Priest. College educated, in mid-forties.

Housewife and P.C. Party worker. In late thirties or early forties.

Several River Hebert miners in Mine "Lamp Cabin."

Poet, writer, and representative on Community Schools' Committee. Male, in early thirties.

Local administrator of housing grants. Female in late sixties, retired school teacher. Also active in Liberal party and Parish committees.

Former mine manager's wife and community leader, especially in United Church. In early sixties. (Several visits, one interview.)

Store owner, leader in Board of Trade and Fire Department. In mid-forties. Male.

Surveyor and employee of Maritime Resource Management Service. From West Indies. Very active in community affairs. (Several interviews.)

Former railroad worker, boxer, and fisherman. In late forties.

Fire Chief, River Hebert Fire Department. In late forties.

Fire Chief, Joggins Fire Department. Also employed as County Building Inspector. In early forties. (Several interviews.)

Small contractor and resident of Lower Cove. In early fifties.

Retired coal miner and craftsman, in early seventies. Resident of Lower Cove.

Coal miner and outdoorsman. Resident of Lower Cove. In late forties or early fifties.

Highways worker. Resident of Lower Cove. In late twenties or early thirties.

Postmaster and former miner. In late fifties. Active in Legion.

High school student, age seventeen. Male. Worked on several community improvement grants.

Unemployed labourer who worked on various "grants." Male. In early thirties.

Former fire chief and scale operator. In mid-fifties. (Several interviews.)

Cable splicer with telephone company. In mid-twenties. Member of Fire Department. (Several interviews).

Joggins resident and fisherman (boat tied near Lower Cove). In Late fifties. (Several interviews.)

Highway scale operator. Thirty. Male.

Former coal miner. In early fifties. Has silicosis.

Factory worker. Female. In late forties. (Several interviews.)

Factory worker at Northern Telecom in late forties.

Housewife, Community School Committee organizer, and executive member of Liberal party. In mid-forties. (Several interviews.)

Housewife, widow of construction worker, active in Citizens' Committee. In early fifties.