Inquiry on Federal Water Policy
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NORTHERN WATER ISSUES

by

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THE INQUIRY ON FEDERAL WATER POLICY

The Inquiry on Federal Water Policy was appointed by the federal Minister of the Environment in January of 1984 under the authority of the Canada Water Act. The members were Peter H. Pearse, chairman; Françoise Bertrand, member; and James W. MacLaren, member. The Inquiry was required by its terms of reference to review matters of water policy and management within federal jurisdiction and to make recommendations.

This document is one of a series of research papers commissioned by the Inquiry to advance its investigation. The views and conclusions expressed in the research papers are those of the authors. Copies of research papers and information on the series may be obtained by writing to the Enquiry Centre, Environment Canada, Ottawa, Ontario K1A 0H3.

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Abstract

This study reviews the main water use and management issues in the Yukon and Northwest Territories and proposes measures to improve federal water administration in this part of the country.

The themes addressed are: the legal and administrative context in the North; northern water uses; water planning and management; the possible impact of aboriginal rights on water management; the jurisdictional and interjurisdictional issues; and finally, the water diversion and export issue as viewed from the North.

Résumé

Cette étude passe en revue les principales questions reliées à l'utilisation et à la gestion de l'eau dans les territoires du Yukon et du Nord-Ouest et propose des mesures afin d'améliorer l'administration fédérale des ressources en eau dans cette partie du pays.

Les thèmes abordés sont: le contexte légal et administratif dans le Nord; les utilisations nordiques de l'eau, la planification et la gestion des eaux; l'impact potentiel des droits aborigènes sur la gestion des eaux; les questions juridictionelles et interjuridictionnelles; et finallement, la question de la dérivation et de l'exportation d'eau vue du Nord.

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DISCLAIMER

Parts of this study are based on studies jointly undertaken by the author and A.R. Thompson of the Westwater Research Centre, and in that sense he shares responsibility for some of the recommendations. Otherwise, the recommendations are entirely those of the author, as requested by the Inquiry on Federal Water Policy.

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I. INTRODUCTION

This study deals with the vast area of Canada north of the 60th parallel--Yukon and the Northwest Territories. Its purpose is to provide an overview of northern water use and management issues for the Inquiry on Federal Water Policy. In particular, the objectives are:

1. to describe the characteristics of northern water resources and uses which make their management different from the management of resources in the southern regions of Canada;

2. to review the legal and administrative arrangements for water management and assess their effectiveness within the context of changing economic, jurisdictional and social conditions;

3. to recommend appropriate measures for improving the effectiveness of federal water administration, including the implementation of a policy and planning framework for water and land use.

To achieve these objectives, the study takes the following format. The remainder of this chapter introduces the reader to the basic administrative and legal arrangements that govern land,

resources and water in the North. Chapter II deals more directly with major water uses and issues related to their administration. The federal role in northern water management is identified and analyzed in the subsequent chapters, particularly chapters III and IV. The final chapter sums up the recommendations made throughout the report in a way that, it is hoped, points out the direction for improving federal legislation and administration in northern water management.

The information, conclusions and recommendations brought to bear on these issues were derived from several sources. The written and verbal submissions presented to the Inquiry during its hearings in Whitehorse and Yellowknife provided valuable insights into how northern residents, organizations, industries and governments view northern water issues. The author has drawn extensively on previous northern water and resource management studies carried out by Westwater staff for the Yukon River Basin Study (Fox, 1984a, b; Thompson and Ourum, 1984; Thompson and Rueggeberg, 1984); the NWT Water Board (Rueggeberg and Thompson, 1984d), the NWT Territorial Government (Thompson, 1984), the Western Constitutional Forum of the NWT (Rueggeberg and Thompson, 1984) and as independent efforts (Fox, et al., 1983; Rueggeberg, 1985). Through the course of many of these studies, the author has had the opportunity to discuss northern water matters directly with the people involved in its management in Yukon and the NWT in an effort to gain first-hand knowledge of how the management systems operate.

1.1 Northern Government

Yukon and the Northwest Territories (NWT) are called "territories" (as opposed to provinces) because almost all land, water and resources are still "vested in the federal Crown"; that is, they are owned and managed by the federal government and the federal Parliament has full legislative control over them. This differs from southern Canada, where all land, water and resources are vested in the provincial Crowns. The original confederating provinces kept these resources when Canada was formed in 1867, and as new provinces were created, they, too, were given resource ownership and management (though in the case of the western provinces, the transfer of resources was delayed until 1930).

The federal Department of Indian and Northern Affairs (DINA) acts as the primary administrator and coordinator of federal activities and decision-making in the North. Although based in Ottawa, DINA and several other federal departments which deal with northern matters have main offices in Whitehorse and Yellowknife, the capitals of Yukon and the NWT respectively, as well as local offices in communities throughout the territories.

Each territory also has a territorial government. These governments have evolved from being merely advisory agencies appointed by federal officials to responsible bodies similar in structure to current provincial governments. They have elected legislative assemblies and elected (NWT) or territorially appointed

(Yukon) Executive Councils (analogous to provincial cabinets) led by a Government Leader (NWT) or Premier (Yukon). (One difference between the two territories is that Yukon adheres to party politics like the rest of Canada, whereas political parties have no representational role in the NWT).

These territorial governments were "created" under federal statutes--the Yukon Act and Northwest Territories Act. These Acts list 22 areas of governance which the federal Parliament has delegated to the territories. These delegated powers parallel many of the powers granted to the provinces under the Constitution. However, several important factors limit the authority of the territorial governments. First, except for wildlife management and lands around towns and communities, the federal government retains control of land and resources in the territories. Second, under the Yukon and NWT Act, any legislation passed by the territorial governments is subject to all federal legislation, and is subject to scrutiny--and can be overridden--by the federal government before becoming law. Third, the territorial governments are "creatures" of federal legislation, and, although political considerations by now dictate against it, they could be dismantled by another Act of Parliament. This differs from the provincial governments, whose positions are recognized and therefore safeguarded under the Consitution. These facts emphasize the subordinate position of the territorial governments relative to the federal government.

This situation is changing. For many years, northern residents have been calling for government that is elected in the north, that is directly responsible to their needs and that has control over northern land and resources such that their needs can then be acted upon--the situation that exists today in the provinces. "Devolution" of federal authority to the territories has slowly become accepted federally as well as territorially and now, both levels of government are seeking ways of achieving this goal in an orderly, acceptable fashion. But the means being sought, the processes being proposed and eventually the final outcome may be quite different in Yukon and the NWT.

1.2 Administration of Northern Water Uses

As with most natural resources north of 60°, ownership of water is vested in the federal Crown, as stated in section 3(1) of Northern Inland Waters Act:

> "...the property and the right to the use and flow of all waters are for all purposes vested in Her Majesty in Right of Canada."

The Northern Inland Waters Act (NIWA), promulgated in 1970, is the statute by which the federal government manages northern water resources. In addition, s. 10 of the Territorial Lands Act provides that the bed, below ordinary high water mark, of any body of water in the territories is deemed to be reserved to the federal Crown unless expressly granted. As well, s. 9 reserves to the federal Crown a strip of land 100 feet wide along all coastal

waters and along the banks of all navigable lakes, rivers and streams (water is navigable, for example, if a canoe can pass along it).

The authority to administer these water resources of the Crown resides with DINA. Two administrative entities within the Department discharge this responsibility:

- the Water Resources Division carries out various policy, administrative, technical and enforcement functions in water management.

- the Water Boards, established under NIWA, provide for "the conservation, development and utilization" of the northern water resources. The Boards operate mainly as licensing authorities with respect to water use and waste disposal into water.

Other government agencies have a role in northern water management. Environment Canada's Inland Waters Directorate carries out research and provides information to the Water Resources Division and the Water Boards on natural characteristics of water systems and scientific criteria for developing water quality guidelines and standards. Also, the department's Environmental Protection Service acts as an environmental watchdog, providing information and advice concerning water pollution, and monitoring impact prevention and emergency response procedures. As well, it has a role in the prosecution of offences. To ensure public health

and safety, particularly with respect to drinking water and to health hazards related to improper disposal of sewage and waste in settlements and industrial developments, the federal Department of Health and Welfare maintains surveillance and ensures compliance with safe standards and practices. Finally, the territorial governments are responsible for providing municipal water and sewer systems.

1.3 A word of warning

Although the term "the North" is often used in an all-encompassing sense, this vast land is by no means uniform. There are striking differences in the environment, history, culture, and economic and political characteristics of Yukon and the Northwest Territories. As a result of these differences, governing institutions in Yukon and the NWT, even though they may have identical names, mandates and structures, have very different "chemistries". They operate under different priorities with respect to the resources they manage; they have different relationships among themselves and with the public; they have different approaches for dealing with the problems with which they are faced. This characteristic holds true whether one speaks of federal agencies, such as the Water Boards, or territorial bodies, such as the territorial governments themselves.

Consequently, the water issues described in the following chapters differ in their relevance to each territory or to regions

therein. For example, placer mining as a major water use is almost solely a Yukon concern, whereas the effects of dividing the NWT is obviously a NWT priority. Both territories are concerned about changes to water legislation and administrative regimes, but with different perspectives and with different sets of priorities as to what changes should occur first and how they should be implemented. Likewise, devolution of federal jursidiction over land, water and resources to the territories is a primary concern of each territory, but the approaches being adopted are also vastly different. An attempt has been made to point out these differences where applicable, but regional perspectives may often be missing because the author cannot represent a truly northern viewpoint from a Vancouver office.

The upshot is that analysts, advisors and administrators must be cautious when suggesting or applying blanket policies or processes to "the North"; what may be applicable in one region may be entirely inappropriate for another. Similarly, the casual reader should be aware that variety, not uniformity, is the norm in "the North".

II. NORTHERN WATER USES

2.1 General Features

The majority of northern waters are in virtually pristine condition. Given the North's sparse population, one might think that there is a super-abundance of readily useable water. Several factors, however, dictate otherwise.

- Much of the North's groundwater is in a frozen state year-round as permafrost, making it unavailable for direct use.

- Low temperatures in the North slow down many of the natural biological processes which help to break down pollutants. As a result, it is generally believed that northern waters typically have lower assimilative capacities than southern systems, and therefore, are more susceptible to pollution. In many cases this factor reduces the waters useability for municipal or industrial-use situations.

- In central and eastern NWT, where the Canadian Shield is the dominant geological formation, the water typically has a low buffering capacity against acids. Many other regions are characterized by already high natural levels of toxic minerals to which the natural systems in that region have adapted.

These high levels, however, may lower the water's useability for domestic and/or industrial waste disposal purposes because acceptable ambient levels are quickly exceeded.

° High sediment loading is typical of the water flowing out of the mountain ranges in western NWT and eastern Yukon, often making these waters of little use for direct consumption.

° The high arctic regions receive very little precipitation and are virtual deserts where year round supplies of water for even domestic use can be a problem.

As in the rest of Canada, water uses in the North can be divided into two general categories: nonconsumptive or instream uses--those uses that depend on the natural quantity and quality characteristics of a water resource; and consumptive uses--those that involve changing natural water flow or quality in some way.

For several reasons, attitudes in the North reflect a strong concern with maintaining the natural condition of northern water resources. Northerners are in the enviable position of being able to learn from the "mistakes" made elsewhere. Consequently a priority is not to protect what is left (as in much of southern Canada) but to maintain the pristine condition that is still the dominant characteristic of northern water resources, by avoiding these same mistakes. In addition, certain features of northern life depend on natural water conditions. The existence of small,

highly dispersed communities and the prevalence of traditional ways of life mean that direct domestic use of rivers, lakes and streams is widespread. The traditional way of life--of living off the land--is vital not just to the economy but also to the culture and integrity of aboriginal society. Native peoples place great spiritual and religious importance on being able to fish, trap and hunt for their livelihood, as well as on the sense of being in close commune with the land and its resources. This way of life depends on natural water conditions for direct use, for maintaining aquatic habitat for wildlife, for river transport, and for preserving the essence of true wilderness that is associated with northern rivers and streams.

Several commercial water uses also depend on natural conditions. These include commercial fishing, water-based activities associated with tourism and recreation, and commercial water transportation.

Consumptive water uses on the other hand are increasing in the North, as more resources of economic importance are discovered and the northern population grows. The greatest concerns, in terms of the impact on water resources, are focussed on uses that generate wastes into water. Industrial processing, particularly the production of mining wastes, and municipal waste disposal are two such areas of concern. Other consumptive uses--or at least ones that involve changing the natural regime--that occur to a limited

extent or are being contemplated are hydroelectric generation and diversion and export of water to areas south of 60°.

Water management in the North, as elsewhere, involves balancing the goal of maintaining natural conditions for instream use and the interests in developing non-renewable resources and economic activities. This potential conflict underlies many northern water use issues. The following issues are ones that have received particular attention in the northern water use scene.

2.2 Protecting Natural Water Conditions and Instream Uses

2.2.1 Information deficiencies

In order to know how man's activities are affecting the water environment and its capacity to absorb these effects before its "natural" state is harmed, it is necessary to have some understanding of the characteristics of that environment. Collecting sufficient information for a thorough understanding is a common problem everywhere, but is particularly acute in the North. Acquiring the necessary data is hampered by the vast distances, remote conditions and severe climate that characterize most of the North. Added to this spatial problem are the rapid changes over time that characterize many northern hydrologic regimes - fluctuations in flow rate, sediment loads, nutrient content, etc. that can occur over very short time periods with the sudden changes in seasons. In addition, the North is by no means uniform in

climate, topography, geology, and hydrology, so that what may be considered to be "standard" water quality for one region is irrelevant for another.

Efforts are underway to systematically gather information on northern water resources. The Inland Waters Directorate of Environment Canada collects water quality and flow rate data from a series of stations located in the major physiographic regions of the North. The Water Resources Division of the federal Department of Indian and Northern Affairs (DINA) monitors water conditions associated with mines and other industrial operations to ensure that they are complying with the terms and conditions of their respective water use licences. The federal Environmental Protection Service also monitors water conditions on an ad hoc basis wherever problems appear to exist. In general, however, these monitoring and data collection programs are widely dispersed over time and space, and do not provide sufficient information to define the natural condition and to assess man's effect on it with any degree of confidence.

Furthermore, there is also a general lack of scientific and technological information regarding water quality standards and pollution control measures for northern conditions. Most standards must be derived by extrapolating from information generated for southern climes. Similarly, much of the available pollution control and waste disposal technology has been developed for

southern conditions and its application must be rigorously tested in the North before it can be used with confidence.

2.2.2 Ways of protecting traditional water uses

Concern over protecting natural flow regimes and the uses dependent on them -- hunting, fishing, travelling, recreation and tourism, as well as maintaining fish and wildlife -- has surfaced throughout North America. Most provinces now recognize the importance of maintaining flow rates sufficient, for example, to protect fish and wildlife habitat, in water management policies if not in legislation. As well, recognition of instream use is evident in some allocation systems. In the NWT, for example, the Water Board recently imposed conditions in the water use licence for Cadillac Mine requiring that it maintain a minimum flow rate in the stream from which it draws its water.

There is even some statutory recognition of the importance of maintaining instream conditions and uses. The Northern Inland Waters Regulations, for example, define a "use for conservation purposes" as a water use that can be licensed under the Northern Inland Waters Act (NIWA).

While recognition of instream uses is increasing, the fact remains that these uses have not been allotted the same legal status, and therefore protection under law, as consumptive or appropriative water uses. In the North, virtually all uses for

which water use applications have been made and licences granted are consumptive uses; water supply, waste disposal, and diversions for construction purposes are typical, and all entail some change to the natural state of water bodies. To date, no applications have been made, and hence no licences issued, for non-consumptive water uses such as maintaining the natural state of a water body for the purposes of protecting hunting, trapping and fishing resources, to maintain outfitting operations, to enhance the experience of park users, or to protect the habitat of indigenous wildlife for its inherent value. This is the case even though "conservation" is defined as a "use" in the NIWA Regulations. Non-consumptive uses are presumably the object of protection in setting terms and conditions in individual licences, but in that manner, conservation is always an after-thought and never the primary use under licensing consideration.

A second component of protecting instream uses and users is compensation for loss or impairment of these uses. There can obviously be technical difficulties in assessing compensation for the loss of many instream uses. For example, what is the value of an accessible source of food that cannot be bought in a store or for a ready means of transportation for which there is no ticket vendor? More significantly, what is the value to the way of life these uses represent?

There are also administrative problems regarding compensation. The NIWA does provide for compensation for impaired or lost water

use under certain circumstances, but, as will be discussed in Chapter III, vagueness as to implementation and the current lack of stated water use priorities render these provisions ineffective.

2.2.3 Conclusions and Recommendations

Information deficiencies: An understanding of northern water conditions can come only from greater efforts to survey the northern water environments in detail, to monitor and document natural variability and changes wrought by man, and to conduct experiments on the effects in northern climes of practices acceptable in the South. We understand that the Water Resources Division of DIAND and other government agencies (GNWT, DFO, DOE) have developed proposals for more comprehensive monitoring and survey programs, to try to fill this knowledge gap. The Inquiry should actively support these proposals through recommendations to the Minister, based on the necessity of this information for a comprehensive approach to water allocation and northern resource management.

Protecting traditional uses: There are several ways in which instream and traditional water uses can gain a higher profile in northern water allocation and management. Most are measures that can be taken by the Water Boards or involve changes to NIWA or its Regulations.

- Through licence terms and conditions, the Boards can require that minimum stream flows be maintained. Provisions similar to the conditions in the Cadillac Mine licence in the NWT should become standard practice.

- The Boards should consider licensing instream water uses under the "use for conservation purposes" class in the NIWA Regulations. For instance, a government agency like the Department of Renewable Resources of the territorial governments, the Canadian Wildlife Service of the federal Department of Environment, or the Department of Fisheries and Oceans, could apply for a licence to "appropriate" water for the purpose of maintaining minimum flows for environmental or habitat preservation. Also, Hunters and Trappers Associations could apply for water licences to protect areas that are specially important for traditional instream uses.

- Under section 17 of NIWA, the Governor-in-Council may reserve lands from disposition for the protection of any water resource or in connection with any undertaking considered to be in the public interest. Furthermore, the Governor-in-Council may direct the Board not to issue any licences in a given water body so that comprehensive planning may proceed or where the waters are required for a given development in the public interest. Such a "development" could be a specified traditional use. Moreover, the Board has power under section 14 to make recommendations regarding any of the above matters.

Therefore, the Board could recommend the reservation of a particular stream for the purpose of an instream use that is in the public interest.

- A "use for traditional-use purposes" should be added to the classification of water uses set forth in s. 5 of the NIWA Regulations. Then, this use would receive statutory recognition, could be licenced as such, and would be a water use category that would officially be considered in any priority-setting endeavours.

- Finally, if changes to NIWA itself are contemplated, the Act should give explicit recognition to the prior appropriation of water rights evidenced by long-standing traditional uses by requiring the Boards to protect them through terms and conditions included in water licences, and by specifying clearly-defined compensation measures in the event these traditional uses are adversely affected by licensed uses (see chapter III for more comments on legislative changes).

2.3 Placer Mining

2.3.1 Information problems

Placer mining is primarily a Yukon activity, and its contribution to Yukon's economy is of great importance. For

example, in 1980, royalty was paid on 58,420 fine ounces of gold, the value of that gold at that time being approximately $44 million (Fox et al., 1983). In 1981, the industry provided about 235 man-years of direct and 118 man-years of indirect employment (ibid.).

The major issue regarding placer mining stems from the effect of the mining process on waterways, and particularly its potential impact on Yukon fisheries. Placer mining can significantly reduce fish habitat in streambed locations where mining occurs. Modern mechanized operations dig, sort and re-distribute massive amount of gravels and sediments from river beds and banks, destroying what could be important fish spawning and feeding areas. Downstream of these operations, increased sediment loads -- created by discharging water used to wash or "sluice" the gold from the gravels -- may detrimentally affect fish and other aquatic life, although the use of filtration systems and settling ponds may mitigate these effects.

The placer mining industry contributes substantially to the Yukon's economy, both in generating revenue and providing employment, but it does so at a cost to the natural environment and resources uses -- fisheries, hunting and trapping, and outdoor recreation -- that are associated with it. Obviously tradeoffs between the benefits of mining and the benefits associated with the natural environment must be made.

But finding these trade-offs is laden with uncertainties. Data is limited in estimating the real value of placer mining in terms of its economic benefits to the territory as a whole and on a site-specific basis. Even less information is available for estimating economic benefits arising from fisheries, hunting and trapping or recreational use that could be used to compare with the economic benefits derived from placer mining on a site-by-site basis. Who benefits from each activity - Yukoners or foreign interests - is a controversial question. Moreover, making cost-benefit comparisons like this is always doubtful due to the many other intangible benefits that can be derived from either use of the resources; benefits associated with traditional, scientific, spiritual or intrinsic values. Finally, resource managers are uncertain as to the nature and extent of impacts caused by placer mining. This is due to insufficient information about such things as the distribution, activities and relative importance of fish stocks, and little understanding of just how much the natural environment can be perturbed before fish populations are seriously affected.

There appears to be general agreement that there should be some regulation of placer mining in order to minimize its impacts. But dispute arises over the degree to which impacts must be mitigated or compensated at the industry's cost, particularly given the relative economic significance of placer mining versus the fishery in the currently depressed state of Yukon's economy.

As Queenstake Resources Limited stated in its submission to the Inquiry:

> Placer mining in the Yukon is one of those very scarce endeavours in Canada where an individual, with minimal capital and hard work, can be self sufficient. It is the frontier spirit that deserves every effort by the rest of Canada to be preserved and allowed to grow. Apart from the cyclical gold price, the greatest threat to this lifestyle is the implementation by government of unrealistic placer mining guidelines. The economics of the industry are very fragile and the imposition of costly environmental water quality standards, that have little or no benefit, will irreparably damage this industry. Every effort must be made to encourage the placer mining industry so that it continues to maintain its important position in the Yukon economy.

2.3.2 Institutional problems

The institutional framework does little to relieve the tensions between conflicting interests, or to provide a means of arriving at satisfactory trade-offs. The Yukon Placer Mining Act is thought by many to be archaic in a society that is now aware of the importance of the environment and of regulating man's use of it. The Act is primarily concerned wtih defining the rights and administrative obligations of miners, and as Fox et al. (1983) point out, contains no provisions for environmental protection, for coordinating with other resources uses, or for allowing the benefits of placer mining to be reviewed in light of the benefits of other resource uses. The Fisheries Act is a powerful instrument for protecting fish habitat, and in so doing indirectly acts to protect the natural environment. It is aimed solely at fish and fish habitat and usually allows regulatory action only after a

harmful activity has begun rather than before. As such, it too does not provide the integrating and planning mechanisms needed for comprehensively managing resource uses.

The Yukon Placer Mining and Fisheries Act also do little to relieve the confrontational attitudes of the interests involved. The very nature of the Yukon Placer Mining Act perpetuates the free miner tradition of the industry, contributing to the industry's long-standing opposition to any restriction of its activities. In contrast, a literal interpretation of the Fisheries Act would totally prohibit placer mining activities wherever fish are present. Section 31 of the Act broadly prohibits "any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat," and section 33(2) equally broadly prohibits "the deposit of a deleterious substance of any type in water frequentd by fish." Furthermore, the Act fails to provide for, and therefore tolerate, other resource uses. As the Commission on Pacific Fisheries Policy (Pearse, 1982: 28) notes:

> The Fisheries Act remains silent on the existence of other resource uses or users, and this places the (Fisheries) officers in a very difficult position. The current referral process is working in spite of, not because of, the tunnel-visioned Fisheries Act. These officers do a very commendable job, considering their legislated terms of reference.

Placer mining uses water and disposes of "waste" in water ("waste" is defined in NIWA S. 2(i) (j) as "any substance that...would degrade or alter...the quality of those waters to an

extent that is detrimental to their use by man or by any animal, fish or plant that is useful to man..."); therefore, it comes under the purview of NIWA. Consequently, the Yukon Water Board has by default become the major regulator of placer mining in the territory. Although water licence terms and conditions must not vary from the standards of the Fisheries Act and its Regulations, protecting fish habitat to the extent called for under the Fisheries Act is not within the mandate of the Water Board or of NIWA. Therefore, a water licence issued under NIWA is not a guarantee to the placer miner that he is exempt from prosecution under the Fisheries Act, even if he complies fully with the terms of his licence. As a result miners complain bitterly of the regulatory uncertainties to which they are subject.

Finally, present implementation of NIWA deals only with allocating available quantities of water on a case-by-case basis. The Act has not been effectively used to review and plan the pattern of water uses appropriate to the interests of all Yukoners, including placer miners.

2.3.3. Conclusions and recommendations

The Yukon Placer Mining Guidelines Review Committee was established in March 1983 to hold public hearings to review proposed draft guidelines for placer mining operation and regulation. The draft guidelines were prepared by an interdepartmental committee composed of senior officials from DINA,

DOE and DFO. The report of the Review Committee was released in January 1984. The Committee aimed its recommendations at achieving three objectives: (Government of Canada, 1984:4)

> First, providing miners and public officials with legal certainty. Second, protecting existing investment. Third, the placer mining industry must be brought under a regulatory regime that is consistent with the nature and scope of environmental regulations that are applicable to other industries.

In terms of legal and policy issues, the Committee recomended:

> i) That as an interim measure, exemption should immediately be provided through regulations of the Fisheries Act and/or the Northern Inland Waters Act to allow placer miners to carry out established industry practices - most particularly, the returning of sluice water (deleterious substances/waste), at specified effluent standards to the water bodies from which they were obtained.
> ii) That in the longer term a thorough review of all legislation governing placer mining should be undertaken with the objective of making their application to the industry consistent, each with the other.

The committee also recommended that the Yukon Water Board should act as the single window for regulating placer mining through water licences, and that the necessary changes to the Fisheries Act and NIWA be made allowing the Board to take on these responsibilities. The Committee went on to make recommendations on the operational provisions of the draft guidelines.

The Minister of DINA apparently approves of the "general thrust" of the Committee's report, but to date, no direct action

has been taken from its recommendations. A government industry committee has since been formed "to look into various research and development projects for the purpose of implementing some of the recommendations and the guidelines" (Inquiry on Federal Water Policy Submissions, Whitehorse: 18).

Whether the review provided more indirect benefits - by allowing grievances to be aired and differing opinions to be put forward publicly - is difficult to tell. The placer miners clearly considered the draft guidelines to be too stringent to allow mining to continue as a viable industry, yet at least the review may have raised the general awareness of the "good" and "bad" sides of placer mining and the need to regulate it in a fair and open manner.

For now, the Water Board continues to be the primary regulator of placer mining activities. The Board's role has changed, however, since authorizations have been declared illegal and almost all placer mining activities must now be licensed. Chapter III describes this change in greater detail, but the long term net effect may be greater responsibility on mining licensees to account for the impacts of their operations.

2.4 Abandonment of Industrial Wastes

In the North, the most common form of industrial waste is that produced by mineral extraction and processing operations. These

processes often require the use of toxic chemicals; alternatively, the chemical processes can themselves produce noxious compounds, or can result in toxic substances being leached from the raw material itself. These compounds as well as solid materials end up in waste material. Treating and dispersing such wastes safely into aquatic systems is a problem everywhere, but it is particularly acute in the North. The colder temperatures slow down many of the natural or induced processes that can be used to degrade such waste material. The presence of permafrost has counteracting effects; for instance, water cannot penetrate into the ground very deeply, resulting in a myriad of shallow but interconnected lakes, ponds and streams. Waste discharged into one water body can therefore have a widespread effect through this interconnected system. In addition, in cases when discharge into a water system is deemed to be safe, it may be hampered by the extreme seasonal fluctuations in water flow rates.

Typically, liquid and semi-liquid wastes are discharged into and retained in tailings ponds, which may be held in man-made enclosures or naturally enclosed basins, where available. Some discharge from these ponds into local water systems may be allowed, depending on such factors as the toxic substances present, the effectiveness of the settling and degradation processes in the ponds, the water's chemical and biological characteristics, and the rate and volume of flow in the receiving environment. While the appropriate discharge and maintenance of these ponds is of concern, attention has also focussed on what to do with these ponds and

their contents, as well as solid industrial waste materials (dump sites, abandoned equipment, etc.) when operations end.

Regulating waste discharge into water comes under the purview of NIWA, but the Act is silent on the matter of abandonment. The Water Boards have nevertheless inserted conditions into water licences dealing with waste abandonment, but these conditions have been necessarily discretionary, usually implying that abandonment must occur "to the satisfaction" of the appropriate inspector or other authority. As yet there are no legislative or policy instruments indicating what is "satisfactory" abandonment. This situation leads to a number of questions·

- how could NIWA, its Regulations or other regulatory mechanisms provide for sufficient strictness to ensure that appropriate measures are taken in abandoning industrial wastes, but which are flexible enough to allow for changing technology and differing circumstances?

- how can the regulatory system ensure that those in charge are sufficiently expert to judge whether abandonment measures taken in any particular case are "satisfactory"?

- for how long should the operator or licensee be responsible for the abandoned wastes, given the uncertainty regarding long term or long range effects of those wastes?

- how can enforcement of abandonment measures be ensured for long term effects?

2.4.1 Conclusions and recommendations

Obviously, this issue needs further examination and research in a technological sense. From an administrative perspective, a policy or set of guidelines is desirable so as to waylay the present uncertainty regarding "satisfactory" abandonment procedures and the extent of responsibility of the industrial user. Some recognition in NIWA of the Boards' authority to deal with abandonment is also desirable. Finally, the Government of the NWT has expressed concerns in the past regarding abandonment procedures and their regulation. Under their mandate to protect municipal water supplies, the territorial governments might consider including regulatory provisions regarding abandonment in territorial legislation regarding environmental protection. If so, the respective territorial governments and Water Boards should coordinate their regulatory functions. Taking control of the regulation of waste abandonment could be a significant step in the transition of water resource management from federal to territorial authority.

2.5 Hydroelectric Power Development

A variety of studies have shown that there is considerable potential for hydroelectric development in the North. It has been

estimated that Yukon alone has a potential of 11,000 MW (assuming 60% capacity factor); currently, only 78 MW has been developed (Fox, et al., 1983). No territorial-wide survey has been done for the NWT, but regional studies have estimated a 1600 MW potential for the Keewatin District alone (Ruitenbeek, 1983).

Counteracting these favorable potential estimates are economic considerations. Costs for construction are significantly higher than south of 60°, given adverse northern climatic conditions and the distance from major suppliers of materials. Development would often not be cost effective as many of the potential sites are too far away from markets. (As an alternative to large scale proposals, the NWT Science Advisory Board has examined the feasibility of developing small-scale facilities (100-5000 KW) for use by individual communities (see: Ferguson, Simek, Clark Ltd., 1983)).

Regardless of the economic disadvantages, however, there are those who argue that the North is a vast storehouse of hydro-electric power, and that this potential should be protected. Proponents of this point of view argue further that it may be feasible to develop high potential sites on the prospect of luring industry to the north with the promise of cheap power. More lucrative might be development for export of electrical power.

These arguments meet opposition not only from those who argue on economic grounds, but also from an environmental standpoint.

Large scale development again impacts the fish, wildlife and wilderness resources, and affects those who depend on them.

2.5.1 Conclusions and recommendations

The most contentious issue regarding hydropower development in the North is whether developing power for export should be considered a viable and desirable strategy. This is really a political decision and the author refers the reader to the opinions expressed in the northern submissions to the Inquiry.

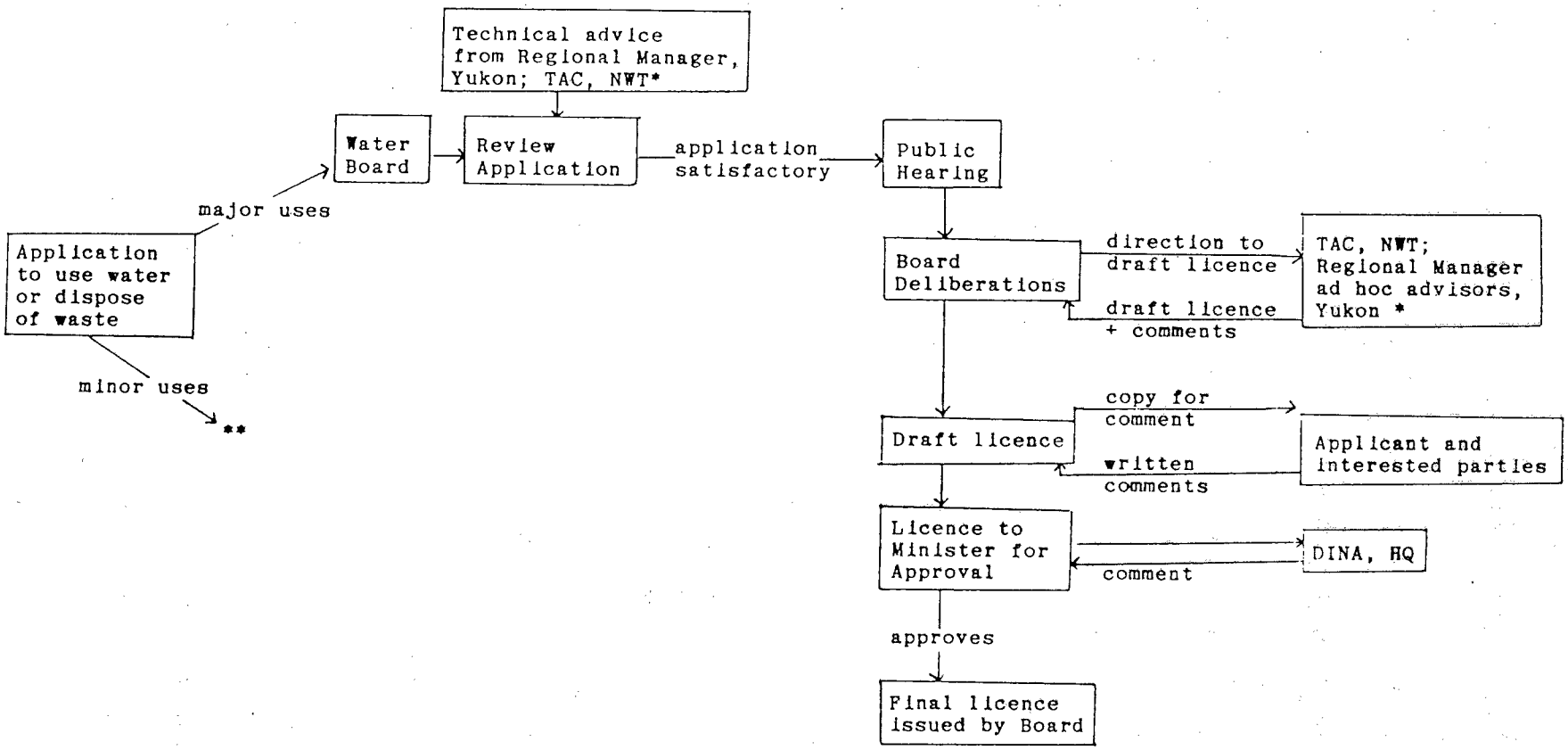
III. LEGISLATION AND ADMINISTRATION

3.1 The Licensing Process

The major tool by which water use is regulated in the North is the water licence, issued under the Northern Inland Waters Act and its Regulations, by the Water Board of each territory. The process for licensing water use in the territories is shown schematically in Figure 1.

The northern water management system is unique in Canada in that both water quality (waste discharge) and water quantity (allocation) are regulated under one statute and administered by one body. In contrast, the provinces typically deal with water allocation and water quality under separate licences and administrations, often leading to a lack of coordination and integration in these two important aspects of water management. The northern scheme largely eliminates this problem. Furthermore, as Figure 1 indicates, water licensing is very much a public process, whereby northern residents who may be affected by a given water use may become informed of its features and voice their concerns to the appropriate Board. Finally, water licences are always issued for a fixed term, anywhere from one to 25 years, and upon renewal they are publicly reviewed again and revised if necessary.

Figure 1. Water Boards' Licensing Process



* In the NWT, advice is sought from a permanent Technical Advisory Committee (TAC). In Yukon, advice is sought from the Regional Manager, Water Resources Division, DINA who consults with members of his department or of other departments.

** See text regarding how routine and minor water uses are now handled.

Despite these favorable characteristics, however, the water licensing system, the legislation and the general administrative framework still have their problems. Some of these problems are discussed in this and the next chapters.

3.2 Regulating Lesser Water Uses

Under s. 26(g) of NIWA, regulations may be made by the Governor in Council authorizing water use without a licence. Prior to 1984, authorizations were issued by a Controller of Water Rights (the Regional Manager of the Water Resources Division of DIAND) for water uses specified in s. 11 of the NIWA Regulations; municipal use by an unincorporated area, water engineering uses, or uses where the period did not exceed 270 days or the amount was not in excess of 50,000 gallons per day. This authorization process was an inexpensive and expeditious method of approving routine or minor water uses as compared with full licensing by the Board with its requirement of a public hearing. But its legality was challenged before the Federal Court of Canada in The Dene Nation v. The Queen (Feb. 14, 1984) where Madame Justice Reed held that s. 11 exceeded the statutory authority given in s. 26 (g) of NIWA to make regulations authorizing the use of water without a licence. Immediately following this decision, the Governor in Council passed a new s. 11 of the NIWA Regulations which simply repealed the former s. 11 and provided that water can be used without a licence for municipal purposes by an unincorporated settlement or a construction camp, for water engineering purposes or for a rate not

in excess of 50,000 gallons per day (SOR/84-157). This new s. 11 therefore dispenses with the authorization system and requires water users to judge for themselves whether a licence is required in the circumstances of their case. This leads to uncertainty concerning the need for a water licence. It also means that without the records formerly provided by the authorization system, the Water Boards and regulatory staffs will have difficulty in acquiring a complete view of all water use in their respective territories, compromising their ability to allocate and manage water resources in a comprehensive manner.

In the NWT, the Water Board tries to deal with this dilemma by requesting all water users to make applications which the Board then screens as to whether or not the proposed water use is in an exempt category. As well, both the Yukon and NWT Water Boards maintain that since almost all water uses release some form of waste into water, these uses must still be licensed under s.6 of NIWA regardless of whether or not they are exempt under s. 11 of the Regulations. Section 6 states:

> 6. (1) Except in accordance with the conditions of a licence or as authorized by the regulations, no person shall deposit or permit the deposit of waste of any type in any waters or in any place under any conditions where such waste or any other waste that results from the deposit of such waste may enter any waters.

In Yukon, almost all placer mining operations had fallen into the old authorization category; for example, 150 authorizations were issued for placer mining in 1982. Now, since placer mining

deposits wastes, all these operations have to be processed under the more rigorous and time consuming licensing process, which creates an immense workload for the Water Board.

To overcome this processing crisis, during the spring of 1984, the Board formulated "Draft Rules for Expedited Procedures" for licensing placer mining operations. These expedited procedures differ operationally from "regular" licensing procedures for other major water uses in several ways.

- The applicant is requested to fill out a detailed information sheet as well as a regular application form. Due to the basic similarities of mining operations, these sheets provide sufficient information to the Board and technical advisors to decide whether or not to accept the application for a public hearing. Obviously, it is to the applicant's advantage to fill out the sheet as completely and accurately as possible, to expedite the processing of his/her application.

- A public hearing is advertised for each acceptable application. For the majority of applications during 1984, no responses indicating intent to intervene were received by 10 days prior to the hearing date, and the hearing was waived with the applicant's consent (a consent form was attached to the information sheet which the applicant could choose to sign.) If a hearing was required, presentors were limited to

ten minutes. (The Board has not found it necessary to limit presentors under this rule.)

- Written comments rather than oral presentations were used extensively during 1984, especially by DFO whose comments were largely identical for all applicants. The applicant could choose to respond to these comments, and the comments were considered by the Board and technical advisors in setting the conditions of the licence.

As a result of these procedures, only three of 310 placer mining applications during 1984 required public hearings. While these procedures greatly reduce the time and effort normally expended on major water licences, there are several major differences between the new licences and the authorizations formerly issued to placer miners (these points were raised in a discussion with B. Lendrum, Water Board Secretary).

- Licences contain a monitoring schedule which requires the licencee to check water quality upstream, downstream and at the point of effluence. A simple settleable-solids test using an Imhoff cone is used, which the miner is expected to conduct weekly and report monthly. No such monitoring schedules were required under authorizations.

- An "objective" (though not a standard) for water quality in terms of ml. of settleable solids per liter of water is set in the licence. In authorizations, water quality was determined "to the satisfaction of the Controller".

- Construction standards are set in licences, in terms of the ability of structures to withstand certain maximum river flows. Not meeting these standards is a ground for licence cancellation.

- The information requirements for applications are much more extensive for licences than they were for authorizations. This is in part due to the greater demands of a public process, but also because the terms of the licence are tied directly to the details provided in the application. There is therefore a strong incentive to the miner to make the application as complete and accurate as possible.

- Similarly, whereas a miner operating under an authorization could simply call an inspector for approval if he wished to change his operation (in essence, amend his authorization), a licencee must formally apply for an amendment to his licence if he wishes to have legal endorsement of changes to his operation.

The draft Rules for Expedited Procedures for licencing placer mining were not formally approved before they were used for the 1984 season. They are now in the process of being approved by the federal Department of Justice and the Privy Council, before being gazetted under the Statutory Instruments Act.

3.2.1 Conclusions and recommendations:

There is considerable support for amendments to the Act that would introduce a process for issuing permits for relatively small, routine water uses that would be less rigorous than the current water licensing process and would not include any public hearing requirement. It is important that the new permits be given full status alongside licences in terms of standing and priorities. Therefore, their issuance must be fully integrated with the licensing process. For this reason, the new permitting process should be established under the jurisdiction of the Board; that is, whoever would be authorized to issue permits be responsible to the Board rather than to DINA. Both permits and licences should be entered in the Water Use Register as required by s. 19 of NIWA, and the Register should be maintained by Board staff.

The Yukon Water Board's draft Expedited Procedures for licencing placer mining could provide a useful model when considering what should be the components of a permitting system.

Currently, the Procedures take account of the public process inherent in water licensing; but in an operational sense, the ways which the technical procedures and interdepartmental referrals occur lend themselves well to adaptation to an in-house review and permitting process.

3.3 Water Quality Standards and Water Use Priorities

The NIWA authorizes the Governor in Council to make regulations prescribing water quality standards (s. 26c). It states that waste "will be treated and disposed of in a manner that is appropriate for the maintenance" of these water quality standards (s. 10(1)(b)), and that a Board may attach any conditions to a licence, "including conditions...based upon water quality standards prescribed (under the Act)" (s. 10(2)). Similarly, the Act authorizes the Governor in Council to make regulations classifying water uses and "providing for the priorities among the classes of use of waters..." (s. 26(d)).

Despite these provisions, standards and priorities have not been established under the Act. This is at least partially due to vagueness in the Act regarding the nature of these standards and priorities and how specifically they should be used. For instance, the Act is not clear whether "standards" are to be legally binding without any variations permitted, or merely to be guidelines or desirable objectives. With priorities, the Act defines the effect to be precedence of use (s. 22), but it obviously did not envision the difficulties associated with actually determining which use or

uses will have precedence over others. Yet, many important aspects of the water allocation system established under the Act -- such as compensation -- are virtually meaningless without a system of priorities in place. While other factors have played a part in the current lack of standards and priorities (see Chapter IV) the vagueness of the Act has not helped the situation.

3.3.1 Conclusions and recommendations:

The present uncertainty regarding the meaning of standards and priorities needs attention. Ways to establish standards and priorities within a water planning context are suggested in the next chapter. As for dealing with them in legislation, ideally they should be defined in NIWA so that they can reflect water management objectives that are developed in a planning framework and also allow administrative flexibility in using them--that is, they are not legally "written in stone". Such a definition could read as follows (Thompson and Rueggeberg, 1984; 88):

> "water quality standards" shall mean statements of desirable levels and concentrations of waste substances and methods of waste treatment that operate as guidelines to accomplish water management objectives as may from time to time be determined by the appropriate Water Board for water management areas.
>
> "Water use priorities" shall mean statements of water use preferences that operate as guidelines to accomplish water management objectives as may from time to time be determined by the appropriate Board for water management areas.

Such a definition could also be enacted as a regulation (under s. 26(q) of NIWA) rather than as an amendment to the Act itself, thereby involving a simpler legislative process.

This approach to defining standards and priorities in legislation has the advantage of giving statutory acknowledgement to guidelines for water quality standards and water use priorities established in a planning framework, but still retaining the decision-making flexibility associated with guidelines. At the same time, having guidelines set in regulations rather than merely as policy statements provides them with the added weight and credibility of legislative authority. The guidelines would then be translated into legally-binding terms and conditions by the licensing decisions of the Water Boards.

3.4 Compensation

A third problem regarding NIWA are obscurities and inconsistencies regarding compensation. The Act states that lower priority licensees who are adversely affected by a new licence of higher priority are entitled to compensation, but obviously this is meaningless when there is no priority scheme in place. Furthermore, means for measuring compensation are not stated, and the affected licensee must pursue any remedy in court, where he/she has the onerous task of proving "adverse effect".

More significantly, the Act does not provide for rights of compensation to non-licensed water users. The Act does authorize

the setting of security, but the relationship between security and compensation is not defined -- yet security is the only avenue by which non-licenced water users who may be adversely affected by a licensed use may be protected.

3.4.1 Conclusions and recommendations

If amendments to NIWA are contemplated, compensation measures should be clearly defined. Compensation where traditional (unlicensed) uses are adversely affected by licensed uses should be clearly recognized and appropriate measures and forms of compensation spelled out. Compensation should also be clearly provided where prior licencees are affected by subsequent licences who acquire a licence because their use is of higher priority, according to priority guidelines or decisions by the appropriate Board.

As for the measure and form of compensation, it is not realistic to assume that compensation will in fact result, especially in favour of unlicensed long-standing traditional users or small licencees, unless the questions of measure of damages, proof of loss and procedure for claims are addressed in the Act. To leave these matters to be resolved according to common law rules about the measure of damages and by ordinary actions in the courts is tantamount in many cases to a denial of compensation. While an arbitration procedure can simplify claims in many cases, yardsticks for measuring compensation for anticipated loss of water flows and volumes, as well as for anticipated loss of water quality, are

than specific assessments of loss in each individual case. This subject requires further study.

Amending NIWA may not be desirable at the moment. However, attaining compensation under the current NIWA, particularly for instream users, is very difficult -- because these uses are unlicenced and also because losses to these uses are difficult to measure and prove. Due to these limitations in NIWA, we caution that the Board would run into legal pitfalls trying to implement a compensation program under the current legislation for traditional and other unlicenced instream uses. The GNWT's Renewable Resources Compensation Policy has the potential to provide an avenue of redress to traditional water users in some circumstances. Its primary weaknesses at present are its status as a policy rather than as legislation of the NWT, and the fact that, as yet, it has not been really tested. The status could change if the GNWT exercises more of the legislative power bestowed on it by the Northwest Territories Act. We suggest that the Territorial legislatures should be encouraged to provide full legislative support for compensation programs which could impose on developers a general obligation to make good the losses which are imposed on the traditional users of natural resources.

3.5 Other Legislation

Issues associated with the Yukon Placer Mining Act and the Fisheries Act were discussed in chapter II. Although the Canada

Water Act has been in force for fifteen years, and has significant potential in the field of water management agreements and water quality control, it has been used in the Northern context only as the framework for river basin studies in the Mackenzie and Yukon rivers. The Arctic Waters Pollution Prevention Act and the Ocean Dumping Control Act apply to marine waters and regulate water use from waste disposal and transportation perspectives. These regulatory aspects are becoming increasingly important to the people of the Arctic coast, particularly as the rate of offshore drilling and tanker transport increases. But the Acts, unlike NIWA, do not provide for public input of any kind into the management of coastal waters, including such matters as waste disposal standards, timing and location of drilling and liability of operators (MacLachlan, 1984).

IV. PLANNING AND MANAGEMENT

4.1 Who Plans?

Water allocation under the licensing system described in the last chapter occurs on an ad hoc, reactive basis, with no official long term goal to guide allocation decisions. As the holder of province-like powers over natural resources in the North, DINA claims the authority for providing this policy direction but, so far, no clear policy has been put in place. There are those who believe that the Water Boards--because they are the primary allocating authorities, because they hold hearings and solicit public opinion, and because they are based in their respective territories--should have a role in water planning. There is some resistance to this notion, however, among federal officials who view the Board's role as merely to issue licences, and who feel that a planning role would not be in keeping with the quasi-judicial role of the Boards' licensing activities.

The previous chapter noted that water quality standards and water use priorities called for under NIWA, have not yet been established. Many critics argue that rational and accountable allocation, planning and management is impossible without them. Again, who is to be responsible for their development is not apparent. Both the NWT Water Board (see Rueggeberg and Thompson, 1984d) and DINA are conducting separate policy studies into what

and how standards and priorities should be set. The Inland Waters Directorate of Environment Canada is also conducting investigations into appropriate water quality standards. Recently, in the NWT, the Territorial Government initiated a study of policies for setting standards and priorities. One might hope that these studies will lead to better coordination of efforts and greater cooperation of the agencies involved, though at present the efforts seem fragmented and duplicative.

4.1.1 Conclusions and recommendations

There are those who argue that any planning-type activities are not part of the mandate of the Water Boards. Section 9 of NIWA states, however:

> 9. The objects of the boards are to provide for the conservation, development and utilization of the water resources of the Yukon Territory and the Northwest Territories in a manner that will provide the optimum benefit therefrom for all Canadians and for the residents of the Yukon Territory and the Northwest Territories in particular.

Allocating water use through licensing is the heart of the Board's mandate, but this licensing function must serve the purposes dictated by the wide-ranging requirements of s. 9. Furthermore, s. 14, which empowers the Board to make recommendations to the Minister, and s. 15, which authorizes the Board to hold public hearings concerning its objectives, provide the necessary powers to enable the Board to take a comprehensive, 'pro-active' approach

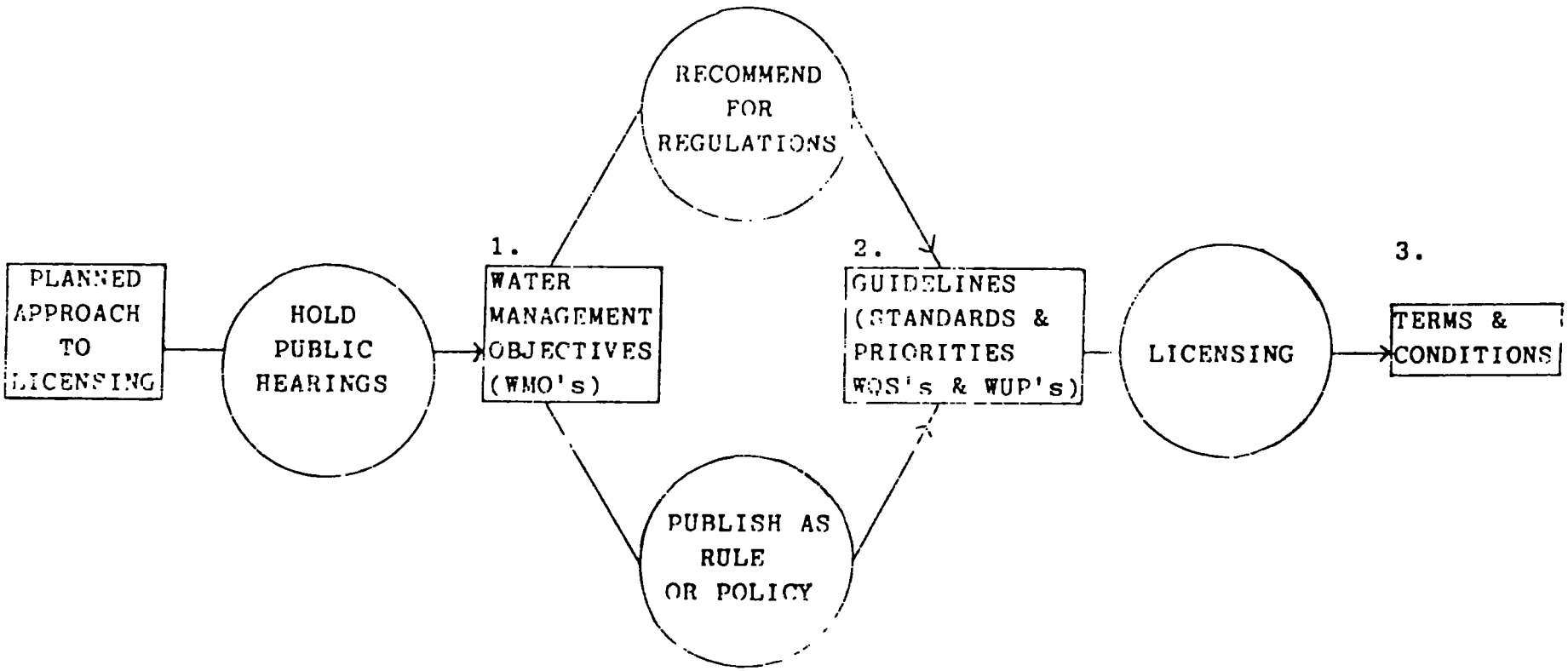
to licensing, rather than to merely judge each application individually in a purely reactive manner.

Such a planning-for-licensing approach does not undermine the quasi-judicial role of the Board in the licensing process because planning functions can be easily separated from regulatory proceedings. There is ample precedent for reconciling these functions. For example, the National Energy Board operates under quasi-judicial rules in reviewing applications for certificates of public convenience and necessity, yet it also carries out such planning-type functions as holding public hearings to estimate future energy supply and demand and to determine the preferred means of delivering energy to different regions of the country.

A previous study (Rueggeberg and Thompson, 1984d) proposed a planning-for-licensing approach in the context of setting standards and priorities that could be adopted by the Water Boards. This approach is shown diagramatically in Figure 2.

There are three main components in this appraoch. First, water management objectives (WMO's) are established by involving the public through a consultation process in the formulation of basic principles and goals that should underpin the licensing system. Second, based on these WMO's, detailed water quality standards and water use priorities are developed as guidelines by the respective Water Boards and either enacted in regulations made under NIWA or adopted and published by the Boards as rules or as

Figure 2. Model of planned approach to licensing.



from: Thompson and Rueggeberg, 1984: 81

policy statements. Third, the Boards use these guidelines in dealing with applications and in determining licence (and permit) terms and conditions.

(i) Developing WMO's: Each Water Board, in consultation with the appropriate territorial government, the regional Water Resources Division of DINA, and its other technical advisors, would develop draft water management objectives for its respective territory. (In the NWT, the Water Board has already drafted a set of decision-making principles for its licensing function. These could provide the basis for developing WMO's.) In general, WMO's would state what water uses are to be maintained, what are goals for water quality, and how these WMO's would be implemented. The draft WMO's would be reviewed in public hearings held by te Board under s.15 of NIWA, and the Board would issue a report adopting the WMO's following revisions made in light of the hearings.

The Boards could initially develop WMO's for their entire respective territory. However, deriving management objectives on an area-specific basis is advantageous, to allow local conditions and goals to guide water allocarion and protection. Therefore, it would be desirable for the Boards to gradually derive WMO's for individual areas, perhaps as areas become "hot spots" in terms of conflicting water use interests, using the general (territorial) WMO's for guidance. Developing such area-specific WMO's would also involve holding local public hearings. In time, particular water

management areas might have WMO's "tailor-made" to meet their particular features and demands. In this way, developing WMO's would be a dynamic process.

(2) Developing guidelines: At this step, each Board's staff, with the assistance of technical advisors and input from the territorial governments, would translate the adopted WMO's into detailed water quality and water use guidelines specifying such things as numerical values or range of values, treatment processes and minimum flow requirements. These guidelines could be circulated to the public in draft form before being released.

These are several ways in which such guidelines could be adopted. The Baords could formally adopt the Guidelines as policy statements or as Board rules, under the power given the Boards by s.18 of NIWA to make rules for carrying out its business.

If, however, water quality standards and water use priorities are redefined in NIWA or its Regulations in the way suggested in chapter III, then the Boards could submit the guidelines to the Minister of DINA with the request that they be promulgated as regulations under s.26(d) and 26(c) of NIWA. This approach would have the advantage of allotting statutory acknowledgement to the guidelines but at the same time, would retain the Board's discretion in applying them.

(3) Application in licence terms and conditions: The final step in this approach would see the implementation of the guidelines. They would act to guide the Boards in deciding whether to approve or reject licence applications and, if so, what terms and conditions to impose in them. It must be emphasized that the guidelines are not binding on the Board, but since they are public statements, they would put an onus on the Boards to give adequate reasons for deviating from the guidelines in any particular case.

4.2 Integration with Land Use Planning

In 1981, in response to the perceived need for a planning framework in the face of burgeoning resource development in the North, the federal Cabinet approved the development of a Northern Land Use Planning Policy. Initial attempts at a proposed policy were unsuccessful in gaining northern support. In the NWT, subsequent negotiations with the territorial government and, eventually, with major native organizations, led to an agreement on a set of planning principles and an administrative framework in July 1983. Both levels of government finally approved this agreement in November 1983. Implementation has been slow to get off the ground, however, as final approval and funding has had to await first Privy Council and then Treasury Board review.

In Yukon, however, while the territorial government initially signed a land use planning agreement with the federal government, DINA added a few last-minute provisions that conditioned federal

approval. The Yukon government could not agree with these appended provisions, the agreement fell through, and a stalemate currently exists. DINA and the Yukon government are instead independently pursuing land use plannng policies.

In looking at the planning framework being proposed in the federal-territorial agreements for the NWT, a break-through in northern land administration is evident in that the territorial government is given an equal position of authority with the federal government for the first time. Furthermore, the make-up of the administrative bodies (the Land-Use Planning Commission in particular) favors public representatives as opposed to members of federal or territorial bureaucracies.

In terms of its impact on water, a significant element of the proposed planning framework is that the concept of land use planning explicitly includes water. The agreement states that "the plans will provide for the conservation, development and utilization of land, resource, inland waters and the offshore". However, there is no indication in the agreement of how water will be dealt with in the planning process or in the administrative structure. Moreover, there are as yet no signs of how the current water licensing and water management systems will be coordinated with land use planning endeavors. Therefore, while the northern land use planning program may be regarded by some as the future solution to northern resource use problems, the apparent lethargy in its implementation even on an experimental basis, and the

absence of suggestions for how water will be integrated, still leave the issue of water planning in doubt.

4.2.1 Conclusions and Recommendations

Given the structure of the northern land use planning process that has been proposed for the NWT, several options regarding ways to integrate water planning and allocation come to mind:

- Each Water Board could proceed on its own to discharge its regulatory and allocative mandate, ceding all planning responsibilities to the land use planning process. In carrying out its regulatory functions, it would decide in each case the extent to which its decisions would adhere to "plans" established under the land use planning policy. This option would lead to little involvement in plan formulation, and as a result, little commitment on the part of the Boards to such plans. The indifference that might be created at the regulatory level could result in plans being largely ignored so far as water management is concerned.

- Alternatively, although its quasi-judicial status may preclude a Board from having members on the Policy Advisory Committee or Land Use Planning Commission, these groups could still systematically invite the appropriate Board to comment on water-related issues in the planning process. The Board could draw on the objectives, standards and priorities derived from

its own planning-for-licencing process when providing information to the land use planning process, particularly where regions of common interest overlap.

- The Land Planning Commission could also ask the territorial Water Board to hold public hearings regarding water management plans and priorities for any given planning region if it has not already done so. The water management and planning criteria so established could then be integrated in the respective land use plans to the extent possible. This would "lighten the load" of the Commission and its support staff and would also accomplish the much-needed coordination between land and water use planning and regulation. Even if the Commission did not request the Board to hold hearings, the Board could do so on its own initiative, using the results to formulate responses related to water issues for other land use planning forums.

- Planning regions could be identified on the basis of watersheds; for example, water management areas have already been established in each territory under NIWA, and could be used as a general guide, especially where major issues regarding water use have already arisen -- for example, the Fort Smith area surrounding the Slave River.

- The technical advisory staff of the Water Board and the Land Use Planning Commission could have common members, to encourage adherence to common goals and principles.

While the Water Boards may carry out planning for their water licensing functions, the responsibility for overall water resource policy will still rest with DINA and, in the future, with the territorial governments. The Water Boards and the northern land use planning processes will have to conform to this overall policy as it is developed. It is to be hoped that direction as to what this policy might be will be available by the time land use planning gets underway.

V. ABORIGINAL RIGHTS AND COMPREHENSIVE LAND CLAIMS

5.1 Impact on Water Management

The economic, cultural and religious importance of the North's water resources to its aboriginal peoples was emphasized in Chapter II. Ways by which aboriginal people can protect these important elements of their way of life are being sought on several fronts. Foremost are efforts to attain a definition and recognition of aboriginal rights in the Canadian Constitution. While the nature of these rights remain as yet ill-defined, it is unlikely that efforts to achieve such definition would neglect spelling out the rights of native people to the use and management of such a vital resource as water. Precedents are already being set in defining aboriginal water rights in the southwestern United States.

There is also an increasing claim among aboriginal people throughout Canada for forms of self-government. Efforts are also being focussed on having the concept of self-government enshrined constitutionally. A long-term goal of DINA is the devolution of local powers to Band councils, with Bands eventually taking on the appearance and powers of a municipality (R. Barnhart, DINA, pers. comm., 1985). While the exact implications for northern water management are not known, certainly substantial effects will be felt.

Aboriginal land claims can have considerable impact on the use

areas. Land claim settlements can define special rights regarding ownership, use and management powers for waters within claimed areas. Also, they may define how the aboriginal peoples involved will participate in resource management institutions affecting water resources, thereby impacting on management decisions regarding water use elsewhere. Finally, how aboriginal peoples use the waters to which they have defined rights or managerial powers can have effects on users beyond the claims area.

5.2 The Inuvialuit Final Agreement

The Inuvialuit Final Agreement involving the Western Arctic, signed in July 1984 by Canada and the Committee for Original Peoples' Entitlement, is the only comprehensive claim that has been settled in the North. Its provisions for water management are therefore significant as potential precedents for future claims, and indicate the possible effect aboriginal land claims can have on northern water management.

The Agreement establishes the boundaries of an Inuvialuit Settlement Region in which the Inuvialuit are granted title to 5,000 square miles of land in fee simple absolute, including all minerals and hydrocarbons, and 30,000 square miles in fee simple excepting minerals and hydrocarbons. Within this region, there will be certain laws (game management, environmental assessment),

certain rights (entitlement as an Inuvialuit) and certain institutions (for fisheries, game and wildlife management, research, environmental review) that will be unique and not necessarily shared in other parts of the NWT or Yukon.

In terms of water, sections 7(2) and 7(3) of the Agreement state that the Inuvialuit will own the beds of all lakes, rivers, and other water bodies in the Inuvialuit lands, but the Crown will retain ownership of all waters. This arrangement suggests that the Crown, through the Water Board, still has the authority to allocate water rights, but that any rights that require the use of or affect the beds of a water body cannot be exercised without the permission of the appropriate Inuvialuit authority. This is qualified in s 7(85) which states that Canada retains the right to regulate water bodies for the purpose of managing fish and migratory birds and their habitat, and for navigation, transportation, flood control and other governmental functions (in consultation with the Inuvialuit Land Administration).

In essence, Inuvialuit control over the water resources in their lands is by no means total, particularly where government functions (as opposed to control over private enterprise) are concerned. This may well be to the Inuvialuit advantage, though, as it leaves many costly but essential functions in the hands of the federal or territorial governments, while still allowing the Inuvialuit some voice in these matters through obligatory consultation and a virtual veto power if the beds of water bodies are involved.

5.3 Other Claims

Other comprehensive claims being currently negotiated in the North are those of the Dene Nation and Metis Association collectively (for the western Arctic south of the Inuvialuit lands), and the Tungavik Federation of Nunavut (for the eastern Arctic). Settlement negotiations with the Council of Yukon Indians are currently suspended (Minister's letter of December 20, 1984). Provisions regarding these claims are not made public while negotiations are still ongoing, so their effects on northern water resources are not known. Submissions to the Inquiry by these organizations may clarify their stances in this regard.

5.4 Conclusions and Recommendations

Little more can be said regarding aboriginal rights, self-government and land claims other than to emphasize that their definition and settlement will be major determining factors in the direction that resource management will take in the North. This is particularly true in the NWT, for nowhere else in Canada are native people in a demographic and political majority.

VI. JURISDICTIONAL AND INTERJURISDICTONAL ISSUES

The current state of almost total federal jurisdiction over resources in the North has received increasing criticism by northerners who feel that regional and territorial concerns and interests are being overridden by national ones, and that northern residents should be entitled to the same degree of representation in governing their own affairs as provincial residents. The following issues arise from this situation.

6.1 Devolution to the Territorial Governments

Federal policy has evolved over the last ten years to the point that the current government's position favours an organized, gradual transition of legislative authority over northern land and resources to the territorial governments (see: Canada, DINA; 1985). This position is welcomed by the territorial governments, but disputes are still likely to occur regarding how much authority is transferred over which resources, and how soon.

The Government of the Northwest Territories has recently advocated that a first step in the transition process be the transfer of authority over water resources. How this could occur is one of the subjects dealt with in that government's submission to the Inquiry.

6.1.1 Conclusions and recommendations

An idea that has been brought forward regarding the devolution of water management responsibilities from federal to territorial governments is to initially make the Water Boards responsible to both levels of government under a system of "mirror" legislation and regulations. Eventually, this accountability would be solely with the respective territorial governments.

To pursue this strategy, Thompson (1984) notes that regulation of wastes is within the jurisdiction of the territorial legislatures under heads of power defined in the Yukon Act and Northwest Territories Act. These heads of power are (as defined in s. 13 of the Northwest Territories Act): the licensing of business, industry, etc; establishing rules regarding property and civil rights; regulating agriculture; and regulating matters of a local and private nature. Consequently, the territorial legislatures are legally competent to enact legislation regulating waste discharges into water, providing that such legislation does not conflict with any federal statutory provisions.

Thompson (1984) goes on to say that territorial legislation regarding waste disposal in water could include provisions that parallel those of NIWA in so far as they relate to water quality, and could recognize the same Water Boards and the same definitions, powers and procedures as contained in NIWA. In this way, the territorial governments could adopt the Water Boards as their own

agencies, have Water Board licences issued as territorial as well as federal licences with respect to water quality, have additional provisions added to the territorial licences, and even require territorial licences in cases where federal licences are not now required. The federal government may support such action, as it could be seen as an appropriate transitional measure toward increased territorial self government.

Finally, the appropriate territorial agencies could gradually take over administrative and enforcement duties from regional DINA authorities by first becoming involved in enforcing their own water quality licences. As expertise and funds increase, full administrative responsibilities over water resources could be adopted.

6.2 Federal Policy on Interjurisdictional Matters

Given the federal governments' current dominant role in managing the North's water resources, it is of more vital concern to northerners than perhaps to provincial residents that the federal government have a workable policy regarding its role in interjurisdictional affairs. Both territories are apprehensive about the present or potential impacts of water use in other jurisdictions as both share major river basins with the western provinces. Therefore, the territorial governments advocate that the federal government take a more active role in interjurisdictional affairs.

The same problem arises here, though, as is encountered when considering the federal government's role in interprovincial water matters. What is the nature of that role? Certainly the federal government has a duty to represent territorial interests, but does it, in the national interest (of which protecting northern water resources may be a part), have a larger role to play?

6.2.1 Territorial involvement

Recent events in the NWT indicate that territorial concerns are not entirely dependent on the federal government for representation in interjurisdictional matters. The Alberta and federal governments began discussions regarding the impacts of Alberta's proposed hydroelectric development on the Slave River in 1982. The Slave is a major tributary of the Mackenzie River system, and a major development on it would have repercussions not only in the downstream portions of the Slave in the NWT but also along the entire Mackenzie River Valley.

Initially, DINA was willing to allow the Government of the NWT (GNWT) observer-status at any interjurisdictional negotiations. However, the GNWT advocated independent participation as a signatory on the basis that, as the body elected by the people of the NWT, it is the proper representative of the community and of regional interests that would be affected by upstream development. Alberta supported the GNWT's participation as a negotiating and signatory body, agreeing that the GNWT best represents the region's

interests. Perhaps Alberta anticipates that the GNWT will eventually acquire jurisdiction over water resources in the territory, and wishes to ensure that any agreements signed now would not be disavowed by a future NWT government.

As a result, the GNWT has been granted signatory status in both the negotiations with Alberta and the negotiations with other provinces towards a master agreement for the Mackenzie River Basin. The federal government remains a major player in any agreement, partially because of its jurisdiction over northern resources, but also due to its constitutional responsibilities for navigable waters, fisheries, national parks, and inter-provincial undertakings. However, the fact that the GNWT has signatory status regarding agreements for tributaries entering the NWT heightens its profile in water use management, as well as improves the chances of local and regional concerns influencing the nature of these agreements.

6.2.2 Interjurisdictional agreements

Both territories, as noted, share major sources of water with several provinces. Obviously, to make efficient yet equitable use of these shared resources, cooperation among these jurisdictions in their management is essential.

In the case of the Mackenzie River Basin -- which is shared by both territories and three western provinces -- an agreement was

signed in 1978 in which the governments of Canada, B.C., Alberta and Saskatchewan agreed to cooperate in a three-year study program aimed at gaining a more comprehensive understanding of the physical, biological, and hydrological characteristics of the Basin. The report documenting the results of the study was published in 1981. Its first recommendation stated:

> "that the jurisdictions at an early date conclude an agreement through which trans-boundary water management issues such as minimum flows, flow regulation, and water quality can be addressed...and which establishes a permanent board to implement the provisions of the agreement." (MacKenzie River Basin Study , 1981:x)

To this end, two conferences have occurred to exchange information and ideas among government representatives and others in the field of water management and interjurisdictional policy development.

The second workshop-conference, held in May 1983, produced an "Agenda for Action" which called upon the six governments "to move, as a matter or urgency...and conclude a formal agreement or compact on the cooperative management of the water resource (of the MRB)." This Agenda stated that the agreement should provide "an umbrella" under which the details of coordination could be worked out. (Sadler, 1984).

Currently, the various governments are pursuing bilateral agreements, each between the two jurisdictions encompassing a particular tributary or portion of the Basin that is of

common concern. This process means that the precedents for a future master agreement will be set by the terms of the bilateral agreements rather than vice versa, which is the reverse of the process envisioned by the two conferences that debated this issue.

As yet, negotiations of the terms of these bilateral agreements have not yet begun. Discussions among the Alberta government, DINA, Environment Canada and the GNWT regarding the Slave River are characterized as still being in a "pre-negotiation phase", where the parties involved are attempting to develop a common data base regarding flow characteristics, water quality, etc. to which all parties agree, and from which negotiations can then begin. Negotiation of the terms of the agreement itself are not expected to begin for another year (Inquiry on Federal Water Policy, 1984: 23).

6.2.3 Conclusions and recommendations

Little can be added to what has already been debated and suggested to the Inquiry regarding the federal government's constitutional and political role in interjurisdictional affairs (see: Dueggeberg and Thompson, 1984b). As for the involvement of the territorial governments, the present status of the GNWT in agreements regarding the Mackenzie River Basin improves representation of territorial concerns as well as raises the government's profile in water management. Such moves are to be

encouraged in the transition to increased territorial jurisdiction over resources.

6.3 Division of the NWT

Division of the NWT is not a new topic. It was seriously considered but recommended against in the report of the Carruthers Commission in 1966. The Dene Declaration of 1975 and the Nunavut proposal of the Inuit of the eastern Arctic in 1976 stated these native people's desire for separate, autonomous regional governments. Much of the current movement to divide the NWT originated in the eastern Arctic where the residents felt far removed from the territorial government in Yellowknife.

On April 14, 1982, the people of the NWT voted in a plebiscite in favour of dividing their land into two separate political entities -- an eastern territory and a western one. The federal government has agreed in principle to this division, provided that certain conditions are met. A Constitutional Alliance, comprised of several members of the Legislative Assembly and leaders of the four major aboriginal organizations in the NWT, was formed in 1982 to actively support the call for division. Part of its mandate is to select an appropriate boundary and to submit its choice to the public for consideration and approval. It is also responsible for reaching consensus and public ratification of proposals for political and constitutional development for each newly-formed territory. The Alliance formed two sub-groups; a Western

Constitutional Forum (WCF) which would deal with these issues in the western region, and a Nunavut Constitutional Forum (NCF) to serve the east.

On January 14, 1985, the Constitutional Alliance announced "Principles of Agreement" which include a tentative boundary from the 60th parallel to the south-east corner of the COPE claim area of the Inuvialuit and then northward along the eastern border of the Inuvialuit Settlement Region. The agreement, however, fell through in February when disputes emerged again between the two Forums over the process by which the location of the boundary was determined and the implications of the agreement for the Inuit communities (who did not support the proposed boundary) located around the Beaufort Sea. At the moment, the status of the negotiations is uncertain.

6.3.1 Conclusions and recommendations

Division of the NWT could create the same upstream-downstream problems on rivers flowing across the new boundary as are now experienced among the provinces. These problems are exacerbated by the vagueness of Canadian law respecting reciprocal rights and duties respecting upstream and downstream jurisdictions. If water licensing and management is also split, planning and management on a basin-wide basis, which the Water Board and DINA authorities have had the freedom to do for many river systems in the NWT, becomes very difficult.

One must recognize, however, that the lands of the NWT are subject to land claims settlements, and that division will likely not occur until these are completed. Given the combined effect of jurisdictional devolution, political division, and the settlement of three comprehensive land claims, the potential for a mosaic of partially or totally independent jurisdictions each with its specific rights to resources (including water) and its own managing institutions, becomes apparent. Under these circumstances, water management in the future appears to be up for grabs.

In the interests of comprehensive water ,management, and assuming that water management is handled territorially by the time formal division takes place, the governments of the separate territories formed by dividing the NWT might consider retaining a single Water Board for both new territories, with a mandate to manage watersheds according to principles shared by both jurisdictions as if no boundary existed. As an alternative, each jurisdiction could authorize its own Board to form a joint Board with the other to deal with water issues occurring at the new boundary. An agreement providing for such an arrangement should be formulated, and would specify a process for arriving at mutually agreeable management principles regarding water quality and allocation. As a third alternative, boundary water disputes could be handled by an agreement similar to the International Boundary Waters Treaty, which defines a process for arriving at solutions for individual water issues as they arise. (These recommendations are based on ones made to the Constitutional Alliance in Rueggeberg and Thompson, 1984.)

As a final option, a recent study (Foster, 1984) proposes dividing the NWT along natural water shed boudaries. In the south-central NWT, this natural boundary would be the height of land between the watersheds of Hudson Bay and the Mackenzie Basin. The boundary could be extended northward along lines of watershed to the west of the Thelon Game Sanctuary and the Queen Maud Bud Sanctuary. Foster (1984:ii) claims that such a dividing boundary "responds directly and positively to the problems inherent in division of the Territories and best meets the principles established for dividing the Northwest Territories into Nunavut and the Western Arctic."

VII. WATER DIVERSION AND EXPORT

There is an underlying attitude among some water managers that northward-flowing rivers are being wasted as they flow through the vast, empty north lands to the Arctic Ocean. Many would like to harness or divert that water for use in southern, water-short regions of Canada and the United States.

Some inter-basin transfer has occurred on a small scale in the territories, particularly Yukon, for hydro-electric generation. Damming resulting in diversion and inter-basin transfers in the upstream portions of several north-flowing rivers is being contemplated. The Slave River hydroelectric project proposal in Alberta has already been described. Controversy continues to flare intermittently over Alberta's consideration of inter-basin water diversion from the Peace-Mackenzie to the Saskatchewan-Nelson System to feed the irrigation and consumptive needs of the southwest (Sadler, 1983). Two other proposed projects involve diverting the headwaters of the Yukon River into rivers that flow through the Alaska Panhandle for generating hydroelectric power, the Yukon-Taiya diversion which would generate power in Alaska and the Yukon-Taku diversion generating power in B.C. (Fox et al., 1983).

The major arguments against these proposals are twofold. One involves the many environmental impacts of such massive changes in

these river systems, some of which could be surmised from previous projects (e.g. the Bennet Dam) but many of which are unknown. The other deals with the social, economic and cultural effects on downstream users in the territories, an issue that is particularly acute given that in most cases these users are at a disadvantage by not being in the same political jurisdiction as the proposed project. In most cases, it is not enough to ensure that sufficient water is left to fill the needs of these downstream residents, because the very wild nature of these rivers is an important part of the traditional lifestyle of many Northerners and of the national heritage of Canada.

7.1 Conclusions and Recommendations

Determining the economic and technical feasibility of diversion and export of northern waters is beyond the scope of this report. Determining its desirability is a political matter, and the reader is directed to the submissions made to the Inquiry for the opinion and feelings of northerners on this issue.

VIII. SUMMARY OF RECOMMENDATIONS

Protecting Natural Conditions and Instream Uses

- Proposals put forward by the territorial governments, the regional Water Resource Divisions of DINA, and the Inland Waters Directorate for comprehensive data collection and monitoring programs of northern hydrological systems should be supported.

- A number of measures for providing greater protection to instream uses have been suggested. These are:

  1) incorporating minimum flow terms into all water licences.
  2) issuing licences to government agencies under "a use for conservation purposes" prescribed in the NIWA Regulations, for the purpose of maintaining minimum instream flows and unimpaired water quality.
  3) using the power allotted to the Water Boards under s. 14 of NIWA to make recommendations to the Minister of DINA regarding reservation of land and water rights in the interests of protecting instream uses.
  4) adding traditional instream uses as a water use classification in s.5 of the NIWA Regulations, thereby permitting these uses to be licensed.

5) amending NIWA to recognize long-standing traditional water uses by requiring that all licences include conditions for maintaining minimum stream flows and providing for appropriate compensation measures for instream users who can prove long-standing use.

Placer Mining

- The recommendations of the Yukon Placer Mining Guidelines Review Committee should be more closely examined. Special attention should be paid to recommendations to:

  1) make the Water Board the "single window" for regulating placer mining.
  2) resolving regulatory conflict and confusion by making the regulatory regimes under the Fisheries Act and NIWA more consistent.
  3) examine the guidelines themselves to see how they could be gradually adapted for use by the placer mining industry.

- The present industry-government committee should be encouraged to follow through on these aspects of the Review Committee's recommendations along with their current emphasis on mining research and development.

Abandonment of Industrial Wastes

- The technology behind industrial waste abandonment in northern climes needs greater attention so that a concrete definition of "satisfactory" abandonment measures can be approached.
- The use of security bonds in providing for mine abandonment, and the long-term responsibility of the licencee for abandoned waste, even after the licence has expired, must be clarified in NIWA.
- Efforts by the territorial governments and the Water Boards to regulate waste abandonment should be coordinated.

Regulating Lesser Water Uses

- A process for issuing permits for relatively small, routine water uses that is less rigorous and time-consuming than the current licencing process should be established under NIWA. Such a permitting process should be carried out under the jurisdiction of the Water Boards such that whoever reviews and issues permits is responsible to the respective Board rather than to DINA. Permits should have the same legal status as licences. While public hearings would not be required, permit applications and the reasons for decision by the permit-issuing authority should be publicly available.

- A close examination of th administrative procedures and other operational aspects of the Yukon Water Board's Expedited

Procedures for licensing placer mining may be useful in developing a permitting process.

Water Quality Standards and Water Use Priorities

° These terms should be defined in NIWA or its Regulations so as to provide them statutory recognition. The definitions, however, should allow flexibility and discretion in the application of standards and priorities by the respective Water Boards. A way of defining these terms as guidelines is suggested.

° Standards and priorities should be derived and implemented through a planned approach to water licensing.

Compensation

° If amendments to NIWA are contemplated, they should provide for clear compensation measures (especially the relationship of compensation to security bonds) for prior licences and for traditional (non-licensed) users who suffer injury as a result of another, licensed use. The appropriate form and means of measurement of compensation, especially for traditional or instream uses, need careful study.

° If amendments to NIWA are not contemplated, the Water Boards do not presently have the legal support to implement

appropriate compensation programs. In this case, the Boards and water users must rely on the courts or look to government policies like the GNWT's Renewable Resource Compensation Policy.

Planning for Licensing

- A conclusion of this report is that the Water Boards have a mandate to take a long-term view of their licensing activities. A three-part planned approach to licensing is suggested which would see:

  1) the establishment of water management objectives on territory-wide and eventually area-specific bases via a public process;
  2) the derivation of guidelines for water quality standards and water use priorities that could be adopted as Water Board policy, Water Board procedural rules, or as regulations under NIWA as previously suggested;
  3) the implementation of these guidelines by the Water Boards in deciding whether to issue a given licence and the appropriate terms and conditions to be incorporated.

Integration with Land Use Planning

- There are several ways in which planning water use could be incorporated into or coordinated with land use planning efforts. One method suggested is for land use planning commissions (or other agencies set up by federal or

territorial governments) to invite input from the Water Boards or to request the appropriate Board to hold a public hearing regarding water use objectives for a given planning area. This approach would be especially applicable if the Water Boards adopt a planning-for-licensing strategy, as previously recommended. The water management objectives derived under such a strategy would be useful to any land use planning efforts; similarly, land use planning priorities could indicate which areas should be the focus of the Water Board's effort.

- Other useful measures for integrating land and water use planning are having technical staff common to water licensing and land use planning operations, and choosing planning areas based on watersheds and natural basins. These measures would help ensure that water use principles arse incorporated into land use planning.

Aboriginal Rights and Comprehensive Land Claims

- Water policy makers must recognize that substantial impacts on future water management regimes in the North will result from definitions of aboriginal rights and native self government and their incorporation in the Canadian Consitution, and the settlement of comprehensive land claims.

Territorial Devolution

- The management of water resources may begin to be transferred from federal to territorial control as one step in a chain of events leading to total government devolution. (This step has already been proposed for the NWT). This transfer could occur by adopting territorial legislation that mirrors NIWA. This legislation, along with concurrent amendments to NIWA, would make the Water Boards responsible to both federal and territorial governments. This legislation could also capitalize on present territorial fields of jurisdiction and take greater control of water quality management. Eventually, all aspects of water management, including full authority over the Water Baords, could be passed to the territorial governments.

Interjurisdictional Matters

- While the federal role in interjurisdictional affairs is ill-defined, the federal government has a duty to represent northern (not just federal) interests in any disputes regarding water resources shared by the provinces and the territories.
- Nevertheless, the territorial governments, should be encouraged to insist on equal status in any discussions or agreements regarding shared water resources.

Division of the NWT

- Division of the NWT could lead to problems in managing water basins bisected by a political boundary, similar to problems already faced among provinces and between provinces and territories. Such problems could be limited by such measures as providing for joint water management institutions (e.g., a joint Water Board, or agreements for water resource sharing), or by choosing a boundary which avoids crossing major water basins.

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