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Department of Community And Regional Planning

The University of British Columbia
2075 Wesbrook Place
Vancouver, Canada
V6T 1W5

Date: ** January, 1983
Abstract

Interorganisational conflict is common when public resources are developed for the benefit of identifiable private interest groups. In many instances it is not advisable or possible to avoid such conflict, but rather the conflict situation should be addressed and if possible managed to avoid environmentally, economically or socially destructive outcomes.

In this thesis I discuss how conflict might be addressed in resource development planning, specifically using the context of the route selection and site design levels of planning for linear transportation corridors in wilderness areas. First I trace the planning and implementation histories of three corridors to determine the "foci" and outcomes of conflict in these instances. Then, using a systems approach to planning and decision-making, I determine those aspects of the planning and decision-making system which generated the conflict foci and which were therefore inappropriate or suboptimal. From this I suggest ways by which the system might be improved.

Thereafter I review some of the recent conflict management literature and propose a conflict management model having the following elements:

i. use of a mediating agency with the authority to require involvement in the planning process but without the authority to impose a plan or solution;

ii. involvement of representatives of all major interest groups;

iii. analysis of the situation into its cognitive,
interest and value components, and analysis and
discussion of these components; and
iv. having a means of overcoming well-defined deadlocks in
the process in a manner that is appropriate in a
democratic society. |10 These elements are
substantially similar to the suggestions for
improvements to the planning and decision-making
system made earlier.

Next I review in detail the involvement of different
organisations in the planning process for one of the corridors
previously studied, and compare it with the conflict management
model:

i. no mediating agency with the authority outlined above
   was involved;

ii. the involvement of some interest groups was not
    welcomed or permitted by the proponent agency;

iii. only cognitive information was used in discussions
    and this was not usually objectively developed or
    verified but rather was disputed;

iv. there was no attempt to clearly define the pertinent
    issues and defined method of overcoming deadlocks.

Finally I suggest how the planning and decision-making
process for the corridor might have occurred had the conflict
management model been utilised.
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Secondly, many members of the Provincial and Federal bureaucracies were willing to discuss the intricacies of the projects studied in this thesis, and permitted free and open access to the relevant agency files.

Thirdly, my family showed a forbearance of my folly.

Finally, a Fellowship from Transport Canada greatly aided the research and production of this thesis by providing needed financial support for the twelve month period during which the majority of the work was accomplished.
I. INTRODUCTION.

A. INTRODUCTION.

Conflict appears to be an integral part of human existence. The very nature of our limited place in and access to what we believe to be an infinite Universe may be the driving force for much human conflict. In any case, conflict is no stranger to most instances of human action on that part of the Universe to which we do have access: Earth and its natural resources.

This thesis takes the view that in many instances it is not possible or advisable to avoid conflict. On the other hand, if conflict is ignored and permitted to develop without restraint or management it may result in situations in which it is difficult to discern any benefit for anyone involved. One must be aware of potential conflict situations, and manage them to avoid environmentally, economically or socially destructive situations.

In this thesis I discuss how conflict might be addressed in resource development planning. The context within which I do so is the construction of three linear transportation corridors in natural or "wilderness" areas. The corridors are: a) the Stewart-Cassiar road; b) the Dease Lake Extension of the B. C. Railway; and c) the Omineca mining road. These corridors are the only three to have been started in the North West of British Columbia in the past half century, all three were promoted for their potential to provide necessary access to areas of proven or potential mineral deposits, and each was developed by a
different government agency.

The objectives of the thesis are:

i. to identify the bases of conflict in a particular type of human action on natural resources - the planning and construction of linear transportation corridors in "wilderness" areas; and

ii. to develop a conflict management strategy based on strategies which have been described in recent literature and which is relevant to the planning and construction of linear corridors in "wilderness" areas.¹

B. PROBLEM CONTEXT.

1. AN IDEALISED PLANNING PROCESS FOR PUBLIC SECTOR TRANSPORTATION CORRIDORS.

The planning process can be described as a series of steps which is designed to produce, through an iterative process, a project which maximises the welfare of those associated with it. The steps can be described as follows:

1) symptoms of disorder or indications of potential opportunities are perceived,
2) from the symptoms or indicators a problem is defined,
3) tentative alternative goals or objectives are formulated by which it is anticipated that the problem can be overcome or

¹ In this context "wilderness" means an area in which there has been little environmental alteration by man, and in which there are few or no permanent residents.
ameliorated or the opportunities taken advantage of,
4) alternative means of attaining the goals or objectives are specified,
5) information is collected and analysed so that the consequences of the alternatives can be evaluated,
6) a choice of preferred action results from the evaluation. Following these steps a project may be implemented and evaluated.

However, this process is iterative. For instance, as goals are formulated and information analysed, the problem may be redefined, and so suitable goals and objectives may be formulated differently than they were initially. It was with such a process dynamic in mind that Wildavsky (1966) wrote that goals cannot be taken as definable at the beginning of a planning process, but rather emerge in the process of analysis and choice.

The process is also recursive, occurring on several planning and decision levels. For instance, in corridor planning and implementation at least three levels of interconnected decision making can be identified: 1) whether to build a corridor, 2) where to build a corridor, and 3) specific corridor design. The existence level concerns the need for or desirability of a corridor. It involves a determination of whether any transportation facility is needed in an area, and whether a surface linear corridor is the most suitable form. The next level of corridor planning relates to the location of a corridor. Finally, when the corridor location has been chosen,
the facility must be designed in a way that meets the constraints of both the agencies and public groups concerned and the biophysical environment through which it passes. At each level, the process involves goal formulation, specification and evaluation of alternatives and so on. The final result is expected to be a detailed corridor design in its specific location.

However, this recursive process is also iterative, in that information gained at the design or location planning levels may cause decisions at higher levels to be changed. For instance, it may be decided that a linear corridor should be built to a certain location, but if in the design stage extensive muskeg is found to lie on the proposed corridor, the location or transportation mode may have to be altered.

2. REALITY INTRUDES

There are several reasons why the process described above is frequently not practical in the real world. First, such a process may take a long time and involve large costs. This is especially true when firmly developed opposing viewpoints and yet some uncertainty exist regarding the project and its impacts (Connally, 1980). Since action is usually perceived as being required within some fixed, and often short, period of time, consideration of the project and its impacts must inevitably be truncated.

Secondly, the agency and the individuals involved in planning the corridor usually have their search for alternatives limited by their institutional mandate and personal educational
and professional backgrounds (Allison, 1972). Thus the selection of alternatives for evaluation is usually much smaller than might arise from a group which included many agencies and professional backgrounds.

Thirdly, political or other influences may explicitly remove certain alternatives or even planning levels from the set of those that are to be included in the planning process analysis. For instance, in the corridors which are studied in this thesis, the decision to construct a corridor was in all cases made at the political or high bureaucratic level, and so analysis of the rationale for building the corridor was essentially foreclosed. Since this level of decision-making raises problems and issues that are usually quite different from those encountered at the location and design stage, planning processes for this level of decision-making are not considered in this thesis.

These factors, among others, usually result in planning processes which are in some ways related to the ideal, and in many ways are rather distant from it.

3. CORRIDOR PLANNING IN THE NORTHWEST OF BRITISH COLUMBIA

Common features of the process of corridor planning in the north west of British Columbia, as revealed from preliminary observation, are:

i. decisions to build the corridors were made on the political or very senior bureaucratic level, with little evidence that the need for the transportation mode had been fully assessed or that alternative
transportation modes had been carefully examined.

ii. a single agency was entrusted with the planning of each corridor, so that the location choice reflected a search limited to those alternatives which served either the political or agency goals.

iii. there was little reliable information on the natural environment of the impact area or the potential effects of man's actions on them (i.e. corridor construction and use).

iv. For two of the corridors (the Dease Lake Extension and the Omineca Mining Road) there was a great deal of conflict regarding the environmental impacts of the project. Since conflict (or symptoms of disorder) was described in section A.1 (above) as being the first stage of the planning process, not its product, the process seems in these instances to have been turned on its head! Even though the process is expected to be iterative, it is not anticipated that a major process output will be a different form of the original process stimulus. The Stewart-Cassiar Road was the subject of relatively little conflict, and even, in retrospect, appears to have been an important element in the development of a conflict resolution system which is currently being actively used and further developed by the agency concerned: the Ministry of Transportation and Highways.
C. SYSTEMS ANALYSIS.

In this thesis I make reference to "systems" and systems analysis. It is necessary, therefore, to at least briefly define the approach and its associated terms and concepts so that they may be used without confusion in the rest of the thesis.

1. SYSTEMS DEFINED.

The definition given for systems by Krone (1980) serves most of the purposes of this thesis:

"A system is a complex set of interacting elements ... systems are what people define them to be and what nature has bequeathed." ¹

For my purposes, a more specific explanation is more useful: a system, and therefore its boundaries, internal components and inputs, can be defined as the minimum number of elements necessary explain or account for the behaviour (i.e. outputs) of interest to the analyst. There are three factors of interest in these definitions:

1) systems are composed of subunits, which may be subsystems or individual elements;
2) emphasis is placed on causal and associative relations between these subunits, as well as on their individual and separate features; and
3) systems may be either self-defined or analyst-defined.

Other relevant features of systems include:

¹ ibid, p.17.
4) systems and their subunits have certain boundary conditions (i.e. interactions between the system of interest and other associated systems) which may be determined to some extent by the analyst in as much as he can define the system; and

5) system subunits may also in many cases be considered to be and analysed as systems - thus there is a hierarchical nature to the concept.

Systems analysis, then, is an approach to problem analysis which incorporates these features.

2. TYPES OF SYSTEMS DISCUSSED IN THIS THESIS.

In Chapter II I discuss "planning and decision-making systems" from a pragmatic and process viewpoint, and use this orientation to illuminate the deficiencies in the planning processes which were used for the three corridors whose histories are related in that chapter. In the Chapter III I redefine planning and decision-making systems from a more output oriented viewpoint - that is, I define the general form which system inputs and processes should take in order that the system will generate the least amount of conflict in producing a decision. In Chapter IV I reconsider the Omineca Mining Road in more detail, and define as well as possible the planning and decision-making system which was used for that project, and compare the system inputs and processes used with those which are proposed in Chapter III as being most suitable for conflict management.

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1 Von Bertalanffy, 1968.
2 ibid.
D. LIMITATIONS OF THE THESIS.

This thesis deals with a topic which is a universal feature of human interaction, so it is not possible to treat the subject comprehensively. However, I believe that the approaches developed by some writers in recent years and discussed here have some applicability to addressing and managing conflict arising from the use of public resources.

Unavoidably, some issues are raised and then left, as it is necessary to concentrate my effort in certain key areas. In particular, the thesis concentrates on conflict surrounding a particular type of project and then further concentrates on conflict regarding the environmental effects of the projects. The progressive restriction of the subject matter (from Chapter II to Chapter VI) is a means of making the discussion deeper than it otherwise could have been. My work in this thesis is far from being a "definitive work" - rather I view it as being a working report which has enough internal logic and external relevance to stand (however briefly) on its own.

It should be noted that the models and processes I develop and discuss are oriented towards managing conflict, and not necessarily towards minimising either short- or long-term economic costs. Indeed, the long-term cost balance between ignoring versus managing conflicts over the use of public resources is uncertain at best.

Finally, there is yet one more major limitation on this work. I implicitly suggest that human action and interaction is or should be based on some logical derivation of reasonable
original precepts, and that most people desire to limit conflict to non-destructive levels. These views, in themselves, might be attacked on the basis that the original precepts on which most human thought and action are based are not "reasonable", or that the action is not logically derived. In other words, human action does not follow the same type of progression as a chess match - in which the rules are agreed upon and subject to no variation, and the implications of each move are often analysed far into the future and in response to past experiences.

Human action, however ritualised, has an element of the unanticipated. For instance, the world about us does not refrain from interference like spectators at a chess match. However, within human action and interaction there is room for more logical examination of most issues than has been evident from my investigation of the projects which form the subject of Chapter II, and I propose a method by which this might be accomplished. To the extent that the reader disagrees with this belief, he will find my proposals untenable and the thesis overly limited in its applicability to the conditions of the real world.
II. THE ORIGINS OF CONFLICT.

A. INTRODUCTION.

In this chapter I discuss a systems-oriented model of the origins of conflict and apply it to the planning and implementation histories of three transportation corridors.

In the first section I relate the histories of the planning and implementation of three northern British Columbia transportation corridors. Thereafter, a brief summary of the public foci of conflict which were associated with these projects is given. Then, the process of planning and decision-making is described in terms of a cybernetic system, and finally the origins of the problem foci are described in terms of suboptimalities in aspects of the planning and decision-making system.

B. CASE STUDIES.

The planning and construction histories of three corridors which have been built in northwest British Columbia are described in this section. The Stewart-Cassiar Road was built from 1952 to 1972, and extended from Meziadin to Kitwanga to join with the greater British Columbia highways system in 1978. Except at the very beginning of the process there was little conflict associated with this road during its initial planning and construction, or when it was extended. The B. C. Railway Dease Lake Extension was started in 1969 and abandoned, incomplete, in 1977. A lack of biophysical information about the area through which the rail line passed, and conflict
regarding its environmental impacts, resulted in the implementation of higher construction standards and costs and a longer period of construction than had originally been projected. There was limited debate with respect to the location of the rail line. The Omineca Mining Road was extended north from Germansen Landing from 1972 until 1978. There was controversy relating to the need for, location and design of the road.

1. STEWART-CASSIAR ROAD

Construction of the Stewart-Cassiar Road was started in 1952 by the B. C. Ministry of Mines to provide a B. C. seaport egress for the production of the Cassiar asbestos mines. At this time, and until this road could be completed, the asbestos would be exported over a quickly built route to the Yukon and then via Alaska to tidewater and finally by barge to North Vancouver. Construction of the Stewart-Cassiar Road was commenced by a company which was owned by friends of the Mines Minister, Mr. R. E. Sommers, and which received the machine rental contract without tenders being called. A lack of pre-engineering resulted in the road arriving at unexpected and impassable watercourses, and the construction machines sometimes leading the survey and route marking team into the forest or lying idle while a route was being marked for them.

In 1956 the Mines Minister resigned because of charges of corruption with respect to other contracts which he had let. No

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construction occurred in 1956 to allow completion of an engineering and feasibility study of the road. Thereafter it was decided that the road should be built by the B. C. Highways Department to highway location standards with complete pre-engineering. This road would cost $10 million, as opposed to the $5 million earmarked for the lower quality mining road. It would "tap a huge area rich in minerals." The manager of the B. C. Yukon Chamber of Mines responded by stating: "It's just what the (mining) industry has been waiting for," and note was made of the nearly 1000 claims which had been staked in one area.4

The federal government, recognising the importance of opening an all-Canadian access route from the Yukon to the ocean, agreed in 1957 to share the cost of the road with the province of B. C. It was stated that "the entire purpose of the road is to reach tidewater, so ore from that country (i. e. northwest B. C. and the Yukon) can be shipped out for processing."5 One official remarked: "There have been 150,000 acres staked (with mining claims) in the past 10 months," (to Feb. 1957).6

In October 1958 the B. C. Cellulose Company opened a 70 mile logging road to a new camp on the Nass River north of

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3 'Gov't to Speed Northern Hwy', Vancouver Sun, Sept. 29, 1956, p. 17.
5 Unidentified government official, quoted in the Vancouver Sun, Feb. 28, 1957, 'Stewart Highway Tenders in March.'
6 ibid
Terrace. It was heralded as "the first road to push north into the mountains and valleys of this rich corner of B. C. But others are building, and in a few years this first one is expected to be one link in a network." Only a 73 mile extension would be required to link this road with the prospective Stewart-Cassiar Road.

Work continued on the Stewart-Cassiar Road until September 1972 when the road was open, and traffic could move from Stewart to Cassiar and on to the Yukon. It was stated that the "Primary purpose of the new Stewart-Cassiar Road (is) to spur great resource development and let minerals like the asbestos of Cassiar get to tidewater at Stewart." But the managers of the Cassiar Asbestos Corporation chose to continue sending their material via Alaska, intending to use the B. C. Railway Dease Lake Extension when it was completed (at that time the completion date of the rail line was to be 1974).

The final cost of the project, after 20 years of construction, was $30 million from Stewart to the Alaska Highway. A system of good-quality logging roads and government access roads from Meziadin Lake to Terrace linked the Stewart-Cassiar Road to the rest of the province.

A federal Fisheries Management official stated unequivocally that the B. C. Highways Department and his bureau had worked "shoulder to shoulder" during the design and

7 'New Road Opens Rich Land' Vancouver Sun, Oct. 17, 1958, p. 31.
8 Bruce Larsen, Vancouver Sun, Sept. 16, 1971, p. 53.
construction of the road to minimize the environmental impacts that would result from its construction. However, because it was anticipated that the road would be used considerably by tourists, hunters and fishermen, and concerns were expressed by local recreational resource users and managers about the impact that these new users would have on the renewable resources of the area.

In 1973 it was decided, on the political level, that the Stewart-Cassiar Road should be linked from Meziadin Lake to Highway 16 by a provincial highway. Three routes were considered by the Highways Department: Terrace to Meziadin, Kitwanga to Meziadin, and Hazelton to Meziadin. Highways Department officials chose the Kitwanga route, which they perceived to involve the construction of a major Skeena river crossing at Kitwanga and the upgrading of existing roads and tracks from Kitwanga to Cranberry Junction and Meziadin.

Survey and design work began in 1974, and the upgrading of existing roads between Meziadin and the Nass river crossing was completed in that same year. However, in November of 1974 the Highways Department commissioned and funded an interdisciplinary study in order to gain more insight into the likely environmental and socio-economic impacts of improving the existing road along the selected route. It is notable that the terms of reference were formulated by staff of the Lands Service and the Environment and Land Use Committee Secretariat.

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9 Personal communication from Wilfred McKenzie, Feb. 25, 1982.
Secretariat, rather than the Highways Department, who were funding the study. The study team included an economist, a social scientist, a wildlife biologist, an aquatic biologist, a plant ecologist, a forester, a geologist, a hydrologist, a landscape architect, and an engineer.

Although the study was much too late to yield useful input regarding the corridor existence or location levels of the planning process, the study outcome resulted in several changes in aspects of the design (e.g. with respect to stream crossings), local routing (e.g. regarding location within wildlife winter range), and monitoring (e.g. an 'environmental monitor' was hired by the Highways Department to advise site engineers and contractors during construction).

The study report raised an interesting, and crucial, question: to what extent should highway design standards and costs be biased not only towards limiting potential damage to existing biophysical resources, but also towards maintaining options for the future enhancement of such resources? For instance it was stated:

"A policy question related to culvert design is as yet unresolved and is beyond the scope of this study. The Fish and Wildlife Branch has requested that culverts should be designed to pass fish, not only where fish presently migrate, but in situations where migration is blocked naturally near the culvert and where the stream situation is favorable to bypassing the block at a later date to increase available habitat.

"This request would require the Department of Highways to invest extra capital to improve the
existing environment."\textsuperscript{10}

Indeed, although the request overtly relates to the Highways Department doing its utmost to maintain options of increasing salmonid enhancement, it is only a short step to requesting that it actually enter the field of salmonid habitat enhancement. As discussed later, this is what has actually happened in subsequent highway design and construction projects.

When the route extension was completed, Highways Minister Alex Fraser reiterated that the purpose behind the investment in the corridor was to stimulate and expedite development in north west B. C. and that it was expected to encourage mineral exploration and logging activity in the area.

The Kitwanga Meziadin Study stated, in more sober terms:

"Concept of Highway"

"The Highway ... has been conceived as a means of facilitating economic development of the north west, but no specific development plans are dependent upon its construction.

"Initial construction of the highway appears to have preceded any definitive overall planning by regional and provincial authorities for development of the ancillary features necessary for the highway."\textsuperscript{11}

The study also pointed out that, even using the most favorable road usage projections which were considered credible,


\textsuperscript{11} op cit, Volume I, p. 12-1.
construction of the Stewart-Cassiar Road represented a subsidy of nearly $0.20 per vehicle mile for those using the route. Since most of the users were expected to be U. S. citizens, tourists who were using the route to travel more quickly and cheaply to Alaska, the wisdom of providing such a subsidy was questioned.  

2. THE B. C. RAILWAY DEASE LAKE EXTENSION

The Dease Lake Extension was one of a series of major track construction projects initiated in the northern half of B. C. by the B. C. Railway in the 1960's. The motives behind the program have been fairly clearly put forward by the leading actors in the decisions. One motive was the belief that the provision of access, and in particular railroad access, was not only a necessary but a sufficient condition for development. W. A. C. Bennett (1956):

"... we foresee many new discoveries, many new fields, and many new riches throughout the entire north, and we will endeavour always to keep them within reach of transportation."  

W. A. C. Bennett (1977):

"It was a pioneering railroad, controversial in its day, that provided this province its start in Canada and its rarely broken avenue towards prosperity. The B. C. Railway, dynamically reaching north, is both in harmony with the past, and an exciting step into

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12 ibid, Economic Impact of Highway, p. 8-8.
Bennett told the McKenzie Royal Commission into the B. C. Railway that the lines built during the 1960's and 1970's were meant to "trail-blaze at minimal cost ... making possible the dynamic development of resources and communities." He went on to state that

"... transportation is crucial to development. ... the railway concept was a package deal of transport, forest industries, mines, hydroelectric development, and exploration, some components more advanced in planning than others. The Dease Lake Extension would solve (transportation and cost) problems and others. It would also herald in an era of renewed and torrid exploration."  

A less concrete motive was the "railroaders dream" of a continuous rail link from Panama to Alaska. Bennett admitted, or perhaps rather boasted, to the McKenzie Royal Commission that he ascribed to this vision.

A third factor was strategic. It was felt by the provincial government of the day that control of the access routes to the Yukon and Alaska would permit the province to bargain for its use with Ottawa and the U. S. A. from a position of strength.

As the McKenzie Royal Commission summarised:

"The concept ... was to encircle with rail an area containing undefined resources, ... In addition, access would be provided from Yukon and Alaska for

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15 MacKenzie Royal Commission, Volume II, Chapter 3, p. 28
anticipated high volume resource traffic. Basic to the concept was recognition that resource and market development would take some time to occur following construction of the railway. The railway was to be constructed to 'minimum standards', implying an initial least-capital cost. Further investment, to upgrade track bed and structure and thus assure lower operating costs would be justified at some later date when adequate traffic had developed."\(^{17}\)

At the end of 1969 approval was given for the Dease Lake Extension. It was commenced the following year from the railhead at Leo Creek, some 180 miles northwest of Prince George, and was programmed to be completed by 1975.

Inflation was seen as the factor most likely to limit the viability of the line, and so efforts were taken to avoid the possible problems this might pose. W. A. C. Bennett to the McKenzie Royal Commission (1977):

"In viewing this construction it was inflation and therefore time that would be the most significant cost factor. Speed, as a result, would save more than all possible economies of engineering and construction. The following principles were therefore established for the implementation of the policy: A) that there should be minimum capital expenditure in the first instance; B) that projects should proceed with all deliberate speed; and C) that the resulting railroads, once the initial line was in place, would be upgraded to industrial standards as the need arose through operating business volume."\(^{18}\)

Bennett stated that he wanted unit prices for construction work set early and as much work completed as soon as possible before

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\(^{17}\) MacKenzie Royal Commission, Volume II, Chapter 4, p. 80.

the expected increase in inflation in the 1970's.

Tenders were called, and the lowest bidder was invariably awarded the contract after a limited investigation by the railway into the capability of the contractor to complete the work for which he had contracted. One major contract was let to a construction company from Alberta which found working conditions unlike anything it had previously experienced. Almost without exception the tender description of the work to be done differed markedly from the ground reality, because the engineering estimates were based on little ground investigation. Cost overruns and deadline extensions proliferated, but the work continued.

In 1972, the Bennett government fell, and the incoming N.D.P. government halted work on the extension in order to study its routing and its overall financial viability.

The Regional District of Kitimat-Stikine commissioned a report which showed that the projected route would by-pass the majority of forestry and mineral resources. Therefore it would be necessary to build many spur lines if these resources were to be accessed by the Extension. An alternative route alignment which would run closer to and parallel to the Stewart-Cassiar Road was suggested. It appeared that the Dease Lake Extension, which was to be the key to opening the region's resource treasures, might miss the mother lode. Finally, however, the original alignment was continued because of a preference by the Barrett government to provide access to the Yukon rather than limit its horizons to British Columbia.
The **Touche-Ross Report**, which looked into the financial viability of the line, was released in February 1973. It stated that the line was financially viable at a total construction cost of $102 million, and with certain resource developments coming on stream at specified dates. On the basis of this report, the Barrett government decided to continue the project along the original routing. Testimony by Barrett before the McKenzie Royal Commission showed the new government to be as committed to the Extension as the Bennett government, and for many of the same reasons.

Cost overruns, which may be expected in any project, became ever greater. Three factors have been cited for the magnitude of the extra expenditures: 1) increased environmental protection costs arising from conditions imposed by Fisheries Canada, or requested by environmental agencies or groups and supported by the N. D. P. government; 2) increased roadbed widths, resulting both from a change in management philosophy away from favoring a minimum-standard facility to a rail line comparable with those of the CNR and CPR, and from learning about the requirements of the soils found on the construction sites; and 3) a desire on the part of the B. C. Railway engineering team to learn from and avoid the errors of the Fort Nelson Extension. In the latter case low construction standards had lead to huge maintenance costs. The **Fisk-Fox Report** (Dec. 1973) questioned the economic feasibility of changing a railine from a minimum standard development railway to the standards necessary to carry heavy resource loads. It stated that the concept of frontier
rail construction in which the railine is first built to low standards and then upgraded "is no longer adequate, even in development lines. ... the rules have changed." In more detail: "it is uneconomical to cut initial costs on some items - alignment, gradients, subgrade, drainage and bridges - because these are not easily changed. ... rails, ties and ballast are items which can easily be upgraded." 19

In addition, Indian groups protested the lack of an agreement between the B. C. Railway, the federal and provincial governments, and the Indian tribes through whose reservations the rail line passed. Substantial cash and territorial demands were made, and a blockade of the rail-line was threatened. Other complaints related to stream diversion and sedimentation, and the effects on wildlife populations of increased hunting which was expected to result from the access afforded by the corridor.

In response to growing public and agency criticism of the environmental damage the extension was reported to be causing, B. C. Railway Chief Engineer Michael Wakely explained his, and presumably the railway's view on the situation:

"We're very conscious of the environment: we certainly have no intention of coming out here and deliberately destroying it. We welcome the forestry and fisheries officials coming in here - they helped put more muscle into the policing of the contractors. We don't think we're doing all that much damage. If we're going to open this country up for people ... we've got to make certain sacrifices in the environment ... after the

vegetation takes over again there will be very little damage."^20

Wakely explained that the majority of the difficulties arose because of the way in which the route alignment had been chosen - from maps and from limited aerial surveys, with little or no ground reconnaissance. The particular route which had been chosen resulted in long stretches of construction through areas which had inappropriate submaterials for railbeds. The lack of pre-engineering meant that the on-site engineers were unable to anticipate problems (such as a preliminary survey vertical misclose of over 30 metres) and so make allowance for them. But Wakely maintained that "from an economic point of view, this is the cheapest route we could have selected."^21

In 1973 an agreement was signed between the federal and provincial governments such that Ottawa would pay a portion of the costs of the extension in exchange for certain running rights for the CNR. Plans were drawn up for a CNR line from Terrace through the Nass Valley to Meziadin Lake and to join the Dease Lake Extension near Suskeena, but this was stalled for economic reasons and due to opposition from the Nishga Indian band. Meanwhile, construction continued, amid lawsuits from disgruntled contractors and continuing opposition to the extension on environmental grounds from many quarters. Estimates of the cost necessary to finish the line rose from $68

^21 ibid

Yet another report, this from the Swan-Wooster Engineering firm, was released in January 1977. It castigated the railway for proceeding with inadequate pre-engineering studies, and declared that collapsing a normal four-step process of route selection, location design, detailed design, and construction into a three-step process in which detailed design and construction are coincident was very unwise, even though some time and interest charges might be avoided. "The savings in interest may well be offset by increased construction costs resulting from lack of preliminary engineering." The report warned that the realities of construction, which should emerge during detailed design, only became apparent during construction.

By the time the McKenzie Royal Commission into the B. C. Railway had been appointed in January 1977, the cost estimate to complete the Dease Lake Extension had risen to $264 million. When construction of the extension was halted on April 5, 1977, because of excessively high costs and lower than predicted potential carriage volume, the estimated completion cost had risen to $310 million. At this time, some 2 years after the originally projected completion date, track had been laid on only about 2/3 of the total distance.

Some complaints regarding the necessity to complete the

railway as a commodity transportation link were made by logging and mining companies with interests in the region, but the management of the only large-scale operating mine, the Cassiar Asbestos Corporation, maintained in its submission to the McKenzie Royal Commission that whether or not the extension was finished, "Cassiar would want to reserve its right to choose the most economic routes to get its fibre to market, and to maintain at least two alternative routes for this purpose." Thus there were still no guarantees of business, even from those who maintained that the link was essential. Poor world markets for both metal and forest products in the years 1974-77 had resulted in very little development of any type occurring in the region during that time.

In its report, the McKenzie Royal Commission discussed why the extension was started, and some of the reasons the project became untenable.

Reasons for building the Dease Lake Extension:

"The principal force behind these immense undertakings was the unchallenged conviction that railways are, and always have been, the key to opening up the country, stimulating investment and generating resource revenues."

"The railway was seen as a 'development tool.' This is not a precision tool, made to fit a special bolt, but an all-purpose instrument thought by optimists to be capable of opening everything that is closed, including minerals locked into the ground and remote forests far removed from economic exploitation."

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23 'Forest, Mining Firms Fight for Dease Line', Vancouver Province, Jan. 17, 1977.
24 MacKenzie Royal Commission, Volume II, Chapter 4, p.2
Some of the problems:

"No doubt there has been a consistent tendency on the part of our politicians to substitute assertion and exaggeration for patient argument ..."26
"It seems clear that the B. C. Railway took on the Dease Lake ... with inadequate staff and very limited experience."27
"We cannot ascribe all the construction complications to inadequate engineering or any other single factor ..."28

3. Omineca Mining Road

The Omineca Mining Road was originally built in the 1930's to provide access to gold placer deposits in the Manson Creek and Germanson areas. This was completed in 1939, and from that time the road was maintained at minimal standards and cost by the B. C. Ministry of Mines. In the late 1960's it appeared to officials within Mines that a lack of surface access might be inhibiting exploration in the region north of Germanson Landing.29 Since one role given the Ministry of Mines and Petroleum Resources is to provide access to areas of 'significant mineral potential' to facilitate exploration, it was decided to extend the Omineca Mining Road northwest to link with the Stewart-Cassiar Road near the juncture of the Klappan and Stikine Rivers.

26 MacKenzie Royal Commission, Volume II, Chapter 3, p. 32.
27 MacKenzie Royal Commission, Volume II, Chapter 4, p. 82.
28 MacKenzie Royal Commission, Volume II, Chapter 4, p. 85.
29 For instance, AMAX Exploration Inc. urged extension of the Road to the "mineralised eastern flank of the Omineca basolith" in a letter to the B. C. Ministry of Mines dated Sept. 8, 1969.
An invitation from Mines to the (then) Forest Service to share the costs, responsibility and use of the road was refused because of low forestry values and a limited fire hazard in the area accessed by the project.\footnote{Letter from K. B. Blakely, deputy minister of B. C. Ministry of Mines to K. S. McKinnon, deputy minister, Forest Service, Ministry of lands, Forests, and Water Resources, Apr. 2, 1969. Reply from McKinnon to Blakely, April 10, 1969.}

The extension of the road started in 1971, and concern was immediately expressed by the Forest Service regarding a lack of sensitivity to environmental factors by the contractor.\footnote{Complaint about the lack of proper slash disposal was expressed in a letter from R. Gibbs, Ranger, Forest Service, to H. Bapty, Roads Engineer, B. C. Ministry of Mines, May 14, 1971.} A feeling of annoyance by Mines officials at the outcome of their communications with the Forestry Service would be understandable, as it had resulted in first, a refusal of cost sharing and other co-ordination, second, complaints regarding the construction standards employed, and third, the sale by Forestry of timber rights that could only be accessed by the road. As harvesting of the timber occurred, the condition of the road deteriorated to the extent that mineral exploration companies claimed that they were unable to move heavy machinery over it to the areas it was built to access. Clearly, interagency communication on this issue had not been spectacularly successful for the B. C. Ministry of Mines!

The initial extension from Germansen Landing to Aitken Lake followed an existing winter 'cat-track'. A consultant (Ripley, Klohn, and Leontoff International, Ltd.) was hired in 1972 to
plot a suitable corridor location for the section between Aitken Lake and Johansen Lake. Opposition to the road extension became greater at this time. Opponents included prospectors, environmentalists and sportsmen, who claimed that the road was not economically optimal or even necessary in order to encourage exploration, that the location was extremely bad from a environmental protection viewpoint, and that the construction standard was very low. Proponents of the road were Mines Ministry officials and mining companies who maintained that the existence of the road decreased exploration expenses considerably.

In early 1973, the Fish and Wildlife Branch noted that this project, among others, required for proper planning "inter-resource planning where environmental matters are concerned," but also that there was "insufficient personnel in several Resource Departments to handle the volume of both field and office work entailed in multiple referral work." Nonetheless, at this time efforts were being made at high bureaucratic levels to establish a co-ordinated planning process for mining road construction. The Fish and Wildlife Branch requested that a notification and consultation procedure be implemented in order to ensure some input by them to the planning process. Fish and Wildlife suggested that they could give "expert advice on what steps might be taken to minimise disturbance of fish and wildlife..." It was also stated that the Branch "in certain

32 Letter from R. Goodlad, Regional Superintendant, Fish and Wildlife Branch, to Mr. Lewis H. Clarke, March 12.
critical situations ... would want a significant re-routing or even deferred construction, temporarily ... or ... permanently." The response from the B. C. Ministry of Mines was encouraging: "Your suggestion ... offers no obstacle or objection from ... this Department. ... Your reference to rerouting and deferred construction might cause problems but I am sure that significant impact on fish and wildlife can be minimized by discussion and co-operation." Deputy Minister Fyles suggested that "someone in (the) Fish and Wildlife Branch, who is specifically responsible for the area into which the Omineca Mining Road is entering, should contact Mr. Bapty (the Mines official in charge of the exploration roads program) so that the consultation may begin."

By early 1973, the road had reached Johansen Lake, and further extension was being planned. A geologist working in the area for the Mineralogical Branch of the B. C. Ministry of Mines stated that on the route proposed to Moose Valley "there are many streams, and a number of marshy and boggy areas. ... good road construction material did not appear to be too plentiful." The engineer on the road construction location urged that if a geologist from the Ministry was not available "consideration should be given to hiring a geologist to make the

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35 ibid
36 Letter from W. B. Montgomery, Resident Engineer, to H. Bapty, July 17, 1973
survey and mapping."\(^{37}\) The ministry geologists were not made available for this work, and it appears that the superficial geology of the area was only scantily investigated on the ground, the road location being plotted primarily from aerial photographs.

A memo prepared within the B. C. Ministry of Mines at the end of the 1973 construction season, describing the history and the projected future of the Omineca Mining Road, stated that it was expected that by 1980 the road would be completed to the Klappan River, northwest of Spatsizi Park. In addition, five cross connections between the Omineca Mining Road and the Dease Lake Extension were mentioned - in short, the region was to be quartered, and in the eyes of naturalists, also hung and drawn. Consultation on the route chosen for the road - through Moose Valley - was stated to have included a Mines Inspector and a prospector.\(^{38}\) While consultation with the Fish and Wildlife Branch may have occurred, there is no record of any. By the end of the 1973 construction season, the road was stated to be "completed to a point near Moosevale."\(^{39}\) A proper survey of the road was seen to be too expensive, and no small pride was shown in the statement: "No other road in British Columbia in a similar location can match our costs."\(^{40}\) The Fish and Wildlife Branch and environmentalists were beginning to agree with the

\(^{37}\) ibid
\(^{38}\) File memo, H. Bapty, undated
\(^{39}\) J. W. Peck, Chief Inspector of Mines, to J. E. McMynn, deputy minister of B. C. Ministry of Mines
\(^{40}\) ibid
statement, but not in its intended sense. A mixture of sensitivity to complaints about the road and optimism concerning its worth is also apparent: "... we expect one or more major mineral finds to be established which will fully justify this road."¹ This statement indicates that this corridor, like the two discussed previously, was planned and built with a minimum of analysis of the rationale for its existence.

Conflict continued between proponents and opponents of the road. While mining interests emphasised the need for reducing exploration costs, and berated "plans by a few wildlife enthusiasts to 'lock up' large sections of the Province for the exclusive right of a small number of people,"² environmental pressure groups (such as the B. C. Wildlife Federation) deplored the "(desecration of) one or more resources in the development of another."³

Concerning the consultation and co-ordination procedures between the B. C. Ministry of Mines and the Fish and Wildlife Branch it was stated that "From a report ... from the Prince George Regional Office of the Fish and Wildlife Branch, they affirm that no plans were submitted for the proposed road construction and (they) have had none to date ..."⁴ Thus, while it is possible that the files from which this story has been

¹ ibid
² Letter from Thomas Elliot, Manager, B. C. and Yukon Chamber of Mines, to Hon. Leo T. Nimsick, Minister of Mines and Petroleum Resources, Nov. 23, 1973
⁴ ibid
compiled may not be complete, or may yet hide instances of
attempted inter-agency co-ordination and contact, the
'notification and consultation procedure' which had so easily
been agreed to the previous spring, did not come to anything. A
lack of consultation may have occurred because Fish and Wildlife
officials believed that the instigating agency (Mines) should
initiate the notification procedure for each instance of road
work, while Mines officials apparently felt that if the Fish and
Wildlife Branch was serious about consultation, then they should
make an effort to keep abreast of all developments.

There appears to have been a very limited degree of
communication and planning co-ordination between the Fish and
Wildlife Branch and private exploration companies concerning the
plans of the latter to construct access routes from the Omineca
Mining Road to claims or ore bodies. This arose both from
pursuit by the Fish and Wildlife Branch of companies which had
been reported to be considering development and from
communications initiated by exploration companies to the Fish
and Wildlife Branch regarding their plans.

In 1974, the Mines official in charge of road construction

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45 A memo (J. Walker to E. H. Vernon, Assistant Deputy Minister
Fish and Wildlife Branch, Dec. 19, 1975) states that Fish and
Wildlife Branch officials "repeatedly asked for specific plans
for the road", but there is no record of any such requests in
any of the files investigated for this thesis.

46 For instance, a letter from I. L. Withler, Co-ordinator,
Habitat Protection, Fish and Wildlife Branch, to Falconbridge

47 For instance, contact made by Kerr, Dawson and Associates,
Ltd., Kamloops, with the Fish and Wildlife Branch in Prince
George, to which Dave King, Regional Habitat biologist, replied
on Jan. 11, 1974.
stated that "construction ... should be completed to Moosevale Creek and airstrip in 1974", and that "traffic on the road is surprisingly heavy, mainly tourists. Mining exploration is brisk, and while main transport is by air, heavy hauling is via the Omineca Road."  

A patrol of the Omineca Mining Road by Fish and Wildlife officials in late summer 1974 found several fisheries related problems arising from the stream crossing methods employed:  
1) in spring and fall culverts were obstacles to fish passage, by being placed too high or low in relation to the stream bed, or being too small,  
2) culverts that are unprotected or too small yielded large quantities of silt which were believed to reduce the utility of spawning habitat.  

It was stated further that  

"It appears that construction is scheduled for branch access roads to various ore body locations. We have had no information via departmental channels concerning branch road construction, or ... regarding the construction of the main road north to its present location.  

"The credibility of the interdepartmental process is seriously questioned when ... development financed by government proceeds with little or no referrals."  

However, awareness of environmental values was both claimed

\[48\] Preliminary Report, Omineca Road, P. E. Olson, July 3, 1974.  
\[49\] G. R. Chislett, Regional Fisheries Biologist, to Roger Goodlad, Regional Director, Fish and Wildlife Branch, Prince George, Sept. 4, 1974.  
\[50\] P. E. Olson to J. E. McMynn, Jan. 6, 1975.
by the Mines official in charge of Exploration Roads program and also indicated in stated planning priorities:

"I suggest we emphasize the construction of trunk roads and de-emphasize the construction of branch roads, at the same time encouraging the use of helicopters for access to mining exploration. This idea conflicts with the use of bulldozers for trenching, which, in many cases, should not be permitted because of disturbance, etc. Should exploration be successful, then a well engineered road could be built and we should assist at this stage. I am reasonably sure that Fish and Wildlife as well as Forestry would encourage this concept of discouraging some of the exploration roads in the Province. The alternatives to using heavy machinery for exploration may be unpalatable in some cases so we would have to keep an open mind on this matter."

The level of complaints rose in late 1974 and early 1975 regarding the manner in which the Omineca Mining Road was being planned and constructed. As a result, a series of meetings of the Environment and Land Use Committee Secretariat, subgroups of it, and the Regional Resource Management Committee were organised to investigate the situation and make recommendations about it.

During 1975 the majority of the work on the road was maintenance and repair to reduce its environmental impacts, but some construction also occurred. An interagency task group in the Omineca Peace Region which was established by ELUC in May 1975 recommended in October of that year that the road be terminated at Johansen Lake and the roadbed be stabilised beyond that point. However, in what appears to be a slight change of

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heart, the Regional Resource Management Committee notified ELUC at the end of 1975 that its members did not oppose the Omineca Mining Road on principle, but requested that the construction standard be raised. If there were insufficient funds for suitable construction techniques and standards, then it would be better, in their view, to upgrade the existing road before extending it.\(^5^2\)

Disagreement regarding the impacts of the road on the environment continued, and relations between the B. C. Ministry of Mines and the other government agencies became very sour. Mines officials claimed that the amount of siltation produced by the road was negligible, as were wildlife resources in the area. Statements to the contrary by Fish and Wildlife staff regarding impacts on fisheries resources by the road were termed "irresponsible" by Mines,\(^5^3\) and this rather antagonistic viewpoint was supported at the deputy minister level. In addition, it was stated that efforts to solicit planning input for the road from other agencies had in the past been frustrated by their lack of co-operation and the absence of a co-ordinating body such as ELUC. (Mines did, however, ignore the recommendations of this body, which now existed.) The Omineca Mining Road was stated to be within ministerial policy, and effective in encouraging mineral exploration. It was admitted that the mineral prospects on which work was currently being

\(^{52}\) H. K. Boas, Chairman, Omineca-Peace Regional Resource Management Committee, to A. Crerar, Director, Environment and Land Use Committee Secretariat Secretariat, Dec. 23, 1975.

\(^{53}\) Omineca Road, P. E. Olson, Nov. 3, 1975.
done had all been discovered by air, but it was stated that some had since been connected to the Omineca Mining Road by rough tote road in order to facilitate ore body delimitation.  

An ELUC report questioned whether the decreased cost of exploration came close to balancing the cost of building and maintaining the road. If not, and ELUC claimed this was the case, a better means of subsidising transportation costs for mining exploration might be sought. More importantly, ELUC doubted that this aspect of exploration costs had a significant effect on the extent of the exploration for and the finding of exploitable deposits. The report concluded with an attack on personalities with the B. C. Ministry of Mines:  

"There are some individuals in the Department of Mines, who do not appreciate the criticism which has been levelled on the Omineca Road project. They do not consider the project to be causing any serious impact on the environment; they wish to see its continued extension; they appear to view much controversy over the project as needless badgering.  

"Yet though it may not be recognised by these persons, the environmental damage which has been caused by the Road is substantial and well documented by the Fish and Wildlife Branch. The impacts are on a similar scale to those caused by the B.C.R. and which evoked so much criticism from the public.  

"The benefits of this major project (a 300 mile road must certainly be considered major) are few. The costs, once evaluated, really are significant.  

"The Omineca Road project—throughout its history has been typified by a lack of planning and of comprehensive evaluation for feasibility. it is an example of the type of land use practices which we must get away from in B. C. if we wish development  

\[^{54}\text{Omineca Road, op cit.}\]
to proceed sensibly."

In early 1976 Mines officials agreed that Johansen Lake could be an acceptable terminus for the Omineca Mining Road, and that extension of the road would be subject to ministerial direction and funding. Mines was prepared to "co-operate fully" and provide limited financial aid to the Fish and Wildlife Branch for its monitoring and surveillance activities on the road. The offer of the aid was almost grudgingly accepted by the Fish and Wildlife Branch, and an auxiliary conservation officer was appointed to enforce game regulations and monitor road construction. Yet in his year-end report the Fish and Wildlife official in charge of the road expressed appreciation for the financial help from Mines. He noted that compliance with game regulations had been virtually complete, that few over-winter siltation problems had been seen, and that direct siltation of Johansen Creek was not serious. Hope was expressed that the funding for the conservation officer would continue the following year.

In the early part of 1977, the B. C. Ministry of Mines decided to extend the Omineca Mining Road past Moosevale to Sturdee Valley. This change of plans arose because rising gold and silver prices had made the mining of a deposit in Sturdee Valley feasible, and because Mines felt that during the previous year the "political climate" of the province had become more favorable to mineral development. A consultant was hired by the Environment and Land Use Committee Secretariat, Jan. 14, 1976.
mines to determine a suitable corridor for the new extension and his report was released in April of that year.

Construction continued in 1977, the road being completed to Moosevale. In contrast to the two previous years standards and practices were much criticised. In the latter part of the year public concern was expressed about the anticipated impact of the extension to Sturdee Valley on ungulate and fish habitat and populations. The Mines official in charge of the road acknowledged the problem potential and expressed hope that a solution could be found, but it was clear that a decision not to build the road was not considered a possible solution by him.

The conflict took an almost regional character, with good relations existing between local Mines and Fish and Wildlife Branch staff, but dismay being expressed by non-proponents about the lack of overall control of planning and construction of the road. Because of the seeming disregard for their priorities by the Victoria office of the B. C. Ministry of Mines, Fish and Wildlife officials expressed doubt at the utility of participating in mineral road planning. However, there were signs that the spirit of confrontation might be ebbing: a roadside revegetation experiment to control erosion on the Omineca Mining Road was begun by Mines in 1977, and in the spring of 1978 Mines agreed to a "modified" form of the Guidelines for Linear Development being applied to the road. The modified guidelines included a specification by the Mines Ministry that "... the cost of the planning should be
commensurate with the cost of construction." The note outlining the agreement by Mines went on to state: "This is a low cost, minimal standard road which in the past has been constructed with very little impact on the environment (in spite of vocal criticism from some quarters)."

Mines notified ELUC, the Regional Resource Management Committee, and the Fish and Wildlife Branch in early 1978 that the Omineca Mining Road would not be extended past Moosevale that year but that an airstrip was to be constructed in Sturdee Valley in September. Two large cats would be walked there from Moosevale in mid-August over the route that had been delineated by the consultant and which would become the route used for the road if and when it was built. The Resource Analysis Branch of the Department of the Environment was granted $40,000 by Mines for a survey of the wildlife and recreational impacts of building a road on the proposed route. Although the study would not be completed until September, it would be useful when the road was constructed, perhaps the following year. Mines stated on several occasions that no road was to be built that year, and that the cats would be making as careful a passage as possible. Mines expressed an intention to prohibit access past Moosevale and to close the road at some point between Johansen Lake and Moosevale.

In the summer of 1978 the issue of the existence and extension of the Omineca Mining Road became media fodder, with

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Mines facing a concerted onslaught from the B. C. Wildlife Federation, the Sierra Club as well as government agencies. It was stated that a change in attitude towards the importance of environmental concerns was needed in Mines. The B. C. Ministry of Mines maintained that the Omineca Mining Road was causing no environmental problems, and that the impact on wildlife populations caused by people who used the road was not their responsibility. They built roads to mineral deposits - it was the mandate of other agencies to ensure that people using the roads do not abuse the natural environment. In addition, they restated that the road "conformed to the policies" of the ministry, which was all that had been promised by them to ELUC. Ministry officials expressed dismay at the politicisation of the issue by other parties.

Fish and Wildlife officials confirmed in late 1978 that virtually no traffic was going beyond Moosevale along the cat-track to Sturdee Valley, and that the cats had indeed made very little disturbance in their passage. Although the road was never officially extended past Moosevale, the continued if sporadic use of the unconstructed grade resulted in localised erosion, siltation, and habitat loss. In 1979 and the following years, Mines seeded road verges between Johansen Lake and Moosevale to reduce erosion and upgraded sections of the road to facilitate the movement of heavy machinery. Nevertheless, the road remains rough, and sedimentation continues at above normal rates.

The Mines official in charge of the roads program commented
in 1979 that the Ministry of Mines "wanted to do a tidier job. Our nose has been bloodied in the past." Regarding communication between environmentalists and the Ministry he stated: "We've got no secrets. If we've failed to talk it's because we haven't known each other." With increasing mineral exploration activity it appears that extension of the road to Sturdee Valley is inevitable at some future date.

C. PROBLEMS AND CONFLICT.

As mentioned in Chapter I, at least three levels of planning and decision-making are involved in the corridor development process. The issues, problems and conflicts which were said to have arisen at each level are discussed in this section in order to provide a context for the following sections.

1. CORRIDOR RATIONALE.

In all three instances the decision to build the corridor appears to have been taken on either a political or high bureaucratic level without any apparent overall analysis. The extent of identification by political figures with the decision and the project varied.

a. Stewart-Cassiar Road:

The decision to build the road and then to link it with the rest of the provincial highways system via the Meziadin Kitwanga extension was consistently portrayed as a political decision supported by both the Federal and Provincial governments. The existence of the road was never seriously questioned by public
agencies or private interest groups.

b. **Dease Lake Extension:**

The decision to build this corridor was very prominently linked with both the W. A. C. Bennett and Barrett governments. During its construction, the rationale behind its construction was not questioned publicly by government agencies, and the printed media presented a vision of boundless resources awaiting exploitation in the north west of the province. However, after it was halted it became widely criticised as a costly and failed example of 'Forced Growth'.

c. **Omineca Mining Road:**

Although construction of this corridor was stated to be subject to "Ministerial" direction and funding and in accordance with government policy, it was not directly linked with a political figure or party. The need for and desirability of this corridor was consistently questioned.

2. **CORRIDOR LOCATION**

a. **Stewart-Cassiar Road:**

Interagency communication was inadequate at this planning level. However there was an external (to the Highways Department) study made of the impacts of the selected corridor, and minor alignment alterations were seriously considered and sometimes implemented by the Highways Department. Public involvement included an analysis of the socio-economic impact of the road on a local Indian group (Kitwancool), and other similar
efforts on the part of the planning agency.

b. **Dease Lake Extension**

Limited co-ordination between B. C. Railway and other agencies and the public yielded confrontation on issues that might have been less intense or more easily resolved if earlier communication had occurred between the parties concerned. Information gaps caused problems at the design level which could only be solved by changing the routing alignment, which resulted in great increases in costs. Conflicting stated goals for the corridor (i.e. factors relating to the 'existence' planning level) caused conflict regarding the optimal corridor location.

c. **Omineca Mining Road:**

There was little co-ordination between the B. C. Ministry of Mines and other agencies regarding an optimal or acceptable location for the corridor. Essentially, it was located in accordance with the priorities of the B. C. Ministry of Mines only. The very quick initial construction of the track which was later upgraded precluded consideration of other corridors.

3. **DESIGN AND IMPLEMENTATION**

a. **Stewart-Cassiar Road:**

Very little conflict noted. As noted above, the independent study which was funded by the Highways Department suggested ways by which the environmental and social impacts of the project might be mitigated.
b. **Dease Lake Extension:**

Information gaps and opposition to the environmental impacts of the corridor as originally designed resulted in substantial redefinition of construction standards and redesign of the corridor, and associated higher costs and later completion time.

c. **Omineca Mining Road:**

There was great conflict between the proponent and opposing agencies and the public, regarding information relating to the existence of resources in the corridor and impacts of the construction on them. There was also conflict relating to construction philosophy and practices: the construction of a minimum standard track which is then upgraded was claimed to be very costly to natural values.

D. **COMMON PROBLEMS.**

There are several classes of problems common to the three corridors. The problem types discussed in this section are those which appear to have been most discussed at the time of corridor construction in the printed media, in interagency memoranda, and in communications between agencies and the public. Thus this listing of problems is essentially an identification of expressed public and agency concerns at the
time of corridor construction.  

1. INCREASED TIME FROM PROJECT START TO COMPLETION.

i. The Stewart-Cassiar Road was started in 1952 to provide access and egress for the Cassiar Asbestos operation. In 1956 the Minister of Mines was already required to respond to questions relating to the fact that the road had not yet been completed. Only in 1972, was the road finally completed to a gravel finish.

ii. When the Dease Lake Extension was approved in 1969 it was intended that it be constructed as quickly as possible, to be finished in 1975. When construction was halted in 1977, track had been laid on only two-thirds of its projected length.

iii. The Omineca Mining Road was an ongoing program, with no specified date of completion or locational goal. It is difficult, therefore, to state the exact dimensions of the problem with respect to this

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57 Since the public and agencies which were not the direct proponents of the project were to a very large extent unaware of much of the information which could have been generated and communicated, this listing of problems is incomplete. Other problems might have included: a low (i.e. less than one) benefit/cost ratio for the project; the lack of consideration given to alternative resource uses during initial planning phases, and so on.
project. Nevertheless, the construction of the road was slowed considerably because of public and agency opposition, and the road never reached Dease Lake, its original goal.

2. **INCREASED COSTS.**

Even allowing for the effects of inflation, the increases are significant.

i. The cost of the Stewart-Cassiar Road increased from an initial estimate of $5 million to $30 million spent when completed, a 500% overrun.

ii. The estimated cost of completing the Dease Lake Extension rose from $68 million in 1969 to $310 million in 1979, an increase of 356%.

iii. The cost of building the Omineca Mining Road remained a matter of much debate. Opponents of the project claimed that initial construction practices were kept to an inexpensive standard in order to thwart complaints regarding this factor, but that this would greatly increase subsequent maintenance costs. In addition, it was claimed that externalities such as the changed value of wildlife and wilderness resources which resulted from the construction techniques should

It should be noted that although the problems apparently came to the notice of the agencies and public concerned only at the time of construction, many of the problems had their origins at higher and earlier levels in the planning process. A lack of communication between the proponent agency and other agencies and the public resulted in the fact that problems which originated in an early planning phase were recognised only in the final implementation phases of the project, when options which might have been available had been largely foreclosed.
be included in any consideration of the costs and benefits arising from the project.

3. **ENVIRONMENTAL IMPACTS.**

These included direct impacts, such as stream siltation, and indirect impacts, such as increased hunting resulting from increased access to the areas concerned and resulting in changes in local wildlife populations.

i. The Stewart-Cassiar Road facilitated access to wilderness areas, and so promoted over-exploitation and depletion of the fish and wildlife resources in those areas.

ii. The Dease Lake Extension permitted similar exploitation-related problems. In addition, impacts arising from the location of the corridor and the construction practices and standards were identified and became cause for complaint.

iii. The Omineca Mining Road was identified as causing the same types of impacts as the Dease Lake Extension.

4. **CORRIDOR HAS NO PURPOSE.**

The planning process briefly outlined in Chapter I is stated to be iterative and recursive. What this means for the purpose behind a project like a transportation corridor is that the purpose itself must be continually re-evaluated and if necessary changed as the planning process proceeds. If it appears under the light of information that has been gained during planning that the original purpose is for some reason
unreasonable or unattainable, then a new purpose must be developed that can be logically supported by the information that is available or the project should be abandoned.

In the cases of these three corridors, however, the original purpose does not appear to have been the subject of objective scrutiny, either before or during planning and construction. The failure of two of the corridors to have any widely recognised and cost-effective use is then not a surprise. Rather the surprise is that the Stewart-Cassiar Road has had a use - even if its cost-effectiveness has been disputed.

i. The Stewart-Cassiar Road was built to provide transportation access for the existing needs of the Cassiar Asbestos operation, and to encourage resource and industrial development in the north west of the province. The route was 20 years in the making, but even when it was completed in 1972 the Cassiar operation chose not to use it and there were no other major industrial users. Although at this time (1983) the Cassiar Asbestos Corporation uses the route its major usage remains touristic.

ii. The stated purpose of the Dease Lake Extension was to make possible 'the dynamic development of resources and communities' in the northwest of the province. Because the extension was not completed it is difficult to evaluate precisely the extent to which this purpose would have been achieved. But it may be noted that even in 1977, two years after the initially
projected completion of the railway, there was still no guarantee of significant traffic. Even the Cassiar Asbestos Mine, which claimed that the extension was essential to its business, refused to commit itself to using it.

iii. The degree to which the Omineca Mining Road increased mineral exploration and exploitation in the area which it was built to serve is problematic at best. Between 1970 (before the road was built to the area) and 1980 there was an increase in active claims and operating mines in the area. However it could be argued that this change was more a result of the rise in the price of gold than the provision of access to the area, since virtually all of the claims are oriented towards gold production, and all of the operating mines are gold producers.

E. PROBLEM ANALYSIS.

A commonality of perceived problems has been identified with the projects. These problems relate to planning efficiency, the logic and validity of the project rationale, and to the environmental impacts of the construction and use of the corridors. The problems are further analysed in this section in order to determine their underlying origins within the planning and implementation process.

The analysis and discussion is oriented primarily towards those levels of the process which determine the route location and design of the corridor. The decision to build a major
corridor, which is most properly made at the political level, is not discussed at length because it involves many factors which are different from those relevant to the routing and design levels. However, the construction approval decision should at least be informed by the process which relates to the environmental and social elements of the proposal and which forms the basis of the routing and design level decision factors. Therefore the factors which are determined and discussed for the routing and design levels will to some extent be relevant to the project approval level of corridor planning.

Before analysing the problems which were perceived in relation to the corridors studied, it is necessary to describe with greater precision the dynamics of a planning and decision-making system in what may be described as an "open" and democratic society.

1. PLANNING AND DECISION-MAKING SYSTEMS.

Every system has some sort of output, and one output of a planning and decision-making system is expected to be a decision of some sort, perhaps within a set period of time. There may also be other outputs, such as conflict and costs, but the output which defines a planning and decision-making system is the fact that a decision emerges from it. The exact combination of outputs (i.e. the nature of the decision with its attendant costs and conflicts) is a function of the inputs to the system and the identity, arrangement and efficiency communications between subsystems (i.e. the system dynamics).

A planning and decision-making system is composed of a
number of individuals and groups (a group may be viewed as a subsystem of the larger system which may reach its own decisions, inflict its costs and experience its own conflicts). The dynamics of the system involves the communication and weighing of information. The information involved will relate to the "factual" elements of the issue at hand, and to normative factors of the individual actors within the system (Deutsch, 1974). "Factual" information may pertain to the biophysical environment, the expected financial costs and benefits of the project, and so on. "Normative" information will pertain to the values and interests of the participants in the system, and also to their perceived and real ability to have their values and interests respected by other participants. Finally, the actors will communicate their individual perceptions of the impact of the project on their values and interests.

As stated above, the outputs of a system are determined by the inputs and the system dynamics. Since the inputs to a planning and decision-making system are both "factual" and "normative" the range of individuals and groups which participate, and their abilities to generate information and prepare it for communication will affect the inputs and therefore the outputs of the decision system. Similarly, the abilities of participants to communicate information regarding their values and objectives, to pay transaction costs, to be able (or to seem to be able) to impose burdens or confer benefits on other participants, and to perceive and institute changes in their own objectives upon receiving and evaluauting
information of various types from other participants will form the dynamics of the system, and will therefore partly define the system output (Deutsch, 1971; Deutsch, 1974).

The planning and decision-making system, as described above, approximates an organisation of groups and individuals who are, together and within some explicit and implicit organisational context, searching for an appropriate plan. Deutsch (1967) has written that "It is communication, that is, the ability to transmit messages and to react to them, that makes organisations. I believe that where public resources are directly or indirectly involved, and the decision process is occurring in an "open" democratic society, the organisation should be representative of the society as a whole. In addition, I believe that there are several requirements which will make the process acceptable within our societal framework. If the process is acceptable, then the outcome may also be expected to be approved by a majority of those involved in the system. I believe the following features to be necessary in such a process:

a) legitimate participants should include public agencies whose mandated responsibilities may be affected by the proposal, and private groups and individuals who perceive the proposal as affecting their interests and/or values. In instances in which it is difficult to have every individual or group participate actively, an effort must be made to ensure that every interest and value is represented in some way in the system.

b) legitimate participants should have sufficient resources to
generate information and prepare it for communication to other participants, and to cover other transaction costs.

c) the output (i.e. the decision) must be subject to the control of officials who are accountable to the public, and preferably directly accountable to a defined public in a specific manner. In this way, the affected public has some measure of control on the process and its outputs.

These requirements should ensure that a wide range of information is available to the planning and decision-making system and that no group within the system can control its dynamics. It also explicitly places the proposal and its planning and decision-making system within a larger societal and political context. I do not propose to further discuss the political elements involved in this system, but their place in it should not be forgotten.

Following from this, several ways by which the inputs and dynamics of a planning and decision-making system can be sub-optimal may be postulated:

i. **Inputs** - information relating to what may be termed the "factual" aspects of the inputs (i.e. biophysical, economic and other similar information) may be uncertain, unavailable, or subject to dispute between actors.

   - representation of values and interests may be severely limited by a real lack of representation of certain interest groups, by some groups not being able to generate and prepare information which is important
to their "case", and by permitting only one interest group to define the problem which is to be the subject of the system (e.g. by using an agenda which has been formulated by only one interest group).

ii. **Dynamics** - communication between participants may be difficult, incorrect or impossible because some participants may not be able to cover the necessary transaction costs.

- communication may be difficult or "lop-sided" because one party or group can confer great benefits or burdens on other groups which have little ability to reciprocate.

- communication between participants may be difficult, incorrect or impossible for psychological reasons. For instance, some participants may not be able to comprehend that values different from their own are not only real for other individuals, but may be as deeply held and as well based in logical thought as are their own.

- a means of ensuring that the decision is subject to the control of officials accountable to the public may not be developed.

2. **ORIGINS OF THE DEFINED PROBLEMS WITHIN THE PLANNING AND DECISION-MAKING SYSTEM.**

Each of the problems identified previously was explained in the terms in which it was discussed in the media, memoranda, and other communications used in the generation of the case studies.
In this section each of the problems is factored to determine common origins within the planning and decision-making system which together provide a logical framework that explains the generation of the problems. This will facilitate the determination of ways by which the problems might be avoided in future projects.

a. Increased Time.

An increased construction period for the Dease Lake Extension resulted from changes in the project design arising from a) changes in the desired technical level of the project made at the political level and arising from altered project objectives, and b) changes in the necessary technical level of the project demanded by environmental factors discovered only on the project site or imposed during construction by agencies (such as Environment Canada) having the authority to enforce them. The same factors affected the Stewart-Cassiar Road, as it changed from a minimum standard mining access road built by the Ministry of Mines to a portion of the provincial highway system built by the Ministry of Highways. Similarly, construction of the Omineca Mining Road was complicated by interference and demands by government agencies and the public.

Increased time can be seen to have had a positive feedback effect. As the construction time lengthened, other factors had more opportunity to change: thus public attitudes to a project could, and did, alter during the
course of the project; changes in the political situation also had their effects on the project design and objectives. It is possible that if the corridors had been built very quickly, agency and public opposition to them would not have developed until after they were well in place.

The origins of this problem are:

i. Incomplete information regarding the biophysical environment. This resulted from scanty preconstruction surveys.

ii. Incomplete information regarding public preferences of use relating to the areas concerned and the impacts on them emanating from the construction and use of the corridors. This arose from the assumption by the proponent that it could ignore other agencies and individuals - i.e. the failure to involve legitimate actors as I have defined them.

iii. The lack of established procedures by which communication could be facilitated between differing groups. This resulted in time delays because problems which might have been avoided or fairly quickly resolved through efficient communication were not. In addition, changes in public and other attitudes and in the likely utility of the corridor could not be readily included in the system. Thus a process of communication between legitimate actors was not established.
b. Increased Costs.

Increased costs on the Dease Lake Extension resulted from inflation, changes in the project design standards, and unforeseen construction problems.

In essence, then, increased costs can be defined as resulting from the same three classes of factors as did increased time:

i. incomplete biophysical information;

ii. incomplete value and interest representation; and

iii. lack of efficient communication between project proponent and other agencies, groups and individuals.

c. No Realistic Formulation Of Project Objective.

This arose because of a failure to consider all of the factors that could affect the realisation of the projected corridor use, and an uncritical acceptance of belief as fact. In these cases, the external factors were: world commodity demand and prices, and the freedom of individual firms to develop their resources at their own preferred time-table and ship them by the route they choose. The beliefs of project proponents concerning the impact of a corridor on the natural environment or industrial development were treated as laws of nature.

Another cause of this problem appears to have been that the stated purposes of a corridor were not all of the de facto purposes.

This problem, then, had two origins:
i. information relating to the factors which would determine the future utility of the corridor was not available; and

ii. information relating to the factors which would determine the future use of the corridors was not rigorously assessed, either as to its availability or as to the conclusions that it would support. One reason for this was that some actors in the planning and decision-making system were not capable of perceiving the necessity to subject their preconceptions regarding the utility of the corridors to logical analysis, or for one reason or another they were not receptive to information that indicated that the objectives of the project were unrealistic.

This factor, i.e. project rationale, relates to level of decision making at which it is decided to build the project or not. As I have stated earlier, I do not discuss this level of planning and decision making in any depth, but I do wish to note that the origins of the problem within the larger planning and decision-making system are similar to the origins of the other problems.

d. Environmental Impacts.

The occurrence and identification of undesirable environmental impacts resulted because:

i. there was little information regarding the biophysical environment and the likely effect of a corridor on it;
ii. the significance (and perhaps the changing significance) to the public of environmental effects was misperceived by the project proponent. This was an information gap which resulted from a communication problem.

iii. no means which was acceptable to a majority of the interests who wished to be represented in the planning and decision-making system existed to overcome deadlocks between differing perceptions of impacts.

3. THE IMPLICATION OF THE PROBLEM-ORIGIN ANALYSIS FOR THE DESIGN OF PLANNING AND DECISION-MAKING SYSTEMS.

The analysis of the previous sections has indicated suboptimalities in each of the key elements of the planning and decision-making systems for the linear corridor projects studied. It is clear that one means of reducing conflict relating to the construction of such projects would be to improve the planning and decision-making system used.

In essence, it appears from this analysis that the improvements would involve the following:

i. ensuring the use of all available (or reasonably obtainable) and relevant biophysical, economic and other similar information, and specifying what information is uncertain, contested or not available;

ii. ensuring the representation in the planning and decision-making system of interests and values other than those of the project proponent. Preferably all legitimate interests and values (as previously
defined) should be represented.

iii. facilitating the communication of differing values and interests between actors, for instance through their expression of perceived corridor impact and the logic underlying the perception; and

iv. including in the system some means of overcoming deadlocks, and eliminating or explicitly addressing instances where the achievement of its objectives by one group will incontrovertibly stop another group from achieving its objectives.

The improvements consist of alterations to the two aspects of the planning and decision-making system which have been discussed: inputs and dynamics. The inputs are altered by widening their range and making their nature clearer (i.e. their certainty and whether "factual" or otherwise). Widening the range of inputs involves opening the system to participants who might otherwise be barred from involvement and also aiding participants to become more effective in their involvement.

Alterations to the system dynamics involves improving the efficiency of communication between participants and instituting a means of addressing conflicts and deadlocks that is acceptable within the context of democratic society.

In the next chapter I review some of the recent relevant literature on conflict management to determine how supportable from that basis these conclusions are.
III. A MODEL OF CONFLICT MANAGEMENT.

A. INTRODUCTION

Theories regarding the origins of conflict are various and conflicting. They include the beliefs that the ability to be aggressive in certain situations is an innate (and perhaps genetic) capacity of the human species (e.g. Ardrey, 1966, and Lorenz, 1969), and that conflict is socially derived, either because society needs conflict in order to change, develop and innovate new values and behaviour (e.g. Coser, 1971; Dunn, 1971) or because of a fault in the social system (Marcuse, 1968). The reality of conflict generation may lie in all of these hypotheses, and many others besides. What appears to be clear is that there is some potential for conflict in every aspect of every society (Likert & Likert, 1976; Fox, 1982).

Since conflict may be useful or even necessary, it might not be wise to attempt to continually avoid its evolution (Coser, 1971). Rather, the best approach may be to recognise conflict as an integral part of the progress and being of humanity, and attempt to limit its growth to levels at which it may be creative, but ensure its dissipation at levels below which it can be destructive or costly (Dunn, 1971).

Being able to predict conflict situations and guiding their evolution and bases to be explicit might result in the achievement of more creative solutions than might otherwise arise. A method of approaching and guiding conflicts relating to the environmental impacts of linear transportation corridor
route selection and site planning in Northern regions is
developed in this chapter. Since environmental conflicts are
similar in many ways to other types of conflict (Wehr, 1979), I
believe that the method described in this chapter will also be
useful in other situations.

B. EXISTING MODELS OF CONFLICT MANAGEMENT AND RESOLUTION.

Various ways of addressing conflict have been developed.
Wehr (1979) suggests that currently the three most often used
methods are "legal regulation", in which a consensus exists
between opponents regarding the standards used to judge what the
method of settlement is to be; "deterrence", in which threats
are used by one more parties; and "bargaining" or negotiation,
which involves give-and-take. While this distinction may be
accurate in certain well-defined situations, it is artificial,
for in most conflict situations all three elements are present:
a consensus regarding standards will ultimately arise, whether
the standards are teeth or wit; threats of some kind underlie
every conflict situation; and some element of bargaining occurs
in every situation but those involving maniacs.

Approaching the question from a different angle, Fox (1982)
states that individuals, agencies (public or private) and
governments often try to limit conflict by controlling
information about the situation that most people who might
oppose a project will know nothing about its planning or
potential until it is too late to substantially affect the
outcome of the plans which have been made.
C. RECENT THEORETICAL MODELS OF CONFLICT MANAGEMENT.

1. WEHR: IMPROVE COMMUNICATION BETWEEN PARTIES TO A CONFLICT.

Wehr (1979) suggests that several features should be included in a conflict management model in order to free it from the weaknesses of the models he postulated. These features are:

i. an explicit improvement in communication between the conflict parties, perhaps facilitated by a third party. Thus the third party would not judge the issue, as it does in the "legal regulation" model, but would help the parties to the conflict to better understand each other's positions and so be able to define areas of agreement and disagreement.

ii. the generation of trust and credibility between conflicting parties, so that opponents will trust each other to respect the agreements that are made. This may develop by virtue of the improvement in communication.

iii. a perceptual shift with respect to the nature of the conflict and the opponent. This also is likely to be associated with changes in communication, definition of areas of agreement and disagreement, and the level of trust between parties to the conflict.

iv. a move from threat and confrontation towards exchange. Brooks (1976) suggests that as analytical boundaries (i.e. the viewpoint) of the parties to the conflict
are broadened the differences in their analytical outcomes will narrow, and so the need to threaten rather than have exchanges of information and viewpoint will be reduced. Once again, the importance of communication between opposing groups is shown, since it will be likely to broaden the viewpoint and awareness of each group.

Wehr does not make any suggestions as to how these features can be accomplished  

2. FOX: OPEN THE PLANNING PROCESS TO ALL INTERESTS.

Fox (1982) states that the intensity and overall amount of conflict can be reduced by 1) opening up the decision-making system to everyone who wishes to take part, and 2) providing free access to all available information. Opening the decision process to perceived or identified opponents is usually avoided by the proponent of a project because of the increases in time and cost that such a wider decision process is perceived to involve and the greater probability that his project will proceed in an altered form or not at all. However, Fox states that involving many different interests and values early in the process, and making an attempt to define the areas of conflict and agreement between them will in most cases defuse conflict situations.
3. Lord: Use a Taxonomy of Conflict Types.

Lord et al (1979) use many of Wehr's concepts and practical suggestions in the development of a conflict-management model in which the definition and evolution of analytical viewpoints of the opponents and the facilitation of communication between them are essential components. Lord suggests that using a taxonomy of conflict types can be useful because dividing a complex situation into its components may facilitate analysis of its derivation and dynamics, and so aid its management. The taxonomy he suggests is three-fold: 1) cognitive conflict; 2) value conflict; and 3) interest conflict.

Cognitive conflict arises because of differences in technical judgements. These may be differences in opinion or belief regarding parametric information, such as the existence of fish in streams, or regarding functional relationships, such as the amount of silt entering a stream as a result of certain construction practices at particular sites.

Value conflict stems "from different assessments of the desirability of ends to be accomplished by the action contemplated," (ibid, p. 12). In the case of the Omineca Mining Road extensions, value conflict existed between proponents of economic growth through mineral development, and those who were conservation- and wilderness value-oriented (among others). Lord claims that value conflict "may be seen as an aspect of social learning" in that personal and social values are dynamic. He suggests that by making as explicit as possible the values of opponents in a conflict, and removing or reducing
to a minimum cognitive and interest factors, the opposing value positions will at least be clarified. Then, attempts to form a dialogue\(^5^9\) between opponents may increase understanding, identification and empathy between them and permit an agreement on a course of action to be made. Decisions may have to be made by vote or arbitration, or other project alternatives which do not generate as much value conflict may be sought, if agreement of some sort cannot be otherwise developed.

Interest conflict is generated by differences in the expected effect of a project on the physical well-being of different people. Thus "interests" are a combination of the factual (i.e. physical, financial, and so on) dimension, and the perceptual element, since the perception and personal evaluation of the factual is the most important information used when the effect of a project on one's interests is defined. A particular mineral development may be opposed by an unemployed mine worker who has a vacation home just downstream from a proposed effluent outlet, and supported by an unemployed person who has a home upstream and upwind from the location of the development. In such a case there may be no cognitive or value differences between holders of the two interest sets. Compensation of some sort by "winners" to "losers" can sometimes reduce this type of conflict, but Lord notes that such compensation usually takes the form of making unidentified or unrepresented groups, such as

\(^{5^9}\) As defined by Dunn (1971) dialogue includes the ability of each side to state the opponent's position and the conditions under which it would be valid.
future generations or the wider public, into the class of losers, while everyone who is represented by virtue of his being able to perceive and act on expected impacts on his interests becomes a "winner".

Virtually all conflicts involve more than one conflict type, as defined by Lord, and most involve all three types. Lord suggests that if the conflicting groups can first come to as much of an agreement as is possible with respect to that which should be most objectively and most easily verifiable, such as biophysical information, then cognitive conflict may be very substantially reduced. This is useful for two reasons: first, and most obvious, one aspect of conflict has been addressed, which is the objective of the exercise; second, the reduction and perhaps virtual removal of cognitive elements will make the interest and value elements more easily addressable. Interest conflict will therefore be indirectly addressed in this way, since when some set of objectively verifiable information has been assembled and more or less agreed to, then each party will be able to see more clearly just how his own and other interests are likely to be affected by the proposed actions and developments.

Interest conflict can also be directly addressed in a manner similar to cognitive conflict: by making clear the various interests through explicit statements or "mapping". In this way they can be objectively or subjectively defined, and how they overlap and therefore potentially affect one another can be ascertained from an objective or several subjective
viewpoints. If a development proponent were to have an "interest map" of this sort, it would then be easier for him to determine the other interest groups which could reasonably be expected to desire notification of a development of a certain sort in a particular region. This would facilitate early coordination of the project planning between parties who might otherwise become opponents in a conflict situation. In short, this would help those involved to address interest conflict directly.

Value conflict is much more difficult to address than the other two types. It can only be hoped that by making the cognitive and interest elements more explicit, values might at least become more clearly perceived. This would then mean that each of the parties could more easily state their value positions, and so be better able to enter into bargaining or negotiation.

While this approach does not provide a magic approach for resolving all conflict, it does promise at least to help those involved to address each aspect of a conflict situation in the most suitable manner, and also perhaps to untangle the maze of conflict manifestations. In addition, if Tribe's (1976) claim that one of the central generators of value conflict is a breakdown in discourse between opponents, then starting discussions on the more approachable levels of information and interest may be very useful in re-establishing communication, as was mentioned earlier.
D. SYNTHESIS OF A CONFLICT MANAGEMENT MODEL.

The models discussed in this section may be summarised as follows:

**Wehr:** - increase communication between parties to a conflict;
- increase trust between parties to a conflict;
- use a third party to mediate, but not (at least initially) to impose a settlement of the issue; and
- gain agreement regarding that which can be agreed upon in order to increase the habit of successful communication and trust.

**Fox:** - open the planning and decision-making system to representation from all interests.

**Lord:** - Divide a conflict situation into its cognitive, interest and value components in order to permit resolution of those aspects of the conflict which are most easily resolved, and so that the remaining issues are as clearly defined as possible.

I propose a synthesis of these elements as follows:

1) A mediating agency which is as neutral as possible should be involved in the situation as soon as it is recognised that it is likely to generate conflict. The agency need not, and perhaps should not, have the authority to impose solutions to conflicts that arise, but it should have the authority to force each party to the conflict to take part in a mediation process.

2) Representatives of each major interest group should be involved in the planning and decision-making system as soon as possible. Thus, for instance, there would be representation from opponents to the very existence of the proposed corridor,
and from opponents of its proposed routing and design, as well as from proponents of the project. In addition, there should be representation from groups which oppose and support the corridor or aspects of its design for different reasons. The groups to be represented might be determined by the mediating agency on the basis of its analysis of the types of interests which could reasonably be expected to be interested in the project and its effects.

3) The conflict situation should be analysed into its cognitive, interest and value components. This may be done by first attempting to objectively determine what the cognitive elements are, and defining the most objectively acceptable cognitive facts regarding the conflict situation. The conflict elements which remain may then be considered to be mostly interest and value conflicts. This is discussed below, and elsewhere in the thesis.

4) The interests of each participant, and the impacts of the project on those interests as perceived by the participant, should be defined by the participant and communicated to the other participants as clearly as possible.

5) Discussions of the value differences between participants may be implicitly approached through the foregoing, and especially in the explanation of interests, but some attempt should be made to point out the potential difference between values and interests.

6) Some means must be developed to overcome deadlocks which
arise in this process.60 While not every potential conflict situation and every concomitant deadlock can be overcome in a manner satisfactory to everyone concerned, some attempt must be made to develop a process which at least does not fly in the face of what most of us wish to believe are the "democratic traditions of our society." This means that if those people and groups who identify their values or interests as being involved in a conflict situation cannot develop a solution to the situation among themselves, then the matter should be defined as clearly as possible and refered for a decision to some one or some group which is directly accountable to the public.

1. COMPARISON OF THE CONFLICT MANAGEMENT MODEL WITH THE ORIGINS OF CONFLICT.

The conflict management model synthesised in the previous section has elements which are virtually identical to the improvements in the planning and decision-making system which were identified in Chapter II as being necessary. The elements which arose in each analysis are compared in the table below.

60 The requirement is not that the decision regarding overcoming the deadlock must necessarily be acceptable to all participants, but rather that the method of reaching the decision must be acceptable.
**Comparison of the conflict management model and the improvements in the planning and decision-making system.**

<table>
<thead>
<tr>
<th>Improvements in the planning and decision-making system</th>
<th>Elements of the conflict management model</th>
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<tr>
<td>- ensuring the availability and use of all relevant and available (or obtainable) information, and making clear the information which is not available or is uncertain</td>
<td>- determination of cognitive elements and information</td>
</tr>
<tr>
<td>- ensuring representation of various interests</td>
<td>- involvement of representatives of each interest group</td>
</tr>
<tr>
<td>- facilitating communication of normative information</td>
<td>- the clear communication of interests and an implicit (and possibly an explicit) awareness and an approach to the place of values in the generation and management of conflict</td>
</tr>
<tr>
<td>- inclusion of a facility to overcome deadlocks</td>
<td>- development of an acceptable means by which deadlocks may be resolved</td>
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In addition, the conflict management model includes elements which I feel are essential for the implementation of the above four factors. These elements are the involvement of a neutral facilitator or mediator and the analysis of a conflict situation into its cognitive, interest and value components. Thus, to the extent that a) the conflict origins have been correctly identified, and b) the conflict management model elements are implementable, the planning and decision-making system will be improved by using a conflict management strategy as outlined above.
2. COMPARISON OF THE CONFLICT MANAGEMENT MODEL WITH THE APPROACH APPARENTLY USED FOR THE THREE TRANSPORTATION CORRIDORS.

In this section the conflict management model is briefly compared with the planning approaches which were apparently used for the corridors studied earlier. This both completes the superficial analysis of the model and its potential, and provides an introductory bridge to the next chapter, in which there is a more detailed consideration of the planning approaches (as opposed to the conflict history, which was the subject of Chapter II) which were used for the route selection and design of the Omineca Mining Road.

No distinction was made between cognitive, interest and value information in any analysis during the planning of the three corridors nor was the level of uncertainty of cognitive information addressed except in an adversarial manner. In all cases except the last section of the Stewart-Cassiar Road the information used for the route selection and design of the corridors was that determined relevant and available by the proponent agency.

In only one instance, the Omineca Mining Road, was a "mediating" agency involved in a conflict that developed, but the agency did not have the authority to ensure that agreements were respected by all parties.

Deadlocked conflicts were eventually addressed (if not resolved) at the political level of decision-making. This is proper, for politicians in our society are directly accountable
to the public. However, the conflicts were not referred to the political level for resolution as a normal part of the planning process, the issues of the conflict being well defined or differentiated into cognitive, value or interest derived, and so on. Rather, the politicians became involved in the situation only when one or more parties to the conflict managed to make the matter a political issue of sufficient importance that politicians could not ignore it.

E. SUMMARY.

Through a brief survey of relevant literature a conflict management strategy has been synthesized. From comparison of the strategy with the conflict origins and the planning and decision-making systems used for their derivation, the strategy appears to have some potential for the management of conflict in this context.

In the next chapter I relate in some detail the planning and decision-making system used for the latter part of the Omineca Mining Road and compare it with the conflict management model developed in this chapter.
IV. THE PLANNING PROCESS FOR THE OMINECA MINING ROAD.

A. INTRODUCTION.

In order to demonstrate the potential utility of the conflict management model it is necessary to have a more detailed outline of an existing planning-management system to provide a comparison. In this chapter I describe the planning and decision-making system for the Omineca Mining Road. Although the material in this chapter repeats that of Chapter II to some extent, its orientation is different, for rather than seeking to relate the relevant series and pattern of events as reported by observers, in this chapter I seek to explain the content and pattern of the planning and decision-making system which to a large extent formed the events.

Because the planning efforts by differing agencies and other groups for the Omineca Mining Road appears to have been largely unco-ordinated, the planning processes followed by the two main actors in the situation, the B. C. Ministry of Mines and the Fish and Wildlife Branch, are discussed separately. In addition, the involvement of ELUC is briefly discussed because this agency is in some respects a prototype of the co-ordinating agency described in earlier chapters. Finally, the involvement of the public is briefly discussed. In order to give some focus

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61 The objectives of this thesis do not include the detailed design of a co-ordinating agency, but since the existence of some agent which can act as an independent yet forceful neutral agent appears to be necessary, it is discussed briefly at various points through the thesis.
to this discussion an emphasis is made throughout on one specific area of conflict: the impact of the road on salmon spawning habitat.

B. THE PLANNING PROCESS OF THE B. C. MINISTRY OF MINES.

There is some difficulty in unravelling the reality of the planning approach used by the B. C. Ministry of Mines, because of a divergence between the methods they claimed to use and the actions that they were reported to take. In this discussion, the theoretical approach (i.e. that which was claimed to have been used by Mines) is first set forth. Next, a description of the planning and management approach as gleaned from reports of construction and other actions is formulated. Finally, these two descriptions are compared and a synthesis proposed.

1. THEORETICAL APPROACH.

The Omineca Mining Road was built under the auspices of the Mineral Road Program to provide "road access to assist in mining and petroleum exploration. ... for access to areas of significant mineral potential". 62 This single objective results in a corridor which passes close to a number of known but not delimited mineral deposits. 63 The rationale for building the road is that it reduces the "length of the air freight haul to exploration sites. For some mining properties, it has

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63 ibid, p. 2.
eliminated the necessity of building local short-term access roads by making helicopter access competitive. Thus the benefits are twofold: 1) the cost of exploration is reduced, which increases activity and so reduces uncertainty relating to the existence of mineral resources in the region; and 2) the environmental disturbance is minimised because only one permanent road is built and maintained rather than many temporary routes being constructed and not maintained. So it is seen that the existence of a single objective on the part of the B. C. Ministry of Mines does not preclude consideration of the mandated interests of other public agencies: "In extending the road, Ministry officials have been well aware of the fish and wildlife values in the area and have worked to minimise the impact of the access and adopt construction methods which will reduce the disturbance to streams and vegetation." In addition, in 1978 the Minister wrote that "During the past year ... upgrading and reclamation work were carried out ... from Johansen Lake to Moosevale Creek. The reclamation program consisted of regrading and sloping of disturbed areas on each side of the road, ditching and application of grass seed mixtures and fertilizer. An inspection made in the early part of October indicates that a good catch of grass has been achieved which will assist in stabilizing the road margins."
This work had been preceded by a two year experiment to determine the most effective mix of cover species and fertilisers.

The active involvement of other agencies is stated to be encouraged. It will be recalled from the case study (in Chapter II) that the B. C. Ministry of Mines had attempted to interest the Forestry Department in being involved in the planning (and funding) of the road when its extension was first being considered. Later the Fish and Wildlife Branch was notified that: "Proposals for extension of the road ... may be considered at the 'Prospectus' stage and there has already been considerable interagency discussion of them ... If further planning and route selection is necessary, ... interested agencies must identify the areas of concern and provide the necessary data." The minister stated that route planning involved "a preliminary engineering survey in which a proposed route was selected ... followed by a field study by the Resource Analysis Branch of the Ministry of the Environment to determine environmental, recreational and related impacts that could be anticipated should the road be constructed. ... The Regional Resource Management Committees ... were contacted ... and the program was outlined prior to its initiation. ... The purpose of this procedure is to insure that all factors are recognised before a decision to proceed with the project is made." Some

67 Memorandum from Dr. J. Fyles, deputy minister of the B. C. Ministry of Mines to Mr. B. C. Marr, deputy minister of the B. C. Ministry of the Environment.
68 Letter from J. Chabot to H. L. Peterson, op cit.
experimentation regarding various erosion control measures were undertaken.

There appear to be few limits on the amount of help given other agencies by the B. C. Ministry of Mines: "The ministry should be prepared to assist financially with the management of wildlife in the area through co-operation with the Fish and Wildlife Branch ..." An example of this was explained: "In the 1976 summer season the Ministry paid for an auxiliary conservation officer ... during the hunting season." But the costs of planning and management were explicitly stated to be "commensurate with the cost of construction." The procedure was stated to be successful: "... the environmental impacts resulting from construction of this road are minimal." "This is a low cost, minimal standard road which in the past has had little impact on the environment ..."

The overall validity of the program was stated to be beyond question: on one hand "There is no question that the Omineca Mining Road has conformed to the policies of the Mining Road Program of the Government and has been successful in stimulating exploration and in the development of several mineral deposits with production potential." while on the other "It is not possible to carry out a cost benefit analysis of the extension

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69 The Omineca Mining Road op cit, pp. 5-6.
70 ibid, p. 3.
71 Memorandum, Fyles to Marr, op cit.
72 Dr. J. Fyles in telephone conversation with Les Storey, President of the B. C. Wildlife Federation, March 18, 1978.
73 Memorandum, Fyles to Marr, op cit.
74 The Omineca Mining Road, op cit, p. 5.
of the Omineca Mining Road beyond Uslika Lake. Mineral resource values are still unknown and environmental "losses" cannot be quantified.\textsuperscript{75} In essence: the utility of the Omineca Mining Road is obvious, but it can't be proven.

The approach that the B. C. Ministry of Mines claims to use contains several elements and is based on several assumptions:

i. The goals and objectives of the program relate to a) the reduction of exploration costs, and b) the reduction of uncertainty relating to mineral deposits. This is not considered to be open to question, or even capable of being proven.

ii. Environmental damage caused by the road can be predicted. By using appropriate construction methods and rehabilitation measures the disturbance which occurs can be controlled or stopped. Experiments were performed to determine useful rehabilitation measures.

iii. Planning costs should be a function of construction costs.

iv. Interagency communication is an important aspect of the planning process.

v. Communication with other agencies occurs after potential routes have been selected and to a large extent evaluated with respect to their impacts on factors of primary interest to the B. C. Ministry of

\textsuperscript{75} ibid, p. 3.
Mines.

In comparison with the idealised planning process described in the first chapter, it is evident that the process which the B. C. Ministry of Mines claimed to have used was only weakly iterative and recursive. There was little apparent feedback between information gathered at later stages of the process and earlier decision steps. For instance, rather than site-specific biophysical information being used to suggest alterations of the routing or cancellation of the project, only mitigation measures were considered.

2. APPARENT ACTUAL APPROACH.

There are significant deviations from the approach outlined above and the planning process which is revealed from the Mines ministry and Fish and Wildlife Branch records relating to the planning and construction of the Omineca Mining Road.

i. Although environmental damage can in some cases be predicted using the information that is available, there is very little evidence that any attempt was made to do so. Information that might have been available was not sought out, and information which was counter to the limited goals of the B. C. Ministry of Mines was ignored or contested with little apparent justification. 76

ii. Interagency communication occurred, but was limited to

76 A Discussion of the Costs and Benefits of the Omineca Mining Road, ELUC Secretariat, Jan. 14, 1976.
a) an initial attempt to interest the Forestry Department in sharing the cost of the road, and b) a later exchange of insults between the Mines officials in charge of the Roads program and Fish and Wildlife Branch officials because the extension of the Omineca Mining Road to Moosevale occurred against the wishes and recommendations of other agencies including ELUC,\textsuperscript{77} and an interagency task group in the Omineca-Peace Region.\textsuperscript{78}

iii. Since the road was built without prior consultation with other agencies, the possibility to use available information to determine suitable corridor locations was foreclosed.\textsuperscript{79} On the segment of the road beyond Moosevale an analysis by the Resource Analysis Branch was requested by Mines, but large machines traversed the route it was to investigate a month before the analysis was received.\textsuperscript{80}

iv. There appeared to be an absolute determination by the B. C. Ministry of Mines to build the Omineca Mining Road despite any potential problems that might be identified. For instance, the report by the Mines Rehabilitation Section on their seeding experiments

\textsuperscript{77} Summary of Important Conclusions, A. Crerar, Direstor, ELUC, Aug. 20, 1975.
\textsuperscript{78} Omineca Mining Road Study, Ric Careless, Resource Planning Unit, ELUC Secretariat, Oct. 9, 1975.
\textsuperscript{79} D. King, Regional Biologist, B. C. Fish and Wildlife Branch, quoted in the Caledonia Courier, Fort St. James, July 5, 1978.
\textsuperscript{80} Government Departments Split over Mining Road, by Suzanne Fournier, The Province, p. 33, Sept. 14, 1978.
stated: "The most recently constructed section of the road in the Johansen Lake area contains unstable soils. This, combined with effects of climate at high elevations (1460 metres), makes revegetation difficult."\(^1\) Such apparent problem potentials did not blunt that determination. In fact it was stated concerning the impacts on wildlife resources that could result from increased access that "... the road itself is not the culprit since it is quite passive ... if hunting pressure is too high, ... then hunting along the road should be stopped by hunting regulation, not by forbidding the building of the road. If A. T. V.'s are damaging the fragile tundra, then a regulation against their use would serve to stop this just as well as forbidding the construction of the road."\(^2\)

This brief resume suggests the following elements:

i. Information which did not fit the management hypothesis was ignored or disputed.

ii. Environmental damage resulting from actions of the B. C. Ministry of Mines were considered to be the responsibility of another agency, as defined by the

\(^1\) Omineca Road Vegetation Trials, Inspection and Engineering Division, B. C. Ministry of Mines, January 1978, p. 9.

\(^2\) Omineca Road, P.E. Olson, Senior Inspector, B. C. Ministry of Mines. This statement and the document in which it was contained was specifically approved and circulated by the deputy minister of the Ministry of Mines, J. Fyles.
relevant mandate.

iii. Communication with other agencies was defensive and sporadic, not receptive and responsive.

3. SYNTHESIS.

If it is hypothesized that the divergence between the claimed and apparent management approaches is not generated by mal-intent, a credible explanation is that Mines personnel held a very insular view of their position in the planning, management and use of public resources. This view appears to have included the following elements:

i. The Mines mandate precluded the necessity to coordinate its activities with other agencies or public interest groups.

ii. Nevertheless, communication with these groups was entertained. Communication was not equated with dialogue (as defined earlier) but rather with memorandum generation.

iii. The assumptions upon which programs and policies were based are not tested or even considered to be testable.

iv. The Mines mandate defined the Ministry's area of interest; little importance was given factors outside of the mandated interests.
C. THE PLANNING PROCESS OF THE FISH AND WILDLIFE BRANCH.

The role of the Fish and Wildlife Branch was that of a reactor to B. C. Ministry of Mines initiatives. Moreover, since Mines was under no obligation to co-ordinate its road-building program with other agencies, Fish and Wildlife had no institutional authority to ensure that its interests were respected in planning and management decisions. Nor did the Branch have the resources to greatly increase the information available about fish and wildlife resources in the affected areas so that it might better present its position. Thus it is understandable that the involvement of the Fish and Wildlife Branch in the planning of the Omineca Mining Road was not at all similar to the idealised process discussed in Chapter I. Three main trends in the activities of the Fish and Wildlife Branch are apparent:

i. In the usual spirit of reactive planning, there were prohibitory and negative actions: hunting and fishing regulations were proposed and implemented, a total halt to the road construction was attempted;

ii. Control and rehabilitative actions relating to the construction of the road and its impact on the natural environment were suggested to (and occasionally carried out by) Mines; and

iii. Research into parametric (i.e. population and habitat) uncertainties was undertaken where the need was perceived to be most critical.
No explicit experimentation appears to have been performed by the Fish and Wildlife Branch, although reference is made to the need for research into functional relationships in order to provide a rationale for prohibitive and other controls. The resources necessary for experimentation, or even for credible parameter determination or control and rehabilitative actions, or for the enforcement of fishing and hunting regulations were not available.

D. THE INVOLVEMENT OF THE ENVIRONMENT AND LAND USE COMMITTEE SECRETARIAT.

Interest in the Omineca Mining Road by the Environment and Land Use Committee Secretariat is apparent in late 1974, but official involvement in the planning of the road did not commence until Spring 1975, when upon receiving public and Fish and Wildlife Branch complaints regarding the environmental impacts of the road, the matter was referred to the Committee. It is apparent that the ministers involved believed that by referring the matter to the ELUC Secretariat the problems would be quickly resolved and further controversy would be avoided.

The Secretariat recommended an immediate halt to construction, and an emphasis on reduction of environmental

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85 ibid.
86 Memorandum from A. D. Crerar, Director, ELUC Secretariat, to the Environment and Land Use Committee Secretariat, May 9, 1975.
impacts which were emanating from previous work. In addition, a working committee of "representatives of Mines, Highways, Recreation and Conservation and the Secretariat" was established under the aegis of the Omineca-Peace Regional Resource Management Committee. It was to make a field investigation of the project and submit a report by the end of July 1975.

The working committee recommendations included:

i. that the Omineca Mining Road be terminated at Johansen Lake;

ii. that the roadbed beyond Johansen Lake be stabilised and "put-to-bed";

iii. that the road not be promoted as a tourist end-point; and

iv. that the maintenance of other stretches of the road be at a higher standard than had been occurring.

Upon receiving notification of the recommendations the Associate deputy minister of Recreation and Conservation, E. H. Vernon, responded: "I believe this report is a sound basis for future management of this road and I can see no need for further discussion and review of this matter." However, Fish and Wildlife officials closer to the field action expressed other views: "While we agree with the recommendations ... it is

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88 Omineca Mining Road Study - Summary and Recommendations of the Task Group, by Ric Careless, Resource Planning Unit, ELUC Secretariat, Oct. 9, 1975.
obvious that the report was a 'paper solution' only and that environmental damage is still occuring. Possibly we should suggest to ELUC that they attempt to back up their recommendations with a firm hand if possible. The apparent confusion as to who really wants or has responsibility for this road may make this somewhat difficult."\textsuperscript{90}

This concern was passed on to the ELUC Secretariat: "On the basis of \{a\} report on maintenance work done this year \{on the Omineca Mining Road\}, it is apparent that the recommendations of the Task Force have not been very well carried out ... We would suggest that the ELUC must find a way of ensuring that the recommendations of the Task Force are properly carried out."\textsuperscript{91}

In early 1976 the ELUC Secretariat released a report entitled "A Discussion of the Benefits and Costs of the Omineca Mining Road", which was its major analysis of the project to that date. It concluded that the road was "an example of the type of land use practices which \{must be stopped\} if development \{is\} to proceed sensibly."\textsuperscript{92}

Shortly thereafter, at a meeting between ELUC and Mines, Mines offered to help fund an environmental monitoring and wildlife conservation program with the Fish and Wildlife Branch. In addition, "Agreement was reached that Johansen Lake could be an acceptable terminus and that possible extension to Moosevale await Ministerial direction re: policy and determination of

\textsuperscript{91} E. H. Vernon to A. D. Crerar, Nov. 3, 1975.
availability of funding by Mines Branch." In May, 1976, funding for extension of the road was granted, and so the agreement to halt construction became essentially worthless.

The last involvement of the Committee appears to have been in Spring 1978, when an attempt was made to make ELUC's Guidelines for Linear Development applicable to the Omineca Mining Road. Mines agreed that 'modified' Guidelines could be applied, as discussed earlier in this thesis.

There is some indication in the Departmental files that problems such as that posed by this project should be referred to ELUC only if this is absolutely necessary. Thus ELUC was seen (by the agency actors in this drama) as a court of last resort, rather than a useful facilitator at all stages of interagency planning. This may have resulted from a perception within the agencies concerned that ELUC dealt with issues only at the highest bureaucratic levels and that it should not be necessary to raise all interagency issues to that level.

The main aspects of ELUC involvement appear to have been:

i. Interagency co-ordination was facilitated where agencies were forced to or agreed to be co-ordinated.

ii. Because the ELUC Secretariat did not have the authority to enforce adherence to its recommendations, they were often ignored by parties to the conflict.

iii. The efforts of ELUC were essentially ad hoc - although Committee or Secretariat members might have

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93 Meeting on Omineca Mining Road, Jan. 19, 1976, D. O'Gorman, Assistant Director, ELUC Secretariat, Jan. 21, 1976.
an awareness or interest in an issue, there is no indication that ELUC involvement extended past that which its political masters requested. In other words, in this instance ELUC appears to have acted as a reactive agency, entering the situation only when requested to do so.

iv. There is no indication that ELUC sought to involve other agencies or private interests in the discussions.94

v. There is no indication of an orientation towards experimentation.

E. THE INVOLVEMENT OF PUBLIC INTEREST GROUPS.

Public interest groups concerned with the construction of the Omineca Mining Road may conveniently be divided into two types: 1) mining interests; and 2) sports (hunting and fishing) and conservation interests.

a. Mining Interests.

Mining interests were not unequivocally in favour of extension of the road. Although the initial decision to extend the road was stated to have resulted from requests from mining interests for this, and such support continued to be made public, there was some opposition to extension of the road because of the potential for vandalism and other disturbance with exploration

94 An exception occurred at a meeting on June 2, 1975, which representatives of the Forest Service and the Highways Ministry attended in order to respond to suggestions made at a previous meeting (Jan. 19, 1976) when Mines proposed that Forestry and Highways should take responsibility for the Omineca Mining Road.
and mining operations that the access provided.

b. ** Sporting And Conservation Interests.**

These interest groups expressed opposition to the fact of, location, and methods used in the extension of the Omineca Mining Road from 1973 until construction ceased in 1978. Although it is obvious that their opposition was noted and responded to by the Ministries to which it was directed, it is equally obvious that the complaints had little effect on the road proponent until 1978, when the B. C. Wildlife Federation showed a movie which it had produced concerning the Omineca Mining Road to a group of MLA's in Victoria, and the same group and a number of others publicised the issue through the media. There is substantial evidence that the conservation groups resorted to these tactics only when they believed them to be the only means by which they could ensure that their interests and values would be taken into account in the road planning process.

c. ** Essential Features Of Their Involvement.**

The essential features of the involvement of public interest groups appeared to be:

i. The pro-corridor mining interests had a ready ear in the Mining Ministry;

ii. The anti-corridor interest groups had no method of having their views taken account of in the process as it existed. It was therefore necessary for them to

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95 There are a number of examples of complaints against the road extension in the various Departmental files which state that the writer does not know to which department the complaint should be addressed.
carry the conflict to the political level, and, in effect, to subvert, if not change, the process.

F. FEATURES OF THE PLANNING AND DECISION-MAKING SYSTEM FOR THE LATTER PART OF THE OMINECA MINING ROAD.

The planning and decision-making system for the Omineca Mining Road had the following features:

i. The only information type explicitly addressed was cognitive.

ii. Uncertainty was endemic but generally unrecognised even with respect to cognitive information.

iii. Very little new cognitive information was generated prior to decisions being made and action being taken that effectively foreclosed alternatives.

iv. No explicit attempt was made to identify and contact groups to involve them in the planning and decision-making system.

v. A mediating agency was engaged to determine objectively acceptable and relevant cognitive information.

vi. The mediating agency was only introduced to the situation when it had already developed into a conflict.

vii. The mediating agency did not the authority to force adherence to its recommendations.

viii. The proponent agency was not required to alter its plans to suit the interests, values or perceptions of other groups.

ix. No mechanism existed for overcoming deadlocks, except
direct appeal to the political level as a partisan action by individual participants.

x. No mechanism existed to ensure that the matter was clearly defined when it was put before political decision-makers.

G. SUMMARY.

In this chapter I have briefly described the orientation of and the participation in the planning and decision-making system used for the Omineca Mining Road by the major actors who were or wished to be involved in the controversy. In the next chapter I briefly outline how the planning process for the Omineca Mining Road might have occurred had the conflict management model been used for the Omineca Mining Road.
V. THE HYPOTHETICAL OPERATION OF THE CONFLICT MANAGEMENT PLANNING PROCESS FOR THE O Mineca MINING ROAD.

A. INTRODUCTION.

In this chapter I give a hypothetical example of how the planning of the Omineca Mining Road might have occurred, using the conflict management model described in earlier chapters.

The conflict management planning process has as its objectives: a) decisions regarding the construction, location and design of the corridor; and b) an explicit addressing of conflict issues, so that they are defined as clearly as possible.

As elsewhere in this thesis I assume throughout this example that the decision to construct a corridor to access a certain general area has been made for strategic or other reasons which are perceived by the politicians to over-ride other considerations.\footnote{This decision is not included because factors enter the analysis which are different from those most relevant to siting and design. Nevertheless, this decision level should be as well-informed as possible, which it was not for the Omineca Mining Road. In addition, the decision to build the road was not made at the political level, but rather by the bureaucracy.}

From the analysis of the previous chapters it is clear that an explicit addressing of conflict issues requires:

i. the involvement of all parties (public or private) which deem themselves to be affected;

ii. the ability of each party to generate and communicate cognitive information which is relevant to its
conceptualisation of the project and its impacts;
iii. the ability of each party to define and communicate
its interests and how these may be affected by the
project;
iv. the ability of each party to define and communicate
the values which it holds and the way in which the
project may impact on these values or physical
projections of them; and
v. the involvement of a co-ordinating agency in some role
which is seen to be objective (unbiased), and having
the authority to require the involvement of all
parties which are seen to be relevant to the project.

In addition, it is also necessary to have some mechanism
integrated within the process which ensures that decisions are
made in a way that is acceptable within the context of our
democratic society.

In the rest of the chapter I describe how I believe each of
the requirements could have been included in the planning
process for the Omineca Mining Road. The example is in the form
of a narrative.

B. THE EXAMPLE.

1. THE DECISION TO CONSTRUCT A CORRIDOR TO FACILITATE
MINERAL EXPLORATION IN THE OMINECA REGION IS ANNOUNCED.

The announcement by the Minister of Energy, Mines and
Petroleum Resources of a decision to construct a road north from
Johansen Lake to reduce the transportation costs for private
concerns undertaking mineral exploration in the Omineca region is accompanied by a statement that a conference is to be held to determine the information that is most relevant to decisions regarding the siting and design of the road. The conference is to open a public planning process which has statutory time limitations and whose outcome must be ratified by Cabinet. The Ministry of Mines contacts a separate governmental body (which I shall call for convenience the "Objective Facilitating Board", or OFB) whose mandate is to facilitate the interdepartmental and public planning of projects which may impact public resources. I do not intend to design a detailed plan for the OFB, but I would suggest that it should be as independent as possible from specific interests and political organisations and it should have access to many different fields of expertise in both the sciences and humanities.

The OFB is asked to organise and run the conference that has been announced. The Ministry of Mines is not hesitant to request that the OFB do this service, even though it may result in a conference with different participants and a different outcome than Mines would prefer, because Mines realises that the OFB would call the conference whether Mines requested it to do so or not.

2. A CONFERENCE TO DETERMINE RELEVANT INFORMATION IS HELD.

Staff of the OFB determine to their best abilities the areas and resources which may be affected by the project. The OFB has an index of groups and individuals which have previously expressed an interest in the region concerned or in resources
which exist within it. There are also Federal, Provincial and local governments and agencies which have mandated responsibilities for the areas and resources concerned. There may also be private property owners, or holders of leases, licenses or other forms of tenure in the areas concerned. All of these classes of parties are contacted to determine if they wish to attend the conference.

In the case of the Omineca Mining Road proposal the OFB contacts several provincial resource agencies, including the Ministries of Forests, of Lands Parks and Housing, and of the Environment. The federal Ministries of Fisheries and Oceans and of Indian and Northern Affairs are also informed of the conference. All registered property owners and residents of areas which might be directly affected are informed by mail of the nature of the project and the conference which is to be held. Holders of mineral claims, guiding licenses, forestry licenses and organisations like the Sierra Club and the B. C. Wildlife Federation are also notified. In addition, local political, sports and business organisations are contacted and informed. Finally, advertisements are placed in all local newspapers from Prince Rupert to Prince George, and in Vancouver and Victoria. The advertisements explain the nature and location of the proposed project and ask that anyone interested in attending the conference contact the OFB.

When the list of parties interested in attending the conference is compiled it is sent to each party. If more individuals and groups have indicated that they wish to attend
than can be accommodated, the Board may request that the parties
discuss among themselves temporary interest or value groups that
might be formed so that only one representative of might need to
attend. It may be necessary for the Board to facilitate this
process. In this case most interests are already organised to
some extent, so that the forestry, mining and guiding licensees
are willing to be represented by executives of their respective
organisations. Similarly, the conservation groups agree to be
represented by SPEC and local and other hunters by the B. C.
Wildlife Federation. The local native groups are represented by
a member of the tribal council, and one bureaucrat attends on
behalf of Indian and Northern Affairs. Other government
agencies are limited to two representatives, and local residents
choose two of their group to attend on behalf of them all.

Participants are told that they must make themselves as
well informed as possible regarding their interests and how the
project might affect them. In addition they must be in a
position to make decisions on behalf of the group they
represent, and must be prepared to attend a later conference.

The conference is held in a publicly owned "Regional
Conference Centre" in Prince George. The Centre provides a
basic level of accommodation and conference facilities for a
minimum cost to the participants and the public purse. The
stated objective of the conference is "To Determine the
Information that is Relevant to the Siting and Design of the
Road." This objective does not necessarily include determining
precisely the parameters of the information, but rather
concentrates on the type of information that is relevant. For instance, it is not expected that this conference will conclude what effect a road in a specific location and of a specific design will have on a particular type of fish or mammal. Instead, the conference is oriented towards first determining whether fish, mammals or forestry resources are legitimate concerns in the siting and design of a road in the general area. After that, the conference will attempt to define in a general way how these (and other) resources might be affected, either directly through a variety of human actions in constructing and using a road, or indirectly through impacts on related resources. Therefore the OFB and conference participants must have available to them credible (and in some way defensible) information relating to their various interests and values. By using this information at a general level several things may be accomplished: a) that information which is available, uncertain, contested or unavailable can to some extent be determined; and b) areas of particular sensitivity can be determined and so some outline possible alternative routes and desirable mitigation requirements can be made.

The material output of this conference is, then, a determination of the social, environmental, economic and other factors which are relevant to decisions on the siting and design of the road, and an idea of the information which is available concerning these factors.

Another unstated objective of the conference is the opportunity for representatives to meet one another in a
relatively neutral setting.

The outcome of this conference is

i. some level of acknowledgement of the uncertainty regarding the existence of fisheries and other resources, of soil conditions in most of the area concerned, and so on;

ii. some level of agreement regarding areas which are obviously unsuitable for roadways because of specific accepted criteria;

iii. some agreement regarding the interests which exist and the values parties hold (this latter may remain implicit unless a specific effort is made to make it otherwise); and

iv. an awareness of the personalities and priorities of the other parties (the importance of which is discussed by Likert & Likert, 1976; and Holling, 1978).

3. INFORMATION IS GENERATED.

After this conference the OFB co-ordinates the gathering of information which has been determined as unavailable, uncertain or contested, and apparently necessary. It may not be possible to generate all the information in the time that is available before project planning decisions are to be made, but some attempt is made to gain at least an understanding of the functional relationships or range of parametric values involved. The information may be generated by consultants or government ministries, but as stated above the terms of reference and co-
ordination of information generation is undertaken by the OFB. At this time also site-specific information relating to the alternative routings is gathered.

4. **A SECOND CONFERENCE IS CALLED.**

A second conference is called when as much information is available as is permitted by the time limit which is either statutorily defined or mutually agreed upon at the first conference. The second conference has the following features:

i. most of the participants will be to some extent acquainted with one another;

ii. "objectively" gathered or generated information is available relating to the factors which have determined as relevant to the routing and design of a road in this general area;

iii. information relating to various mitigation measures is available;

iv. economic cost, social impact and other analyses are available.

Using this information, the participants, with the help of the OFB, attempt to define as clearly as possible the alternatives and their implications to the various interests and values.

The outcome of this conference is to be either an agreement among all parties regarding the preferred routing and design of the road, or a clear definition of the alternatives and their implications which can be referred to the cabinet for a decision.
The agreement, if it occurs, will arise through the interaction of the parties involved in the conference as they redefine their objectives in the light of new cognitive, interest and value information. The agreement may include compensation to some interests for damage to them, on-going programs to mitigate the damage, experimental research, or the outright purchase of affected interests.

5. **THE MATTER IS REFERED TO CABINET FOR RATIFICATION OR A DECISION.**

As stated earlier, any agreement that is made must be ratified by cabinet. However, if no overall agreement is reached, the matter is referred to the political level for review and a decision. In this eventuality the process should define as clearly as possible the implications of the alternatives.

C. **DISCUSSION.**

The example outlined in this chapter satisfies the two requirements: decisions regarding road siting and design; and an explicit addressing of conflict issues.

It is clear that such a process, when organised and facilitated by a neutral and objective body, will not easily be the tool of one interest group. Rather, the process becomes a means of defining the issues of importance and gathering and generating information relating to these issues, all in the presence of the parties directly involved in the matter. If decisions regarding the siting and design of the Road are made within the context of the second conference, it can be assumed
that the representatives present could at least live with the consequences of the decision. If no agreement was made at the second conference, then the matter is referred in a fairly clearly defined form to the political level. At this point it will be relatively clear to all parties as to the cognitive, interest, and value information that is available to the politician. In addition, each party will have an opportunity to lobby the politician to make the decision which is preferred by his interest or value group.

D. CONCLUSION.

The planning and decision-making system described in this chapter is different in many ways from that described for the Omineca Mining Road in Chapters II and IV. However, perhaps the most important difference is its explicitness of process. Given sufficient commitment to the project by elected officials, the decisions regarding the route selection and site planning could be the same from either system, but by using the conflict management model the areas of conflict are identified, defined, and addressed to some extent, and alternatives have a greater chance of being perceived and investigated before they have been foreclosed by decisions. This is clearly the direction in which resource development planning must move.
BIBLIOGRAPHY


