A TERRITORIAL REGIONAL PERSPECTIVE FOR RESOURCE SETTLEMENT PLANNING

by

JAMES WILLIAM STANLEY BELL

B.A., Simon Fraser University, 1980

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS

in

THE FACULTY OF GRADUATE STUDIES
School Of Community And Regional Planning

We accept this thesis as conforming to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA
May 1985

© James William Stanley Bell, 1985
In presenting this thesis in partial fulfilment of the requirements for an advanced degree at the University of British Columbia, I agree that the Library shall make it freely available for reference and study. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by the Head of my Department or by his or her representatives. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Department of School Of Community And Regional Planning

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

Date: 20 May 1985
Abstract

This thesis addresses the problem of resource town instability and focuses on resource settlement planning, assuming that a stable resource community is dependent on the settlement planning approach. The problem is addressed through the development of a new theoretical approach. It stems in part from a synthesis of the two dominant perspectives in the literature on resource towns -- the "internal" and the "external" perspective. The internal perspective is expressed in the traditional resource settlement literature. Its goal is a stable labour supply to be attained by a focus on the physical and social attributes of the towns. This literature assumes a stable workforce stems from a stable community which can be achieved through physical and social planning applied at the community level.

The external perspective is expressed by the critical resource settlement literature. Its goal is stable labour demand to be attained by a radical restructuring of the regional and provincial economy. The critical literature assumes that the long term stability of a resource community's employment base is dependent on fluctuating external markets over which the community has no control. The flaw of the internal perspective is its failure to address the need for long term stable labour demand. The external perspective is flawed by the absence of a policy prescription for settlement planning.

The research methods comprise a review of the literature on planning theory, resource settlement planning and regional
development. The proposed perspective is elaborated through a comparison of theoretical concepts with current British Columbia provincial policy as manifest in three recent applications; Elkford, Tumbler Ridge and Northwestern British Columbia.

The result is a synthesis of the internal and external perspectives providing an alternative resource settlement planning approach which addresses resource community stability in the long as well as the short term.

The salient points of the proposed resource settlement planning approach are:

- A territorial rather than a functional interpretation of regional development and settlement planning based on:
  - an internal regional focus for development which utilizes local social and economic goals;
  - a composite interpretation of the region, comprised of social, cultural, physical and economic dimensions;
  - a conservationist approach to resource use; and
  - a long run perspective in evaluating development.

- The replacement of the goal of community stability by the goal of regional resilience. A resilient region is comprised of economically, socially and politically interlinked settlements which jointly serve the region's population;

- A strategic planning process which employs bottom up representation involving local institutions and interest groups.

The Elkford and Tumbler Ridge case studies indicate that the current provincial policy; Rely's on a strategic
planning process, 2. attempts to move towards bottom up representation in implementing settlement plans and 3. is effective in creating short term community stability. But the current policy has not addressed long term stability.

The territorial regional settlement planning approach developed in this thesis was tested for Northwest British Columbia. Suggested "ideal" planning actions for Northwest British Columbia are:

• A shift in focus from examining settlement options which will best serve mining interests to an analysis of how mining can best serve regional development;
• A development strategy which looks at alternative forms of development and the relationship between them and the mining proposals;
• The use of the mine projects to encourage economic and social diversification in existing settlements in the southern part of the northwest region;
• Greater use of local institutions and interest groups in the planning and implementation phase; and
• The use of regionally based criteria in examining the settlement options.

Given existing provincial resource settlement policies, two steps can be taken to move towards a territorial regional approach to resource settlement planning: 1. use and build upon existing settlement systems, and 2. use resource projects to foster regionally based economic diversification by planning ahead.
# Table of Contents

Abstract .......................................................................................................................... ii  
List of Figures ................................................................................................................... viii  
Acknowledgement ............................................................................................................ ix  

Chapter I  
RESOURCES SETTLEMENT PLANNING: PAST AND PRESENT .......................... 1  
1.1 Introduction .................................................................................................................. 1  
1.2 Definitions ................................................................................................................... 2  
  1.2.1 Territorial ............................................................................................................... 2  
  1.2.2 Regional Resilience ............................................................................................... 2  
  1.2.3 Strategic Planning Process ..................................................................................... 3  
  1.2.4 Bottom Up Representation ...................................................................................... 3  
1.3 Setting The Stage ......................................................................................................... 4  
  1.2.1 The Traditional And Critical Resource Town Literature: The Internal And External Perspectives ........................................................................................................... 4  
  1.2.1.1 The Traditional Resource Town Literature ....................................................... 5  
  1.2.1.2 The Critical Resource Town Literature .......................................................... 11  
  1.2.1.3 The Limitations Of The Traditional And Critical Resource Town Literature .......................................................... 11  
  1.2.2 The Evolution Of Provincial Policy For Resource Towns .................................. 4  
  1.2.2.1 The Bush Camp .................................................................................................. 12  
  1.2.2.2 The Company Town .......................................................................................... 13  
  1.2.2.3 Instant Towns ................................................................................................... 18  
  1.2.2.4 Local Government Towns ............................................................................... 21  
  Summary: 1.3.2.5 The Need For The Articulation Of A Perspective Which Bridges The Traditional And The Critical Literature ...................................................................................... 24  
1.4 Thesis Structure ......................................................................................................... 26  
  1.4.1 Justification ............................................................................................................. 26  
  1.4.2 Method .................................................................................................................... 28  
  1.4.3 Limitations ............................................................................................................. 28  
1.5 Conclusions ................................................................................................................. 29  

Chapter II  
TERRITORIAL REGIONAL PLANNING .............................................................. 31  
2.1 Introduction .................................................................................................................. 31  
  2.1.1 Definitions .............................................................................................................. 31  
2.2 Settlement Theory, Regional Development Theory And Resource Town Settlement Planning: The Traditional Functional View ...................................................................................... 33  
  2.2.1 An Overview Of Traditional Functional Settlement Theory .............................. 33  
  2.2.2 Settlement Theory And Resource Towns ............................................................. 40  
  2.2.3 Regional Development Theory And Resource Towns ........................................ 42  
  2.2.4 Summary: The Limitations Of A Functional Approach ....................................... 45  
2.3 Settlement Theory, Regional Development Theory And Resource Settlement Planning: The Alternative Territorial Planning View .............................................................. 47  
  2.3.1 The Limits And Potential Of Territorial Planning .................................................. 47
For Resource Settlement Planning .........................50
2.3.2 A Focus For Territorial Planning: Regional
Resilience .............................................52
2.3.2.1 The Concepts Of Resilience And Stability ...52
2.3.3 Support For Regional Resiliency: Recent Rural
Settlement Trends And Alternative Settlement Concepts
.........................................................59
2.3.3.1 Recent Rural Growth Trends ..................59
2.3.3.2 Changing Regional Settlement Patterns .....61
2.3.3.3 Implication For Resource Settlement Planning
................................................................63
2.4 Conclusion ............................................64

Chapter III
THE IMPLEMENTATION OF TERRITORIAL REGIONAL PLANNING: A
SUGGESTED STYLE ...........................................66
3.1 Introduction ............................................66
3.2 An Alternative Planning Process .........................67
  3.2.1 The Social Ecologist/Systems View Of Planning ...67
  3.2.2 Bottom-Up Planning Versus Top-Down Planning: The
     Case For Local Government .......................74
3.3 The Option Field Of Regional Planning Styles .............76
  3.3.1 Top-Down Master Planning ......................76
  3.3.2 Top-Down Strategic Planning ....................78
  3.3.3 Bottom-Up Master Planning .....................81
  3.3.4 Bottom-Up Strategic Planning ...................81
  3.3.5 Lessons Learned ..................................83
3.4 The Required Objectives To Achieve Regional Resilience
.....................................................................84
  3.4.1 Territorial Regional Planning ....................84
  3.4.2 Bottom-Up Representation .......................85
  3.4.3 A Strategic Process ..............................85
3.5 Conclusion ............................................86

Chapter IV
CASE STUDIES: COMPARISON OF THE TERRITORIAL REGIONAL
PLANNING POLICY WITH THE PRESENT LOCAL GOVERNMENT POLICY .87
4.1 Introduction ............................................87
4.2 Elkford .................................................87
  4.2.1 History ...........................................87
  4.2.2 Settlement Planning History ....................92
  4.2.3 Evaluation: Application Of Criteria .............96
    4.2.3.1 Territorial Regional Planning ...............96
    4.2.3.2 Bottom Up Representation ...................99
    4.2.3.3 Strategic Process ..........................100
    4.2.3.4 Summary: Elkford .........................103
4.3 Tumbler Ridge ........................................106
  4.3.1 History ...........................................106
  4.3.2 Settlement Planning History ....................110
  4.3.3 Evaluation .......................................115
    4.3.3.1 Territorial Regional Planning ...............115
    4.3.3.2 Bottom Up Representation ...................118
    4.3.3.3 Strategic Process ..........................119
    4.3.3.4 Tumbler Ridge Summary .....................121
4.4 Conclusion ..................................................123

Chapter V
NORTHWEST BRITISH COLUMBIA: THE APPLICATION OF A TERRITORIAL REGIONAL RESOURCE SETTLEMENT PLANNING POLICY 125
5.1 Introduction ..................................................125
5.2 History .......................................................125
5.3 Settlement Planning History ................................129
5.4 Evaluation ....................................................133
  5.4.1 Territorial Planning .....................................133
  5.4.2 Representation: Bottom Up ...............................138
  5.4.3 Strategic Process ........................................140
5.5 Conclusion ....................................................143

Chapter VI
CHAPTER 6: SUMMARY AND PROPOSALS ........................144
6.1 Introduction ..................................................144
6.2 Synopsis Of The Territorial Regional Planning Perspective .............................................144
6.3 Territorial Regional Planning And Existing Provincial Policy ...............................................148
  6.3.1 Existing Provincial Policy ...............................148
  6.3.2 Policies For Implementation Of A Territorial Regional Approach For Resource Settlement Planning 149
    6.3.2.1 Settlement Policy ....................................150
    6.3.2.2 Economic Policy ......................................151

LITERATURE CITED .............................................155
List of Figures

1. Summary Chart: Internal and External Perspective ...... 5
2. Evolution of Provincial Resource Town Policy .......... 14
3. The Major Contributors to Settlement Planning ....... 34
4. Von Thunen's Land Use Model ............................ 35
5. Weber's Location Model .................................. 36
6. Christaller's Central Place Theory: Market Areas of Central Places ........................................... 38
8. A Revised Planning Process Model ......................... 72
9. Option Field of Styles for Regional Planning .......... 77
10. The Elk Valley Area ....................................... 88
11. The North East Area ....................................... 107
12. The North West Area ....................................... 126
Acknowledgement

Researching and writing a master's thesis requires insightful guidance, the assistance of one's colleagues and financial support. This thesis would not have been possible without the guidance of Gary Paget, the assistance of Brian and the financial support of Canada Mortgage and Housing.
I. RESOURCE SETTLEMENT PLANNING: PAST AND PRESENT

1.1 Introduction

A review of the literature suggests that the accepted objective of resource town planning is workforce stability through community stability (Paget, 1983, p.8). Since Lucas (1971) developed his typology of stages which a resource town passes through, the focus of much of the resource town literature has been to encourage the maturation of resource towns on the assumption that community stability is an outcome of the maturing of a town and that community stability will create labour stability. This thesis focusses on the settlement planning aspect of resource town planning. It is assumed that a stable resource community is largely dependent on a stable settlement. A "territorial regional" perspective is proposed by this thesis as the most appropriate planning model to achieve the aim of a stable community.

A "territorial regional" perspective is defined in this thesis as having four key elements. These are: a regional development philosophy of territoriality; a focus on regional resilience as opposed to community stability; the utilization of a strategic planning process and bottom up participation in the planning process. The remainder of the chapter will define these terms and "set the stage" for the development of these concepts in the remainder of the thesis.
1.2 Definitions

1.2.1 Territorial

The difference between a "territory" and a "functional" approach to regional development and planning has been examined in depth by Friedmann and Weaver (1979). Whereas a functional approach concentrates on the functional linkages and spatial attributes of a region, a territorial approach is more holistic. A territorial approach encompasses the following points:

• Internally generated development as opposed to externally imposed;
• Community derived goals as opposed to externally imposed goals;
• A composite definition of the region which includes historical, cultural, social, physical and economic ties;
• Respect for the natural ecological base of the region; and
• A long run as opposed to a short term view of regional development.

1.2.2 Regional Resilience

Chapter 2 argues that the "community stability" focus should be replaced by a regional resilience focus. Stability and resilience are attributes of a system. Stability is defined by ecologists as "the ability of a system to return to an equilibrium state after a temporary disturbance (Holling, 1973)". For resource towns this implies only slight swings in the employment base.

Resilience, on the other hand, "is a property that allows a
system to absorb and utilize (or even benefit from) change (Holling, 1978, p.104). In terms of resource towns a resilient strategy accepts the unpredictable and shifts the focus from the community to the region. In a resilient system the component parts may change (towns boom and bust) but the diversity and the interlinkages of the system are key to ensuring the system's resilience at the regional scale. This has important policy ramifications. A strategy for community stability assumes change is predictable and therefore can be planned for and/or controlled. A resilient strategy assumes change is stochastic and the impacts unpredictable spatially, temporally and in magnitude. Therefore, a resilient strategy adopts a "safe failure" strategy at a regional or systems wide level.

1.2.3 Strategic Planning Process

A strategic planning process is an alternative to master plan planning. The main points of a strategic process are;

• Proactive: Implements policy to effect change;
• Process Oriented: Does not pretend to deliver a final end product;
• Incremental: Takes small cumulative steps which are reversible;
• Flexible: Can adapt as the problem is better defined or as the parameters shift;
• Experimental: Encourages continued learning to ensure the process evolves with the problem.

1.2.4 Bottom Up Representation
A planning process can be either top down or bottom up. In a top down process decisions flow down the organizational hierarchy (e.g. military planning and traditional corporate planning). In bottom up planning decisions move up the organizational hierarchy. The concept is that the people most affected by a problem are the ones most able to find a solution to the problem. In the case of resource settlement planning, bottom up planning implies reliance on regional and local government for the planning and the implementation of the settlement option.

1.3 Setting the Stage

1.21 The Traditional and the Critical Resource Town Literature: The Internal and External Perspectives

The traditional Canadian resource town literature is both descriptive and normative. In describing the social and physical conditions of resource towns the literature is encompassing (Viet, 1978) and prolific; "there are volumes of sociological literature on single industry towns in Canada (Graham, 1979). The literature's goal is a stable workforce supply (Hightower, 1985) and assumes this is achievable through the provision of an attractive, socially and physically, town. Therefore the literature proposes numerous normative actions centering on improving social and physical resource town planning. Its focus is internal to the town.

The critical resource town literature emerged in the
seventies. It argued that a stable labour supply is dependent on a stable labour demand (Hightower, 1985). This argument is based on a political economy assessment of resource towns and concludes that a stable labour demand in a resource town is impossible without massive structural changes to the global economy of which resource towns are part (figure 1) the focus is the "external environment of resource towns".

<table>
<thead>
<tr>
<th></th>
<th>FOCUS</th>
<th>ASSUMPTION</th>
<th>SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional</td>
<td>GOAL</td>
<td>ENVIRONMENT</td>
<td></td>
</tr>
<tr>
<td>Literature;</td>
<td>Labour</td>
<td>Social/physical at the community</td>
<td>Improve social and physical planning to</td>
</tr>
<tr>
<td>Internal</td>
<td>supply</td>
<td>level</td>
<td>encourage community development.</td>
</tr>
<tr>
<td>Perspective</td>
<td>stability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical</td>
<td>Labour</td>
<td>Political/economic at the regional</td>
<td>Long term stability is unachievable within the</td>
</tr>
<tr>
<td>Literature;</td>
<td>demand</td>
<td>global level</td>
<td>system.</td>
</tr>
<tr>
<td>External</td>
<td>stability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perspective</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 1 - Summary Chart: Internal and External Perspective

1.3.1.1 The Traditional Resource Town Literature

The traditional literature is concerned with the social cost of "boom and bust" towns and the industrial cost stemming from the high labour turnover rates. As Robinson notes;

the reason for such high rates of turnover in resource towns and the characteristics of those who leave have received considerable attention by researchers (Robinson, 1984, p.7).

These include Lucas (1971), Matthiasson (1971) and MacMillian (1974). More recently, Langin (1981) has investigated the
factors contributing to satisfaction with life in Elkford from a women's perspective.

The assumption made in the literature is that workforce instability stems from the underdevelopment or lack of physical and/or social community attributes and processes. The goal therefore, is to encourage "social integration by design" and to "convert residents into citizens (Siemens, 1973)". To quote Marchak;

(community) instability is viewed by many researchers and the companies as a problem to be cured by social amenities: making the town as attractive as possible (Marchak, 1984, p. 303).

Examples are Port Alice (Horsfall et al., 1978), Gold River (Lozovsky, 1970) and Fort McMurray (Matthiasson, 1971).

By community stability, the traditional literature generally refers to a stage of community development in resource towns that is characterized by the presence of an established core population, a sound economic base, a network of social services, programs and facilities, a low rate of criminal activity and citizen participation in community affairs (Viet, 1978, p. IV-6).

This definition is based on the concept of a town life cycle. The assumption is that a town has several life stages with the most highly evolved stage being the mature stage. Lucas was the first to describe the life stages of a resource town. The stages of his hierarchy are: construction, recruitment, transition and maturity (Lucas, 1971). Riffel (1975) enlarged on these to six stages:

• natural or prediscovery;
prospecting to survey;
industrial and town construction;
industrial and community operation;
community diversification; and
community maturation.

Bradbury added an additional stage -- decline. The normative view of the traditional literature has emphasized policy to speed up the maturation process and concentrates on community based solutions. The objective being to skip or decrease the intervening stages. In a 1971 study of Fort McMurray, Matthiasson (1971) concluded that Fort McMurray reflected successful community planning. By doing so, Matthiasson argues, the town retained the residents with a propensity to be satisfied with a "small town" and outdoor lifestyle. Thus, the resulting resident's satisfaction with the town led to their rapid integration into the town's community. In short, "good" town planning speeded up the town's maturation process by providing an environment which encouraged residents to become citizens.

The community stability theme is still apparent in more recent literature. Paget (1982), Paget and Walisser (1983) emphasized the importance of developing "true" local government to encourage resource community stability. Robinson (1985) states that he is supervising a study on;

the potential feasibility of co-op housing as a means of minimizing labour and community turnover and achieving greater community stability in resource towns (footnote, p. 21).

In a recent study for a townsite for the Athabasca Oil Sands
Project a major expressed concern was "the attraction of a stable workforce for the company". To examine this issue the study concentrated on housing and community service issues noting that "community services play a vital role in the stabilizing and maturing process (Roberts and Fisher, 1982)".

The community focus of the literature is also apparent in a study by Viet (1978). Based on an extensive literature review (of primarily the internal perspective) Viet (1978) identifies six "determinants of community stability. These are:
- external economic considerations including mining technological change and labour/management policies;
- community services and facilities;
- resident service professionals;
- single detached housing units;
- employment of local people; and
- development of options; jobs, access and communications.

Viet states that the literature has concentrated on the latter five themes, on the assumption that macro economic concerns are beyond local or even provincial control.

The "community" focus argument is supported by a visual comparison of traditional resource towns of the 1940's and early 50's with more recent resource towns. Relying on the traditional literature, resource settlement planners have attempted to create "normal" towns through high urban design standards, effective social planning and encouragement of citizen participation in the design and government of the towns.

While focussing on the community, the traditional
literature is cognizant of the external economic constraints on developing community stability in resource towns. For this reason much of the literature has suggested a regional approach. Clegg (1958) argued that only towns that can become diversified regional centers should be built. Robinson (1962) suggested formation of regional planning and development agencies to assess regional resource potential and to develop regional settlement plans. Riffel (1975) suggested only regional centers should be built which would then serve several portable towns. Viet (1978:11-7) concluded that "the only reasonable way to plan for stability in the new towns is to foster stability in the region" by improving the regional planning function. A recommendation of the report of the Federal-Provincial Task Force on Mining Communities (1982) in reviewing "community development and planning" states:

The regional planning concept, if it can be implemented for relatively large geographic areas, clearly offers a strategy for minimizing the vulnerability of the central community to the fluctuations in fortunes of any single mining or renewable resource activity (page 40).

The problem is that the literature does not fully explain what a regional approach is or how it is to be implemented. As observed by Viet, the literature has concentrated on community processes, on the assumption that the macroeconomic concerns are beyond the jurisdiction of local/provincial control.

1.3.1.2 The Critical Resource Town Literature

The critical literature argues that a long term stable
labour supply is impossible since labour supply is dependent on labour demand which is inherently unstable. The starting point of the critical resource town literature is that while the traditional literature recognizes the importance of economic stability for community stability in practice, and to some extent in theory, economic stability is not addressed. As stated by Marchak:

Because few researchers have concerned themselves with the external environment within which resource communities exist, the vast majority of studies on these towns are concerned with social conditions. This coincides with the interests of the employers and governments who want to determine which combination of social conditions leads to the least transient labour force, assuming a stable external environment (Marchak, 1984, p. 304).

In an analysis of mining communities, MacMillian (1974) concluded; "the cyclical nature of the industry prevents labour stability which in turn impedes community stability". A similar conclusion is reached by Byron (1976). In an examination of the relationship between community stability and the British Columbia forestry industry; Byron observed no correlation between sustained yield forest management and community stability. Whereas, Byron did observe a strong correlation between community stability and the price of exported construction lumber.

One of the major works on resource towns in British Columbia is Bradbury's 1977 doctoral thesis. According to Bradbury resource towns built in British Columbia between 1962 and 1972 were a failure. He claims stability eluded all of them. Bradbury concluded that the planning focus was misplaced;
stability would never be achieved through community processes since the causes of resource towns instability is the domination of the provincial economy by multinational corporations. Consequently, while the companies expected long-term worker commitment the company's commitment was short term.

A sub theme of Bradbury's thesis --the transferring of cost of the town from the company to the worker is further addressed by Gunder (1981). He suggests that the strategy to "normalize" company towns through home ownership, a locally elected council and the encouragement of volunteerism represents subsidization of the industry, by minimizing collective consumption. In other words, a resident of a single resource town has to pay, through volunteer work, for what an urban resident would receive as part of his collective consumption.

In short, the critical literature focusses on the external environment of resource towns. It argues, from a political economy perspective, that resource towns will never be stable so long as they are dependent on unstable foreign markets.

1.3.1.3 The Limitations of the Traditional and the Critical Resource Town Literature

The limitations of the traditional literature are clearly expressed by the critical literature. By focussing on the community level for policy action, the root cause of community stability is avoided --dependency on foreign markets. The traditional literature has noted the importance of developing regional centers with a diversified economy. However, in
practice, the derived policies are directed at the community.

The critical literature has provided an important contribution by delineating the shortcomings of the traditional literature. The limitation of the critical literature is a lack of policy relevance. The critical literature provides little guidance to the resource town planner given existing provincial economic policies and the current capitalist structure which governs the provincial economy. The critical literature suffers from what Smith (1979) describes as "the structural trap of informed inactivity (p.265)".

The unlikelihood of a restructuring of the world economy and the limitations of the traditional literature suggest the need for the development of an alternative planning model which can reconcile the community focus of the traditional literature with the global focus of the critical literature. This thesis offers one possible option in the search for this solution -- the "regional resilience" model.

Before attempting to develop the alternative model it is instructive to review the evolution of provincial resource community policy over the past one hundred years.

1.3.2 The Evolution of Provincial Policy for Resource Towns

The history of resource town planning in British Columbia has been characterized by four general trends. These are trends from:

- private to public governance;
- worker dependence to worker independence;
• one company to multi-company towns; and
• strictly physical planning to broader physical and social planning.

These trends have emerged in roughly four phases which characterizes the evolution of provincial resource town policy (Figure 2).

Examples of all phases exist and are still being utilized where circumstances warrant.

1.3.2.1 The Bush Camp

This category includes the earliest and some of the most recent forms of accommodation for miners and loggers. Prior to World War one resource camps and towns materialized around the mine or the forest enterprise. The towns were characterized by rapid development through inflooding entrepreneurs, and overnight collapse when the resource was exhausted. Some, like the City of Phoenix, rapidly reached considerable size with "over two dozen hotels and saloons, churches, a school,...and scores of other thriving businesses" (Barlee, 1970). The legacy of these towns are the ghost towns which dot the province's landscape.

Whereas the early towns were generally mining towns, most of the early camps were associated with the logging industry. At that time the logging industry was dominated by small scale and often part-time logging outfits who relied on portable mills (Marchak, 1984).

The purpose of the camps was to provide basic accommodation
<table>
<thead>
<tr>
<th>Phase</th>
<th>Type</th>
<th>Purpose/Goal</th>
<th>Principal Actor</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Privately Owned Camp</td>
<td>Short term accommodation</td>
<td>RESOURCE COMPANY</td>
<td>Baker Lake, Phoenix City</td>
</tr>
<tr>
<td>II</td>
<td>Company Town</td>
<td>Long term accommodation for workers and their families. Goal; workforce stability</td>
<td>RESOURCE COMPANY</td>
<td>Kitsault, Cassier</td>
</tr>
<tr>
<td>III</td>
<td>Instant Town</td>
<td>Workforce stability through; home ownership, local government and a quality physical plan. Risk minimization</td>
<td>RESOURCE COMPANY, Province, Local government.</td>
<td>Mackenzie, Gold River</td>
</tr>
<tr>
<td>IV</td>
<td>Local Government Town</td>
<td>Workforce stability: fairsharing of risks; local control of land; local self-government; integrated housing market, etc.</td>
<td>PROVINCE, LOCAL GOVERNMENT, Resource Company</td>
<td>Elkford, Tumbler Ridge</td>
</tr>
</tbody>
</table>

Figure 2 - Evolution of Provincial Resource Town Policy

for the duration of the harvest. Whereas the unplanned resource town is an anachronism, the camps still exist where the nature of the resource being exploited dictates a small scale, short term and/or isolated industrial plant and accomodation. The coastal inlets are dotted with camps, some of which have had a longer life than many resource towns. For example the logging camp at the end of Knight Inlet dates from the nineteen
thirties. The camps are generally enclave industrial plants preforming a specific task for their corporate parent. The camps are also the dominant form used by the individual small time operator who still occupies a niche in the precious mineral sector.

The objective of the bush camp is basic accommodation of the workforce. For the employer, this implies minimum capital cost but high operating costs since he must provide for all the employee's needs during the time she/he is in camp. This often leads to a paternalistic relationship between the worker and the employer. The camp addresses the problem of labour force stability through competitive wage scales and attractive fringe benefits.

1.3.2.2 The Company Town

The company town phase can be roughly divided into pre and post world war two. The company towns built between the 1900's and the second world war were associated with the first period of resource development in the southern portion of the province. The towns served resource projects which had anticipated long life spans such as coal mines and pulp and paper mills. As with nonplanned resource towns, the towns were built at the resource site and while the majority of such towns later died, some did evolve into permanent settlements taking on other economic functions (Bradbury, 1977). Examples of the latter include, Trail, Rossland, Powell River and Fernie. Others have enjoyed relatively long lives such as Houston, Tasu,
Ocean Falls and Cassier.

With regard to forest base towns, Marchak argues that the towns reflected structural change in the industry. Changing technology, growing world markets and the provincial forest tenure system favoured the large firm over the individual operator (Marchak, 1984).

Similar to the early bush camps, many of the early company towns were owned and operated by the entrepreneurs who owned the industrial plant. The increase world demand for minerals during the second world war and the post war period had a profound effect on the company town. Larger and more isolated resource projects and towns resulted from expanding world markets and a concerted government policy to develop more northern resources. An example is the federal roads to resource program (Glass, Lazarovich, 1983). Furthermore, the growth of transnational firms in this era replaced the company boss with midlevel managers who received their orders from corporate headquarters in perhaps Vancouver, Toronto, New York or Toykyo.

Glass and Lazarovich also note that the changing post war technology effected recruitment. A skilled labour force was recruited from urban centers and abroad. "Consequently, a higher quality of urban amenities, along with higher wages became necessary (1983,p.64)". Along with offering competitive salaries and fringe benefits the post world war two company town also used "urban amenities" to attract workers. This was reflected in the development of the traditional literature's focus on community.
The company town was viewed as a cost-effective method of ensuring a workforce for the industrial plant. The major participant in the development and management of the town was the company. This approach to resource community development has been called "private governance" by Paget and Walisser (1983). The company bears all the investment costs and risks of failure. "...(T)he company town is administered by the resource company. Its housing stock and its commercial and recreational services are owned and operated by the company (Paget and Walisser, 1983)". For this reason the worker is totally dependent on the company.

The original Port Alice is a good example of a company town. Conceived with the pulp mill, Port Alice started out as a bunk house settlement in the early 1900's and evolved into a townsite. The company provided subsidized housing, "recreational facilities including a bowling alley, movie theatre and tennis court...", as well as a doctor and a hospital (Horsfall et al., 1974, p.8).

While the paternalism of a company town was liked by many employees (Horsfall, 1974), the limited rights in the company town have been criticised. Walker notes the company towns existed outside the urban laws of Canada effectively disenfranchising the citizens (Walker, 1953 in Bradbury, 1977). A second criticism of the company town was that community development was hindered by the paucity of a managerial/professional class and a private service sector class. Community diversification was further impeded by the
omnipotent presence of the company and the wariness of the employees to invest and put down roots in an inherently unstable situation (Viet, 1978; Paget and Walisser, 1983).

The perceived social and community deficiencies of the company town have been well articulated by the traditional literature.

1.3.2.3 Instant Towns

The instant town phase was to some extent an attempt to operationalize the traditional literature. This phase refers to resource towns constructed under the so-called "instant town" amendments to the Municipal Act from 1965 up to the early seventies. Bradbury (1980) identifies nine towns constructed during this period. According to Porteous (1970) the "instant town" amendments reflect:

- Changing values -- from group dependence to group independence;
- An increase in government intervention;
- Improved transportation and communication networks;
- More powerful trade unions;
- A desire by firms to divest themselves of the responsibility for providing living accommodation; and
- A continued need for adequate settlements as resource development of frontier areas was encouraged by government.

The "instant town" amendments to the Municipal Act reflect private industry's concern with high labour turnover and the government's concern with community health. The instant town
provisions are enabling sections allowing for the incorporation of previously company-run single-enterprise towns or new towns. Rooted in the traditional perspective, the original means advocated by the amendments were physical planning, local self-government and worker home ownership. It was believed that through these means worker satisfaction and community commitment would increase. The underlying assumptions were:

- It is possible to attract and retain a stable workforce in isolated areas; and
- Residential satisfaction may be achieved through provision of a planned and high-quality built environment, worker home ownership and local self government (Horsfall, 1978).

The community plan was considered key. The Minister of Municipal Affairs stated; "developments resulting should be subject to the existence of an official community plan (Bradbury, 1977, p.177)". The company was responsible for the drafting of the community plan. Once approved by the Minister of Municipal Affairs the plan was in effect "carved in stone" due to its attachment as a schedule to the Letters Patent of the new community. This a good example of a "top down master plan approach" (chapter 3) to planning.

The new Port Alice exemplifies the instant town phase. The old townsite was dismantled and a new townsite was located with a spectacular vista. The planners relied on the latest thinking in urban design -- multiple housing options on curvilinear streets centering on a service core. In theory all signs of previous company involvement were erased with self government
The instant town amendments were part of a broad provincial policy to develop the hinterland by encouraging large-scale resource extraction. In describing provincial policy of the fifties and early sixties Marchak (1984) comments:

The provincial government of the period was exuberant in its eagerness to provide legislation and aid for the 'opening of the north'...

Government's role in this development would be to facilitate the investment of capital by providing legislation and public funds for townsites, roads and other infrastructure; and by granting liberal terms for extraction rights to the resources (Marchak, 1984, pp. 39-40).

Bradbury makes a similar argument. He goes on to suggest that there was an attempt by government (at least in theory) to rationalize the location of "instant towns" by using them as growth poles to spur regional development. The insistence of the corporations in locating the towns at the resource site undermined this policy. This expressed regional concern was also a feature of the traditional literature.

Instant towns apparently failed to produce stable communities or workforces. In evaluating the Port Alice experience, Horsfall (1974) found no appreciable decrease in the transience of the workforce and a great deal of residential dissatisfaction. The most common concern was with home ownership. The workers believed it was an economic trap in light of the instability of external economic conditions. Another concern of the workers was the lack of choice of urban amenities such as entertainment, consumer items and schooling
for teenagers.

A more significant criticism from the critical literature is that the instant town approach has only succeeded "in transferring the cost of running a town from the company to the workers (Bradbury, 1980; p. 34)". It is alleged that worker home ownership and local government has enabled the company to divest itself of a major financial burden. The counter argument is that the company still pays through its municipal taxes and has only left the planning and running of a town to those who are more qualified to do so.

A major objective of the "instant town amendments" was the fostering of local government. Yet the critical literature notes the tardiness of true local self-government and its failure to often be truly "local". For example, the local town councils often ended up being dominated by company management which created resentment among the workers (Marchak, 1984; Paget and Walisser, 1983). However, one could argue this "failure" is not necessarily restricted to resource base communities. In fact they may be no different from other small town councils.

1.3.2.4 Local Government Towns

The local government phase is the current provincial policy. The policy has emerged in response to the inadequacies of the instant town policy and examples are Elkford, Tumbler Ridge, and the Highland Valley.

The local government phase, while still community focussed,
uses a more flexible planning process. The suggested planning process is articulated in the 1979 Ministry of Municipal Affairs publication *Resource Community Planning: Framework for Choosing Settlement Options* (Rabnett, 1979). The three steps are:

- Developing the range of settlement options—new towns, expanded towns and rural settlements—and their social, financial, physical and organizational implications;

- Choosing the preferred settlement option, establishing the criteria for making choices, understanding implications, drawing up a balance sheet and selecting an option; and

- Securing the selected settlement option—implementing it through provincial planning and negotiation (Rabnett, May 1979, executive summary).

In reviewing the range of settlement option the local government phase, in theory, takes a more regional view than the "instant town" phase. In southeastern British Columbia, the decision to expand Elkford as opposed to building a new town demonstrates this concern for regional impacts. To address the economic stability question the local government phase promotes multi-employer towns (Elkford and Tumbler Ridge) and the evaluation of the settlement decision within the context of existing towns. The success of this strategy is yet to be seen. The critical literature suggests that this strategy will fail. The towns are still based on one resource with economic
diversification limited to the service sector.

A final suggested difference between the "instant town" and the "local government" phase is the role played by government. While industry was the key player in "instant towns" phase, there is greater negotiation between industry and government in the "local government" phase. The settlement decision is negotiated between industry and the provincial government, in consultation with local government. In the case of a new town "true" local government is encouraged and every effort is made to reduce industry's role to taxpayer and guarantor of debt.

As previously mentioned the local government phase reflects the evolution of the traditional literature as well as provincial policy. An evolution which has had some success in encouraging community development and in addressing many of the social problems usually associated with resource communities (chapter4).

The traditional literature and the current policy of the government concur on the following points;

- Do not create isolated resource towns;
- Utilize existing towns if at all possible;
- Build into existing settlement networks;
- Avoid new towns, if at all possible; and
- If a new town is built, diversify it as much as possible within a regional system.

The major criticism of the above policy, from a critical perspective, is that the root cause of community stability --
economic stability is only a secondary concern. The critical literature argues that a community or even a regional network of settlements is economically unstable when it is dependent on one resource produced for unstable foreign markets. Furthermore while the stated policy acknowledges the economic interests of the resource company in negotiating the settlement decision with government, it has to be accepted that the government may not be successful in overcoming the power of the company.

From the critical perspective the major issue is still the old one that Innis identified --how to avoid the "staple trap" (Marr and Paterson 1980). Innis' staple thesis suggest that an economy which is dependent upon the export of a staple good, with little processing and value added, is extremely vulnerable. The dependency of a region on one staple retards development of other markets as entrepreneurial and technical skills atrophy. The result is a shrinking economy when the demand for the region's staple exports collapses (Marr and Paterson, 1980, p. 454).

1.3.2.5 Summary: The Need for the Articulation of a Perspective which Bridges the Traditional and the Critical Literature

The evolution of the provincial resource settlement policy is reflected in the progress of the traditional resource town literature. In an attempt to ensure a stable labour supply the towns have moved from one employer company run towns to multi-employer towns with local government and a normal worker/employer relationship. In planning the towns, planners
and architects emphasize the social as much as the physical design aspects. Similarly, the traditional literature has moved from a focus on physical attributes --"the suburbia in the woods" (Robinson, 1962) -- to a much more sophisticated holistic approach in addressing the social problems of resource towns.

This has resulted in more physically and socially attractive multi-company towns and a concern for the financial risk of resource enterprise failure. However, the settlements are still economically dependent on single resource base extracted for export markets. This limitation is clearly articulated by the critical literature. The conclusion of the critical literature is that stable labour supply is dependent on stable labour demand. To achieve stability in labour demand the external perspective advocates radical change in the regional, provincial and global economy in order that resource base export production is replaced with production for internal consumption and higher order processing (Weaver, 1984). For example, Marchak (1984) and Bryon (1976) suggest major changes to the forest resource tenure system to encourage more production for local consumption and higher order processing. While providing constructive analysis the critical literature has limited policy relevance given the existing provincial political economy and the broader capitalist economy which the provincial economy is part of.

Similarly the policies advocated by the traditional literature are limited in their effectiveness by the political economy. Is there an alternative perspective to guide
provincial policy for resource towns? This is the question addressed by this thesis. The thesis searches for an answer through a synthesis of; the traditional, and the critical resource town literature, regional development and location literature and planning theory literature.

1.4 Thesis Structure

1.4.1 Justification

There are four arguments for undertaking this thesis. First, there is a need for an analysis of the location theory underlying resource town location. Recent literature focuses on the "bust" nature of resource towns and the alternatives without consideration of the theory or principles behind the location of resource towns.

The second argument for undertaking this thesis is that the current lull in the resource sector provides an opportunity for the Province to reassess its resource town policy. This thesis will contribute to that reassessment.

A third justification for this thesis is the current state of regional planning in British Columbia. The attack on regional planning by the provincial government (Bill 9) suggests the benefits of regional planning have not been articulated. This thesis hopes to contribute to this articulation by demonstrating the importance of a regional perspective in settlement planning for resource communities.

A final justification for this thesis is the schism within
the resource community literature. As demonstrated in the first part of this chapter there is a need to bridge the traditional and the critical bodies of literature if resource community policy is to be advanced.

1.4.2 Method

There are two parts to the method employed by this thesis: the first is the development of a normative model for resource settlement planning. The model provides policy direction for the province. The second part is the testing of the model. The normative model is constructed through a literature review. It is based on a synthesis of three bodies of literature:

- Traditional and critical resource town planning;
- Regional development and settlement or location theory literature including recent rural growth literature; and
- Social ecologist/systems (planning theory) literature.

The first source outlines the context of the problem addressed by the model and the current policy approach. The second provides the foundation for the alternative settlement planning model. To operationalize the model, the social ecologist/systems literature is drawn on to develop a planning process.

The model is first tested by being applied retroactively to two recent examples of settlement planning for resource communities in the of British Columbia. The purpose is to
delinate the similarities and differences between the existing provincial policy and the policy model proposed by this thesis. In chapter 5 the model's potential is demonstrated through hypothetical application to a potential resource town planning problem. The two case studies are Tumbler Ridge and Elkford. The hypothetical case is Northwest British Columbia where preliminary studies on resource development and potential settlement options have been completed. The case studies were selected for the following reasons:

- They provide a rich range of decisions on resource towns;
- The decisions were made by the same body, the Ministry of Municipal Affairs, using a similar process in both cases; and
- Information on the decisions is relatively easy to obtain.

The source of information for these case studies is:

- Existing literature on the three case studies; and
- Interviews with the key actors involved in each decision-making process.

1.4.3 Limitations

The main limitation is the lack of empirical evidence to substantiate the findings. However, empiricism would restrict the abstract nature of this thesis and its exploration of an alternative approach to settlement planning for resource towns. This thesis is building hypotheses, not testing them. While
abstract in nature, this thesis would provide a useful foundation for future analysis.

1.5 Conclusions

The goal of government and industry in planning resource towns is to create a stable workforce. The traditional literature has focussed on the community as being the best level to address the issue of a "stable" workforce supply. The limits of this internal perspective are noted by the critical literature which suggests stability is unachievable in a resource town dependent on unstable external markets and therefore unstable labour demand. Inspite of this criticism the traditional literature has progressed in addressing many of the social and physical problems associated with resource towns. This is demonstrated by the evolution of provincial policy. The limitations of current provincial policy is that the economic concerns have yet to be fully address making even the most recent resource town inherently unstable. This is recognized, in part, by the traditional literature with its refrain for a regional strategy for resource development and resource settlement planning. Unfortunately the regional concept has yet to be truly analyzed, articulated or implemented in the province. Resource projects and towns are still proposed and planned singularly.

In short, there is a gap between the traditional and the critical literature which has resulted in policy which fails to address the root cause of resource town instability. The
solution to bridging this gap would appear to lie in a synthesis of the political economic analysis of the critical literature and the community focus of the traditional literature. One alternative is offered by this thesis. The alternative is called "a territorial regional" perspective. This alternative perspective draws on the regional development and location literature as well as the planning theory literature. Chapter two develops the "territorial" and the "regional" components of this alternative perspective.
II. TERRITORIAL REGIONAL PLANNING

2.1 Introduction

A regional approach to resource settlement planning is postulated by both the critical and the traditional perspective. Yet neither perspective clearly defines what a regional approach is. To articulate a "regional" approach this chapter begins with an exploration of the theoretical underpinnings of regional settlement and regional development theory; both have had a strong impact on theory for resource settlement planning. This exploration is based on the two themes --"territory and function"-- which have dominated the regional settlement and regional development literature and hence have had a strong impact on the traditional and the critical perspective of resource settlement planning.

2.11 Definitions

The Region: "The region is a spatial definiton of the mind, not an objective reality" (English and Mayfield, p.425) and as such a regional definition is only limited by the width of Man's imagination. In the classical sense the region is viewed as a synthesis of the physical environment and the activities of the region's human inhabitants (Weaver, 1984, p.60). Within this broad view, the concept of a region, and the approaches to regional planning have alternated between two main themes; territory and function.

Function: Since the Second World War a region has been perceived
as functional space. For example, a region, according to Julliard (1962), is endowed with a certain degree of self-sufficiency and acts as functional space. Therefore, a region is defined by "its core and the networks it generates". The self-sufficiency of the region stems from the ability to move goods between the region's core and periphery. This functional definition is demonstrated by Simmons' (1979) concept of a "Canadian Urban System". He divides Canada into regions based on urban nodes. In aggregate the regions cover all of Canada. The use of this functional definition is also demonstrated by post World War II regional development theory which assumes "the unifying cohesion to a region is its development around a common export base" (North, 1955, p. 346).

**Territory:** In describing the evolution of regional planning in the United States Friedmann and Weaver (1979) note;

> When we review the changing course of regional planning doctrines over the past half-century, two major forces of social integration appear to alternate with each other: territory and function....The territorial force derives from common bonds of social order forged by history within a given place. Functional ties are based on mutual self-interest. Given inequalities at the start, a functional order is always hierarchical, accumulating power at the top (page 7).

Prior to World War II regional planning reflected a territorial view of regions. The concept of territoriality dates back to the "utopian socialist and anarchist literature of the early 1800's (Weaver, 1984)". The regions were viewed as "real historical places,...which shared a common history, social institutions, and patterns of human/environmental relationships"
(Weaver, 1984, p. 60). In reaction to the "flood of metropolitanism" (Friedmann and Weaver, 1979) the pre-World War II regionalist focussed on the territorial attributes of the region and ways to preserve the region from the sprawling industrial city. The goal was to search for ways to preserve the traditional rural folk lifestyle. For example, Mumford (1938) drawing on a territorial definition of region, envisioned new technology assisting in the redistribution of manufacturing over the landscape; the result being the "ruralization of industry" with a return to the cottage form of production. This would supposedly create economically balanced regions (1938, p. 339).

Settlement planning, with its concern for spatial patterns, has largely been shaped by a functional analysis of regional spatial patterns. The next section explores the relationship between settlement theory and resource towns.

2.2 Settlement Theory, Regional Development Theory and Resource Settlement Planning: The Traditional Functional View

2.2.1 An Overview of Traditional Functional Settlement Theory

The literature does not differentiate between settlement theory and location theory. Location theory describes the spatial effect of economic activity (Mosely, 1974) and settlement theory "is a search for patterns of human organization in space and the focus is spatial interaction" (Weaver, 1974). The major contributors to the development of location and settlement
theory are: J.H. Von Thunen; A. Weber; W. Christaller; A. Losch; and W. Isard (Figure 3) (Haggett, 1972). The thread linking these theorists together is a common concern over the importance of the "friction of distance" as a determinant of the location of economic activity.

J.H Von Thunen
(1800)

A. Weber
(1910)

W. Christaller
(1930)

A. Losch

W. Isard
(1950)

(After Haggett, 1972)

Figure 3 - The Major Contributors to Settlement Planning

Von Thunen, writing in the early 1800's, was the first to describe a correlation between spatial location and the patterns of land utilization. Looking at agricultural land use patterns he postulated that the different uses reflected the cost of transporting the produce to market. Von Thunen's model assumed an isolated state, centered on a market and a homogeneous plane with constant returns to the hectare. The model concluded that the farther from the market the higher the portion of the gross profit paid for transportation. Therefore, a break in land use
will occur where the transportation cost consumes all the profit or Ricardian rent. At this point there will be a shift to a land use with a lower production cost (Figure 4). The theoretical end state is concentric circles of land use centering on a market (Abler et al., 1971; Barlowe, 1972).

**Figure 4 - Von Thunen's Land Use Model**

Von Thunen's model has also been used to explain the pattern of resource extraction. The resources closest to the market will be extracted first.

Weber, writing in the early 1900's, emphasizes three basic location forces: transportation cost differentials; labour cost differentials, which determine the regional distribution of industries; and agglomeration economies and diseconomies. The latter "tend to concentrate or disperse industries within any given region" (Isard, 1956, p.172). Weber addressed the question of where to locate a firm to gain maximum benefit from agglomeration economies: at the source of the raw material; at
the market or at an intermediary site. Weber's location model, in its simplest form, is based on assigning a value represented by weight to the transportation costs of each potential site. The least cost location represents the equilibrium point between the potential sites (Figure 5). The major criticism of the

Examination: "A location model for a steel mill". The location of a steel mill will reflect a trade off between the transportation costs (as represented by weight) of three variables; the inputs of coal and iron and the cost of transporting the product to market.

Figure 5 - Weber's Location Model

Weber model is the lack of concern for historical location patterns and the influence of non-economic factors on location decisions.

Published in 1933, by a student of Weber, Christaller's "central place theory" is still the most widely applied settlement theory. Central place theory postulates that a hierarchy of central places exists based on each centre's market area. The smallest and most numerous centre is the hamlet. The hamlet has the smallest market area and provides the lowest order of goods. At the top of the pyramid is the city. The city has the largest market area and offers the highest order of "central goods" and "central services" such as luxury car
dealers, jewelry stores and medical specialists.

Two concepts central to Christaller's theory are "threshold" and "range" of a central good. The threshold refers to the minimum market size for a firm to break even. It is usually measured in number of people. The range of a central good refers to the distance people are willing to travel to purchase the good in question. While the threshold determines the central good's market break-even point, number of customers required, the range determines the maximum sales area of the central good. The higher the order of the good, the larger the threshold required to maintain it.

Given an isotropic plane, with travel costs equal in all directions, the range of the goods of a central place will be a perfect circle. With more than one central place the individual market areas will form hexagons (Figure 6) given the following assumptions:

- An unbounded isotropic plain with homogeneous distribution of purchasing power;
- Central goods are purchased from the nearest central place;
- All parts of a plain must be served from the nearest central place;
- Consumer movement must be minimized; and
- No excess profits may be earned by any central place.

Christaller's findings also indicated that centers of the same rank order size were spaced regularly and the larger the center the fewer and more dispersed they were (Haggett, 1972).

Losch, a contemporary of Christaller, is known for his
"general theory of location" (Richardson, 1969). As with Christaller's, Losch's theory is based on the assumption of a homogeneous plain with equal costs at all points for industrial raw materials, ubiquitous transportation possibilities and an even distribution of population with identical tastes. Finally, a perfect market is in operation. Based on these assumptions Losch generated a series of equations which predict "size and limits of market area, and the location of production sites within each market area" (Richardson, 1969, p. 107).

Losch's contribution to central place theory was to postulate a more flexible hierarchy. Christaller's model resulted in a stepped hierarchy of central places with each tier comprised of centers of the same size and number of functions. Losch developed a less rigid hierarchy with a continuous sequence of centers. "Therefore centers of the same size need not have the same functions" (Haggett, 1972, p. 293).

While most applicable in traditional agricultural areas
central place theory has also been applied at the community level to explain local markets. However, as a general theory explaining the process of urban growth, central place theory is incomplete. The *ceteris paribus* clause of central place theory assumes away too many factors: migration; historical patterns; technological change; growth of multinational firms serving world markets (Richardson, 1969); as well as agglomeration economies and nodal points.

Examining location theory in the 1950's, Isard followed Weber by focussing on transport costs as the determinant of location. "Overcoming the friction of distance became the major imperative in an Isardian world" (Weaver, 1984, p.81).

Isard's basic concept is the "transport input" based in "ton-miles". Similar to discounting costs over time the transport input discounted cost over space (Richardson, 1969). In the simplest example a plant location reflects a trade off between transport rate for required raw material versus transport rates for the finished goods. A "weight losing" manufacturing process will locate at the source of raw material. A smelting process is one example. A "weight gaining" manufacturing process, such as a brewery, will locate at the market. Building on Weber, Isard further addressed the impact of the agglomeration and deglomeration economies on location. Factors encouraging agglomeration include nearness to service industry, easier access to marketing outlets and economies of scale. The major deglomeration factor is "higher rents" which discourage industrial concentration.
2.2.2 Settlement Theory and Resource Towns

Rural settlements are generally explained in terms of central place theory (Chrisholm, 1979; Berry, 1967). Yet resource towns, which are the predominant form of rural settlement in British Columbia, bear no resemblance to central place theory. Resource towns are located to service the needs of the resource firm and not to service a regional market. Furthermore, most resource based regions, such as British Columbia, have severe geographical restrictions to geometrical settlement patterns. Berry (1967) concludes that resource towns are deviants from central place theory. According to Berry the specialized functions of resource towns gives them a larger residential population than would be expected from a typical central place with a similar market size. One could also argue that the isolated nature of many resource towns means a nonexistent market area -- their threshold and range are the same.

The main factor influencing the location of resource towns is that the industrial plant must locate at the site of the resource being exploited. This factor leaves three options for the resource town. The town can be located at the resource site as typified by the traditional company towns. The second option is for the town to be separate from the industrial plant but within daily commuting distance. This strategy has been favoured by the more recent company towns and instant towns. The final option is long distant commuting from existing settlements for an extended work period (i.e., two weeks on and one week off. This option has become feasible with portable
towns (Parker, 1963) and fly in/out options (Glass, Lazarovich, 1983) replacing the traditional bush camp.

In choosing between the three options the planner will be making a decision which will, in part, reflect Weber's and Isard's models of transportation costs and perhaps more recent residential location models (Alonso, 1960; Kain, 1962). According to an urban residential model the selected residence reflects a trade off to the user between commuting costs to work and his willingness to pay for liveability. The planner, having taken into account site characteristics (suitability of the area for habitation) and project characteristics (life of project and anticipated workforce) the choice between the three options will represents a tradeoff to the residents and the firm between minimizing commuting costs and maximizing liveability. The "Preliminary Feasibility Report on Townsite/Community Development For Northeast Coal" (Ministry of Economic Development, 1977) stated;

From a community land use planning perspective the key relationship is between the place of residence and the place of employment. Ideally, these two land uses should be physically close to one another as possible while ensuring that the residential environment is not adversely affected by such proximity (p16).

A final factor to consider in the location and design of resource towns is that numerous surveys suggests that many of the residents of resource towns enjoy their "rural location" (Roberts, Fisher, 1984).

Under the most recent resource town policy in British Columbia the location decision has to some extent become a
"negotiated" decision (Paget and Rabnett, 1983). For this reason
the location decision of a resource town has become more than an
"exercise in least-cost location analysis" (Chisholm, 1961; p. 97).
Besides economic costs, existing provincial guidelines and
policies, for example the "Guidelines for Coal Development",
ensure that the social and environmental concerns are also
considered in evaluating a resource town proposal. Not
withstanding these additional concerns, which increase the
complexity of the the location decision, the bottom line for the
firm is an economic decision which will reflect the Weberian
principle -- location reflects a trade off between the various
transportation costs.

Since the fifties, the resource settlement literature has
called for a regional framework to address these multiple
concerns. This regional concept relies to some extent on
regional development theory -- as opposed to regional settlement
theory.

2.2.3 Regional Development Theory and Resource Towns

The 1950's and 1960's witnessed provincial and federal
government encouragement of frontier resource development as well as the proliferation of the literature on resource towns.
This period was also a time of government experiments with
regional planning and the advancement of regional development
theory by scholars such as Isard, Mydral, Alonso and Hirschman.
The resource town literature of the time demonstrated an
awareness of the literature on "regionalism" by promoting the
concept of regional centers and a regional planning approach for resource development. To better understand the "affection" of the resource town literature for regional planning it is instructive to briefly outline of the major thrust of regional planning during this era.

Regional planning has numerous definitions and therefore applications. Here are three examples of regional planning. The first is the coordination of large scale physical development such as Northeast coal in British Columbia. The second is the encouragement of area wide economic development best demonstrated by the federal Department of Regional Economic Expansion. The third form of regional planning, and the most common, is geographical subdivision for functional service delivery. This is the primary role of regional districts in British Columbia. The type of regional planning receiving the most discussion in the literature during the 1950's and the 1960's was "regional economic development". The purpose was "to promote regional economic growth through induced urban industrialization" (Weaver, 1984, p. 79). The suggested vehicles were "growth poles" and "growth centers".

Growth poles, which reflect a "functional" view of the region, were first postulated by Francois Perroux in 1950 (Darwent, 1969). The concept originally referred to a dominant industry or group of firms which was the center of economic attraction. A growth pole describes an economic phenomenon with no spatial implications. The concept makes no mention of impact on the area surrounding the growth pole.
Whereas the growth pole concept is descriptive the growth center concept is normative. Drawing on the growth pole concept, regional theorists and public policy analysts have argued that regional development can be encouraged and directed, by focussing public and private investment on pre-selected growth centers. The assumption is that the choosen "growth center" will eventually reach a "take off" threshold, at which stage the growth center will develop rapidly through internal and external economies. The benefits will trickle down the settlement hierarchy and the whole region will benefit. Myrdal (1957) coined the phrase "spread" to describe the positive effects of growth dispersing and "backwash" to describe the negative effects from the tendency of growth centers to concentrate economic wealth and political power.

Hirschman reached similar conclusions to Myrdal but with more faith in the market place.

Whatever the reason, there can be little doubt that an economy, to lift itself to higher income levels, must and will first develop within itself one or several regional centers of economic strengths. This need for the emergence of "growing points" or "growth poles" in the course of the development process means that international and interregional inequality of growth is an inevitable concomitant and condition of growth itself" (Hirschman, 1958, pp. 183-184).

The enthusiasm for growth centers in public policy has also permeated the resource town planning literature with little critical analysis until recently. For example, in the classic study of resource towns Robinson (1962) suggested only those towns which have the propensity to evolve into regional centers should be built. Similar sentiments have been expressed by
other writers including Riffel (1976), Bancroft (1975) and the Task Force on Mining Communities (1983). In fact, one of the reasons given for the construction of the new town of Tumbler Ridge in British Columbia was its potential to become a regional center (Taylor, 1983). While it may be argued that a "regional center" is different from a "growth center", at least in terms of scale, they have similar underlying assumptions. Regional centers in the resource settlement literature are promoted on the grounds that they will develop diversified economies. The assumption is that diversification will result from a concentration of regional functions and the boost provided by centralizing the labour force for the region's resource projects. In other words, focusing public investment to create self-generating economic activity with regional impacts. Yet, growth centers, developed with similar assumptions have not lived up to their expectations and are being seriously questioned by the critical regional development literature (Hudson and Lewis, 1982).

2.2.4 **Summary: The Limitations of a Functional Approach**

The growth center policy as a tool of regional development has had limited success. Experience suggests growth center policy exacerbates the gap between the center and the periphery by draining the periphery of any capital without spreading beneficial economic spinoffs throughout the region (Friedmann, 1966). Hirschman (1958) called this phenomenon "polarization". Myrdal (1957) named it "downward circular
causation". Resource based towns are accused of contributing to this drain by acting as a conduit for regional resources. The singular function of resource towns and their export orientation restricts "value added" or higher order processing of resources. The industrial plant of resource based towns will inevitably have strong forward and backward linkages with its parent corporation and/or suppliers outside the region. In other words, most of the profits are internalized by the firm blocking economic spinoffs to the region. Often, the resource town and its industrial plant's sole contribution to the region is in direct wage payments. Yet this singular transfer also tends to leak from the region in proportion to its level of development. (Jacobs, 1970, 1984).

While not all regional theorist are totally critical of growth center policy (i.e. Moseley, 1974) a general negative concensus has developed. One view is that the policies have had little effect. A recent analysis of growth pole policy in France by Aydalot (1984) found, in contrast to the expected results, that the areas which were not designated as growth centers were the ones that have grown. A more critical view expressed by the neo-marxist and the dependency theorists like Andrew Gunder Frank, (1967), is that growth poles exacerbate the disparity between the core and the periphery at a regional and a global level. Growth center policy has also been heavily criticised for favouring the large transnational firm which can use local host capital to extract local wealth for accumulation in the firm's parent country. To quote Friedmann and Weaver
"the growth center doctrine is completely attuned to the ideology and planning approach of the transnational corporation" (1979, p. 188).

In terms of theory, two conclusions can be drawn. First, the location of resource towns is better explained by the Weberian principle than by central place theory. This is not to forget that besides minimizing commuting costs recent resource settlement location decisions also reflect, at least in theory, social and environmental concerns.

The second conclusion is that the concept of a "regional center" strategy for resource towns is questionable. As a tool for regional development regional centers have received mixed reviews and the theory behind them has come under criticism. To use regional centers as a strategy for resource development is further complicated by the location of resources which do not always lend themselves to a regional center's strategy.

### 2.3 Settlement Theory, Regional Development Theory and Resource Settlement Planning: The Alternative Territorial Planning View

While the classical concept of territoriality describes a type of region, in its most recent reincarnation it generally refers to an alternative to functionally based regional economic development planning. In the introduction to their book, "Development From Above or Below?", Stor and Taylor (1981) state:

The key issue discussed in this book is whether inequalities can be reduced by higher or more effective functional integration, both on a national and an international scale; or whether internal
Territorial integration (Friedmann and Weaver, 1979) and a greater degree of internal self-reliance with "selective spatial closure" (Stor and Todtling, 1978) would be more effective (1981, p.1).

Territorial planning emphasizes holistic development as opposed to strictly functionally based development. Instead of development based on export, internally based development is encouraged, taking into account the region's historical and cultural ties. This would appear to make economic sense since development is premised on encouraging the activities that the region is most adept at doing. In economic terms this means exploiting one's comparative advantage.

As Weaver and Friedmann (1979) document territorially based regional planning was advocated in the early 1900's with mixed success. Today, territorial planning is more associated with third world development as exemplified by Stor and Taylor (1981). However, territorial planning is gaining more favour as a legitimate development policy in western nations. The failure of large scale, capital intensive regional development projects in the west, as assessed by some analysts (Hudson and Lewis eds., 1982), has resulted in senior governments, in such places as Great Britain, Canada and the United States, encouraging community based urban economic redevelopment (Hutton, 1984, p.7; Weaver, 1984).

The concept of "territory", being more a philosophy than a normative theory, presents a problem for planners. As Stor and Taylor state:

There seems to be no well-structured theory available as yet for an alternative paradigm of development from
However, there have been several attempts to develop such a paradigm. One example is Friedmann's "Agropolitan" approach for underdeveloped rural areas which espouses self reliance, communalization of the means of productive wealth, and equal access to power (Friedmann and Weaver, 1979).

A territorially based strategy for developed nations is suggested by Weaver (1984). The Weaver approach is to focus on "use value production" as opposed to "production for exchange". To break the multinational strangle hold on regional economies Weaver suggests the establishment of regional corporations. To take advantage of the spatial division of labour the corporations would enter into joint ventures with other regional corporations to share compatible specialized services. Within this new territorial approach to regional development, the role of regional planning, according to Weaver, is to "identify the concrete possibilities for regional production and bring these to popular attention" (1984, p. 156).

Despite the lack of a concrete paradigm there appears to be several tenets to a territorial planning approach. These are:

- An internal or local initiative perspective on development;
- Community based as opposed to externally imposed goals;
- A holistic view of development -- socially, politically, culturally as well as economically;
- The region defined as a composite of historical ties, cultural space, economic space and political space;
- Respect for the ecological base of the region; and
• A long run perspective. (Gunder, 1981; Sullam et al., 1978; Friedmann and Weaver, 1979).

The next section (2.3.1) discusses the relevancy of territorial planning for resource settlement.

2.3.1 The Limits and Potential of Territorial Planning for Resource Settlement Planning

A territorial approach offers an alternative perspective to the traditional and the critical resource town literature. Advocates of territorial planning like Weaver, Friedmann, Stor and Taylor concur with the critical literature on the cause of resource town instability; that the exploitation of undeveloped resource frontiers by multinational corporations perpetrates "the loss of economic rents, opportunity costs (i.e., foregone alternative forms of development) and economic instability or boom townism" (Weaver, 1984).

Yet the question remains; "how truly relevant is a regional territorial approach for resource settlement planning, which is inherently community focussed and secondly functionally oriented?" Furthermore, the spatial focus of settlement planning limits its influence on the "economic" decisions surrounding the resource development in question. Given these parameters there are two arguments against the application of territorially based planning for settlement planning.

The first argument is that since settlement planning is concerned with functional relationships it is impossible to practice it from a territorial approach. The second argument is
that within the current structure of our economy, the resource project decision will reflect a functional mindset and will contribute to the functional integration of the region. Within this framework there would appear to be no room to implement a territorially based settlement policy, even if such a policy were possible.

To address the first argument, a territorial planning approach is more a philosophy than a theory. Central to it is a "holistic" concept of the region. This implies an understanding of the functional linkages and relationships within the region as well as the region's territorial attributes -- culture, history, and economic base. The adoption of a territorial approach examines the functional linkages from a territorial view. This allows for a greater understanding of all the factors which have a bearing on the acceptability of the settlement location as opposed to concentrating only on "the friction of distance" factor. For example, will the settlement option contribute to local service industries by providing an expanded market?

The second argument is a question of implementation. The fact that the global economy reinforces the functional integration of regions does restrict the degree to which a complete "territorial" approach can be implemented. But there appears to be room for a territorial approach to settlement planning and much of the remainder of the thesis explores this question and provides examples of where regional planning in North America has taken some tentative steps towards a
"territorial approach".

In examining the implementation aspect of a "territorial" approach section 2.3.2 begins by exploring the traditional goal of resource settlement planning; community stability, and an alternative goal, regional resilience, which appears to be more compatible with the concept of "territoriality".

2.3.2 A Focus for Territorial Planning: Regional Resilience

Two of the most common words in the resource town literature, from both the traditional and the critical perspective, are "stability" and "region". Yet in practice stability appears as elusive as ever and as there are few examples of a truly "regional" approach to resource settlement planning. The next section will argue that an alternative goal to community stability, which is compatible with a territorial planning approach, is to focus on achieving "regional resilience".

2.3.2.1 The Concepts of Resilience and Stability

Stability and resiliency are difficult concepts with varying definitions none of which are particularly satisfying. Traditionally, ecology and other fields have defined stability as "the ability of a system to return to an equilibrium state after a temporary disturbance (Holling, 1973)".

More recently ecology has defined stability as a "measure of a system's resistance to displacement from an equilibrium. It may be reflected in the rate of return to equilibrium after a
perturbation or in the amplitude of displacement. In general, the greater the rate of return and the smaller the amplitude the more stable the system (Rees, 1985). In many fields resilience and stability are treated as being synonymous, Holling sees a distinction between stability and resilience. For Holling, the definition is important in determining the appropriate strategy for systems management. Holling first defined resilience "as the property that allowed a systems to absorb change and still persist (Holling, 1973)." Holling (1978) later revised this definition of resilience on the grounds that it implied only "first strike absorption capacity" when dealing with partially understood systems. This early definition limited management strategies since there would be a concern for pushing the system beyond the limits that the system could respond to.

As an alternative definition Holling (1978) offers; "resilience is a property that allows a system to absorb and utilize (or even benefit from) change (p.104)." This definition implies, "a fully resilient system is one that persists by adaption (through negative feedback) to change in the environment in which it is embedded (Rees, 1985).

By their initial definitions there is little distinction between resilience and stability. A highly stable system may survive limited perturbation without changing and therefore demonstrate resilience. Holling's more recent definitions suggests a strong distinction between resiliency and stability. Stability is a measurement of a system's ability to resist change stemming from perturbation. Resilency is a measurement
of a system's ability to adapt to change. A resilient system will not necessarily return to an equilibrium point after perturbation but stabilize at a different equilibrium point. For example, a town which loses an employer and after a period of flux is able to return to its previous employment level through attracting a replacement employer demonstrates stability. A town which loses a major employer and stabilizes at a smaller population or retains the same population but becomes reliant on jobs external to the town or in a different sector demonstrates resiliency.

It is worth noting that a system may appear to be resilient at one time and spatial scale and appear non-resilient at a different time and spatial scale.

To examine the attributes of resilience Holling (1978) draws on Herbert Simon's (1973) discussion of hierarchical organizations. All systems are hierarchical being comprised of several levels. "Each level consists of a number of components with different functions whose integration produces the next higher level".

Each level has a distinct time and spatial scale and the higher the level the slower the time scale and larger the spatial scale. Resilience is displayed when a system has numerous levels with small steps between the various levels. Holling uses Simon's example of two Swiss watch makers to illustrate this point. The first watch maker builds in stages. When he is interrupted the damage is contained in the stage being worked on. The second watch maker builds from the basic
elements. Everytime he is interrupted he has to start over having yet to reach a "stable configuration". The first watch maker by taking small steps is using a resilient or "safe failure" strategy. The second watch maker takes large steps on the assumption that the unexpected, an interruption, will not occur.

To summarize, from an ecological perspective, resilience is dependent on certain kinds of diversity and interconnection between the component parts. Limited diversity will result in larger steps in the hierarchy. The larger the steps, the greater the knowledge and investment required to climb the step. Therefore, the magnitude of failure is increased if the unexpected does occur. Holling concludes that in terms of management "the fail safe" approach of the second watch maker and the nuclear power plant while appropriate for totally known systems, is not appropriate for "uncertain, heterogeneous and partially known ones". Instead, the preferred management style to maximize resilience;

would emphasize the need to keep options open, the need to view events in a regional rather than a local context and the need to emphasize heterogeneity. Flowing from this would be not the presumption of sufficient knowledge, but the recognition of our ignorance; not the assumption that future events are expected, but that they will be unexpected (Holling, 1973, p. 21).

While one must exercise caution in borrowing concepts from other fields, there are precedents and ecological and social systems do share similar attributes. For example, the strong similarities between economic and ecological systems are
documented by Berstein (1981) and urban geography has a long history of using an ecological approach to examine urban systems (Herbert and Smith, 1979).

In an earlier paper Holling (1969) examines the strong similarities between ecological and social systems by comparing a predator/prey and a real estate market model. Holling notes social and ecological systems both have:

- A large number of components which are connected by a variety of interactive pathways;
- A long and short term history;
- Spatial attributes which ensure that an event at one point will have affects at other points in space; and
- Structural properties such as thresholds and limits.

Regarding resource settlements, the concept of stability is a constant theme throughout both the traditional and the critical literature. The traditional literature (Figure 7) shares with the traditional ecological literature a similar definition of the concept of stability and resiliency. They both define stability and resiliency as the ability to maintain a stable state and resist change. Also, both bodies of literature assumes the future is predicable and plan accordingly.

The critical resource settlement literature argues that labour stability is nonobtainable given the unstable external environment of resource towns. This view is closer to a modern ecological view in accepting that systems are subject to stochastic events. The critical resource settlement literature diverges from the modern ecology literature in its management
<table>
<thead>
<tr>
<th>ECOLOGY</th>
<th>TRADITIONAL</th>
<th>CRITICAL/MODERN</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANAGEMENT STRATEGY</td>
<td>Assumes a predictable future. Relies on &quot;fail-safe&quot; planning.</td>
<td>Assumes an unpredictable future. Relies on &quot;safe failure&quot; planning.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RESOURCE SETTLEMENT LITERATURE</th>
<th>TRADITIONAL</th>
<th>CRITICAL/MODERN</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANAGEMENT STRATEGY</td>
<td>Assumes a predictable future. Relies on &quot;internal&quot; processes.</td>
<td>Restructure the economy to create a stable predictable future. Fail safe planning.</td>
</tr>
</tbody>
</table>

Figure 7 - A Comparison of Ecological Concepts with Resource Settlement Concepts

strategy. Assuming that labour demand stability is a feasible goal in the long term, the critical literature argues for radical restructuring of the economy. An ecological strategy based on the concept of resilience rejects the goal of stability, accepts existing conditions and explores ways to create a system which can adapt to perturbation through a safe failure strategy.

From the above discussion the ecological concept of resiliency and the resulting management style provides a possible goal to bridge the internal and the external perspective of the resource settlement literature. This theme has recently been partially explored by Paget and Wallisser.
They suggest that the "goal" of resource community planning should be resilient communities defined as "communities able to withstand the period or sporadic misfortune that besets all resource communities at some point in time (Paget, Walisser, 1983, p.1:2).

The limits to Paget and Walisser's treatment of resilience is that the focus is still at the community level and the distinction between stability and resilience remains hazy.

In contrast, Holling argues that the adoption of a resilient strategy implies acceptance of limited knowledge and planning for "safe failure". The best level to operationalize a "resilient" strategy, according to Holling, is at the regional level with the focus on creating diversity. In terms of resource settlement planning this implies a shift in focus from community stability to examining the settlement options in terms of their contribution to regional resilience. This might imply policies to spread, in time and space, the benefits and risks of the proposed resource project --a safe failure approach. Under this strategy a new town would be given the least priority since it implies "a very large step" in terms of the settlement system's hierarchy and therefore necessitates high expenditure, perfect knowledge and potential for large failure.

In summary, based on the ecological definition a resilient region can be defined as being:

- Diversified: Economically in terms of the types and numbers of economic activity, culturally and socially in terms of "richness" of life as well as a strong
personal affinity for the region;

- Intra-regionally interlinked; individual settlements are highly interconnected with a strong sharing of services. This definition is similar to the definition of a territorial region; a region being a composite of historical ties, cultural space, economic space and political space.

The adoption of a territorial approach combined with the goal of regional resilience makes it possible to move beyond the community focus of the traditional perspective and to answer some of the criticism of the critical perspective.

The concept of regional resilience, while not only attractive in theory, receives some support from an examination of changing rural settlement patterns.

2.3.3 Support for Regional Resiliency: Recent Rural Settlement Trends and Alternative Settlement Concepts

2.3.3.1 Recent Rural Growth Trends

Recent American and Canadian census data have documented significant demographic shifts during the 1970s. Rural areas grew faster than urban areas and the fastest growing rural areas were the smallest towns and the open countryside (Hodge and Qadeer, 1983; Long and DeAre, 1983). This trend is counter to the prevailing theories of urbanization which sees continued
growth of megacities and reflects opportunities arising from an advanced industrial society (Robinson, 1981).

Changes in technology and modes of production previously resulted in rural/urban migration and mega-cities. Recent technological and economic changes are spurring rural growth by increasing societal mobility. The main factors contributing to this increasing mobility and the resultant rural growth are:

• Technological innovation allowing the expansion of public and private service industries into rural areas, providing an alternative economic base to agriculture;
• The spread of urban services to rural areas which has improved the quality of life and made rural areas more attractive for technological and social development; and
• Increased linkages between rural areas and urban centers which have improved the attractiveness of rural areas for people, businesses and industry (Bradshaw and Blakely, 1982).

North Americans have always stated a preference for living in small towns and rural areas (Zuiches, 1982). As a result of the above three factors a significant portion of them are now able to exercise their preference. Today's rural migrants span a wide age range, tend to be well educated, belong to the middle and upper classes and are moving for life style reasons (McRae, 1980; Bradshaw and Blakely, 1982).

the urban—rural migration is revitalizing rural areas which were previously considered void of any economic and social
future. Six ideal types of rural growth communities are identified in the literature (Brown and Beale, 1981; Berry, 1980). These are:

- Government/trade communities;
- University/professional communities;
- Retirement communities;
- Tourism communities; and
- Resource based boom communities.

In British Columbia there are examples of all of these with the resource based boom community being the predominant form. Between 1971 and 1981 there was significant growth in the small (1,000 to 2,000; 39% growth), the medium small (2,500-5,000; 39% growth), and the medium size (5,000 to 10,000; 44% growth) towns in British Columbia (UBC Center for Human Settlements, 1984, p.10).

2.3.3.2 Changing Regional Settlement Patterns

The non-economic basis of much of the rural growth has had a significant impact on the function and spatial structure of rural communities. In a case study of a rural town in southern Ontario, Fred Dahms (1983) found that while the town had continued to lose economic functions (since 1966 a 22% decrease in businesses) the town had continued to gain in population -- a 19% increase since 1966. The town's services and employment functions had been usurped by other regional centres while it specialized in being an attractive place to live. Similar examples have been documented in the United States (Hart, 1975). The specialization of rural areas has created rural
communities which are quite different from their predecessors in terms of settlement patterns and function. They have evolved from hierarchically ordered central places serving a region, as described by Christaller, into communities specialized in a function based on the area's dominant attribute be it sunshine or minerals.

To describe the new settlement trends the rural settlement literature has borrowed Ian Burton's (1963) "dispersed city" concept. The term is generally used to refer to a group of urban nodes of similar size, in close proximity to one another, separated by tracts of non-urban land and functioning as a single urban entity (Hayes, 1976). It appears to be most noticeable, or easily measured, in retail trade patterns.

In describing the revitalization of rural areas Hart uses the dispersed city concept in a slightly different context. He hypothesizes that in losing their central place functions small towns and villages have specialized; one might have the best car dealer, another the best restaurants. Hart suggests, as there are zones of use in the city, there are similar zones of use in the country (Hart, 1975). In its most abstract form a person who lived in village A would work in village B, shop in village C and use the recreational center in village D. In their analysis of rural settlement trends in Canada Hodge and Qadeer (1983) suggest that this interpretation of the dispersed city concept is applicable. That;

small centers no longer function according to the concepts of metropolitan dominance and central-place theory... A review of the trade center relationships and the work commuting patterns suggests that many
basic needs are provided by regional complexes of towns and villages. In each rural locality a number of small centers collectively provide from their own distinctive arrays of stores, services, jobs and social and cultural activities for the residents of small towns and the countryside. (page 97).

There would appear to be an analogy between the resilience demonstrated by the growing, resilient, rural regions and resilient ecosystems. Both are comprised of specialized organisms which are highly interlinked.

The concept of regional resilience has been recognized in the field of rural planning. There are several policy examples of attempts to encourage settlement clustering for the purpose of sharing services and generating economies of scale in Ontario and Manitoba (Ontario Government, 1978; Faculty of Environmental Studies, 1974)

2.3.3.3 Implication for Resource Settlement Planning

It would appear that changing rural settlement patterns provide a valuable lesson for resource settlement planning; a resilient settlement is often part of a resilient region and resiliency is dependent on the diversity of the region's settlements and the degree to which the settlements are interconnected. A similar conclusion is reached in a paper on human settlements in the Yukon (Denike, 1979). As opposed to concentrating investment in Whitehorse, Denike argues:

The strategy which would contribute to real benefit, in terms of quality of life, to residents is to encourage private investment in the service towns and to allocate public investment to the service towns and
several of the hamlets" (p.93).

The rural growth literature also demonstrates the futility of attempting to create a stable resource community in an isolated and unpleasant location. Under such circumstances, it would seem logical that alternatives to resource towns be explored, especially those options which could enhance the resilience of existing settlement networks in less isolated areas. For example, chapter five notes the potential of using long distance commute options from existing communities in the southern half of Northwestern British Columbia to service potential resource development projects in the northern half of the region.

2.4 Conclusion

The goal of "regional resiliency" acknowledges the boom and bust nature of resource projects but contends that the impacts on communities can be dampened. The key is to plan at the regional level and to concentrate on developing regional diversity and intra-regional linkages. This assertion is supported in theory by the ecology literature and in practice by recent rural growth trends.

The best "path" to the goal of regional "resiliency" is through a "territorial regional" approach. It replaces the "center/periphery" domination concept of the functionally based regional settlement and development approach with a more holistic approach. Holistic, internally based development is advocated which builds on territorial ties and is ecologically
sound and long term in outlook. This enables the worker to replace "place mobility" with "job mobility" (Hightower, 1985). In the traditional literature the worker is resigned to "place mobility". He/she has to move in search of work. An implemented regional/territorial approach emphasises job mobility; the worker moves from job to job within the same region in times of economic hardship. Chapter three is an exploration for the most appropriate theory to implement a territorial planning approach. For this reason it is essentially an examination of theories "of" planning as opposed to chapter two's exploration of theory "in" planning.
III. THE IMPLEMENTATION OF TERRITORIAL REGIONAL PLANNING: A SUGGESTED STYLE

3.1 Introduction

Chapter two proposed "territorial regional planning" model as an alternative approach to the present provincial policy for resource settlement planning. This chapter addresses the questions of what type of planning process is required to implement a "territorial regional planning" model and who should participate in the implementation.

"The planning process" question is addressed through an examination of the social ecologist/system planning theory literature. The emergence of this literature in the 1960's provides an alternative paradigm to the "rational comprehensive" (Faludi, 1978) planning paradigm. Based on this initial discussion of theory, "strategic" planning is suggested as an alternative to the rational comprehensive "master plan" planning process.

The "participation" question is explored by comparing "top down" with "bottom up" planning and the implications of both styles for resource settlement planning.

Out of this theoretical discussion a typology of planning options is established. The options are examined through examples from the field of regional planning.
3.2 An Alternative Planning Process

3.2.1 The Social Ecologist/Systems View of Planning

Paralleling the social turmoil of the late sixties was a questioning of the planning and policy making process. Drawing on concepts evolving in the fields of ecology and systems analysis, the planning literature examined the way problems were defined and the appropriateness of the accepted planning process to tackle these problems. The adoption of a systems-ecological view of the world led planners to the conclusion that policy problems occur within an open system where the reference points are continually shifting.

This redefinition of the problem context was best articulated by Rittel and Webber (1973) who developed the dichotomy of tame and wicked problems. A tame problem is a science engineering problem. It is easily defined, testable (the solution is right or wrong) and has finality. A wicked problem is a "problem of organized complexity." There is no right or wrong answer or correct problem definition. To paraphrase Mason and Mitroff (1981) the characteristics of wicked problems are:

- **Interconnectedness:** each problem is connected to other problems;
- **Uncertainty:** the problems exist in a dynamic and largely uncertain environment;
• **Ambiguity:** there is no one correct view of the problem;  
• **Conflict:** competing interests can be expected; and  
• **Societal constraints:** solutions are limited by social, organizational and political constraints.

Resource settlement problems display all the characteristics of a wicked problem. An example is Tumbler Ridge. The criteria used to examine the settlement options included ecological and social parameters as well as the potential for creating labour force stability. Of all the sites considered the final Tumbler Ridge site, while the most attractive for human habitation, has the greatest impact on wildlife. This demonstrates the "interconnectedness" of problems; the solution of one problem (site location) created another problem (ecological impact). The "uncertainty" aspect of planning Tumbler Ridge is poignantly made by the current low coal prices and the financial troubles and production difficulties being experienced by the Quinette mine. Both problems were unanticipated in the planning phase for Northeast coal. There is ambiguity surrounding Tumbler Ridge in that there will probably never be a consensus over whether or not Tumbler Ridge should have been built. "Conflict" was also closely associated with Tumbler Ridge. There was conflict between labour and government, the provincial and the federal government, the private sector and the provincial government and between local and provincial governments. Finally the decision to proceed with northeast coal reflects "societal constraints". The decision was based on political and social considerations as
well as economic. The provincial government viewed the project as a catalyst for the development of northeastern British Columbia. The opposition has viewed it as a sinkhole for the taxpayer's money.

The traditional planning approach to problem solving is the rational comprehensive approach and is typified by the master plan. Rational comprehensive planning flourished in the post World War Two era where technological solutions were developed to solve technological (tame) problems. The tools included cost-benefit analysis, goal achievement matrices and planning programming and budgeting systems. Ozbekhan (1966) called this approach "deterministic" --it plans for the future based on an extrapolation of past trends. In contrast, the social ecologists and system theorists argue that we are living in a world where the unexpected can be expected and therefore a planned future based on past trends is not planning. Since the modern world provides numerous choices and consequences (Ozbekhan, 1966) we should be planning to manage uncertainty (Friend and Jessop, 1969). Or as Trist argues, we should be creating a range of possible futures (Trist, 1978). The inadequacy of using scientific-engineering processes to tackle "wicked" problems was well stated by the Bellagio Declaration on Planning; "science in planning today is often used to make situations which are inherently bad more efficiently bad" (Bellagio Declaration, page 8).

The adoption of a social ecologist/system perspective of policy problem definition has led to a new model for problem.
solving. A precis of this new model suggests five prominent themes. These are;

- **Policy emphasis**: traditionally there is little questioning of policy— we do it because we have the technology to do it (e.g. we build bigger and better bombs because we have the technology to do it). Instead, planning should focus on what we **ought to** be doing and the operationalization of the resulting goals (Ozbekhan, 1969);

- **Interdisciplinary thinking**: the boundaries of planning must be broadened from the specific to the whole system of society (Jantsch, 1975; Churchman, 1968). Or as Friedmann (1973) suggests we must move from "functional" rationality (expert knowledge which focusses on the most efficient means) to "substantial" rationality (or wholistic thinking— concern for analysis of both the ends and the means).

- **Bottom Up**: planning "must be performed at the lowest effective level to make possible a maximum of participation in the planning itself and in its implementation" (Bellagio Declaration, 1968);

- **Flexibility**: strategic choice involves "continuous choice in a changing environment" (Friend and Jessop, 1969);" and

- **Experimental**: the process must continue to evolve in step with society which is only possible if learning and experimentation are emphasized (Trist, 1978; Bellagio Declaration, 1968). Yet the knowledge generated must be useful. This suggest the generation and use of both
personal and processed knowledge (Friedmann, 1973). Personal knowledge is direct knowledge based on experience and therefore is reflected in our values, goals and aspirations. Processed knowledge is based on systematic observations and measurement and is generally concerned with explaining past relationships. For this reason processed knowledge can create a distorted view of reality (Friedmann, 1973).

The development of these five themes has redrawn the classical hierarchical planning model with its normative, strategic and operational levels. While policies still filter down, the emphasis of each level has changed and strong feedback loops have been grafted on between the tiers. Figure 8 portrays a planning process based on the five themes. The starting point is the normative level where policy formulation occurs. The focus is on what we "ought to do". In formulating policy a bottom-up approach is advocated and every attempt is made to formulate policy at the lowest level to maximize the participation of the impacted parties. Similarly interdisciplinary thinking becomes key in widening the planning policies from the specific (i.e. profit) to include broader impacts such as social and environmental concerns. This bottom up approach is also advocated in the corporate sector where strategic planning is being shifted from the "isolated bureaucracy of planners" to the line managers (Businessweek, 1984).

The strategic planning level is key in "wicked problem
Figure 8 - A Revised Planning Process Model

Societal Norms

Policy goals \[\rightarrow\] Normative Planning

Strategic objectives \[\rightarrow\] Strategic Planning

Operational targets \[\rightarrow\] Operational Planning

Resources

Explanation: The double arrows indicate the area of greatest concern for planners. Societal norms and resources are constraining factors which must be respected.

Feeding back to the normative and forward to the operational level of planning the focus of the strategic level is "how can it be done". The strategic planner has two roles. He provides advice to the policy makers on what policies are "achievable" and based on the policies he develops "strategic objectives" which are used to give direction to the operational planners. In establishing strategic objectives the strategic planner emphasizes flexibility to manage uncertainty and interdisciplinary thinking to understand the systemic nature of the problems. Finally, the strategic planner encourages experimentation to ensure evolution of the planning process as the problem evolves.

Most planning still occurs at the operational level with little questioning of the norms. It is what people generally
mean in using the term "planning". The other two levels are usually assumed as given with little questioning of their assumptions. Within the new model the operational level, by focussing on "what will be done", is synonymous with implementation. Traditional planning tools are used but well defined within the context of a systems approach.

As the critical component of a social ecologist/system's model, strategic planning has a more encompassing meaning than the traditional definition of strategic planning. Strategic planning is generally defined as the generation of strategies to implement given policies. An example is the Province of British Columbia's, Ministry of Environment, strategic planning process. Under the process strategies are generated at the local level to implement the given provincial policy (O'Riordan, 1984). This thesis defines strategic planning in a broader sense. Planning at the strategic level is the filter between what "ought to be done" and "what can be done". Assuming that the unexpected will happen strategic planning respects natural forces and does not attempt to remodel society; there is no master plan. Instead, to address the problems defined at the normative level, strategic planning utilizes a problem solving process which is analytical and wholistic. By being analytical strategic planning attempts to "subdivide a complex problem into its elements and attempts to determine the nature of the linkages that give organization to its complexity". By being holistic strategic planning attempts to understand the problem as a whole--the task of synthesis (Mason and Mitroff, 1981).
In contrast to master planning, strategic planning is capable of incorporating the suggested tenets of a social ecologist/systems perspective. By being holistic strategic planning is in a position to encourage "policy emphasis" and "interdisciplinary thinking". By being analytical strategic planning can incorporate "flexibility" and "experimentation".

3.2.2 **Bottom-Up Planning versus Top-Down Planning: The Case for Local Government**

Top-down planning is planning imposed from above. Decisions flow down the organizational structure as exemplified by traditional corporate planning. Planning in the public realm is often "top down" relying on public review as opposed to public participation. Functionally based regional development planning relies on top down planning since centralized decision making is required to designate growth centers and to put in place the mechanisms to implement the decision. Similarly, top down planning is compatible with master planning which requires imposed authority to implement policies.

Bottom-up planning is a tenet of the social-ecologist/systems perspective; "planning at lowest effective level" and therefore is compatible with strategic planning. By allowing people to plan their own future, bottom-up planning is also very compatible with the concept of "territoriality".

The question is, how does one facilitate participation in the planning process when traditionally, public input into the
planning process has been restricted to public review of the policy issue in question? One method to move from public review to public participation is through the institution of local government; assuming a truly representative form of local government with authority over local concerns. The use of local government is compatible with a bottom up approach — the devolution of power to the smallest association of affected people which, in most cases, is local government.

Notwithstanding this philosophical argument, there are strong economic reasons for encouraging local government. Local governments are regarded as more efficient and effective than higher levels of government in the allocation of public funds; presumably they are more sensitive to the citizen's demands. In contrast, centralized governments impose blanket programs which, given the diversity of local situations, can result in poor allocation of funds. The use of local government ensures that expenditure decisions are closely related to the funding source—the local tax payer. In theory this should enforce greater thriftiness and accountability (Oates, 1972).

Another benefit of strong local government is more meaningful public participation in the decision making process and the building of community independence (Deballa, 1983). This rise in community independence has economic ramifications. Trist (1978) argues that the direction of innovation is from the periphery to the core and from the community level (bottom-up) to the state. In his article "New Directions of Hope" Trist (1978a) gives several examples of self help—local initiatives,
generated by a strong sense of community, which have spawned development in areas that were relegated to the backwater of center dominated development. Examples are the Sudbury 2001 project, the Craigmillar Festival Society outside of Edingburgh and the Jamestown New York project (Trist, 1978a).

3.3 The Option Field of Regional Planning Styles

Arising from the foregoing discussion is an option field of potential styles for implementation of a regional territorial approach to resource settlement planning. The Option field (figure 9) shows a continuum of options along two axes; the "process" axis and the "participation" axis. The result are four broad options represented by the four quadrants. The four options are discussed below.

3.3.1 Top-Down Master Planning

This quadrant represents the traditional planning approach. Decisions are made by a decision making body and imposed on the effected parties. The decisions are comprehensive and based on the assumption of complete knowledge and the ability to predict future events and to shape the final outcome. In British Columbia, an example would be hydro dam planning in the 1950's. In terms of regional planning top-down master planning is manifested in the functional approach to regional development. A growth center policy requires imposed authority to be effective.

An example from regional planning is the 1970 Northwestern
MINIMAL PARTICIPATION

PREDOMINATELY MEANS ORIENTED

Top-down Strategic Planning

Bottom-up Strategic Planning

MAXIMUM PARTICIPATION

PREDOMINATELY ENDS ORIENTED

Top-down Master Planning

Bottom-up Master Planning

Figure 9 - Option Field of Styles for Regional Planning

Ontario development strategy (Ontario Government, 1970). The 1970 strategy was based on classical regional development and settlement theory with emphasis on "growth centres" and "central place theory" respectively. Calling itself a "comprehensive development strategy", the 1970 strategy designated several centres as "primate centers of opportunity" based on their potential as "growth centres". The assumption was that growth would filter down the settlement hierarchy and from the designated regional centres once the regional centers reached the point of economic "take off". Settlement policy was oriented towards facilitating the growth centres. New towns would be discouraged and infrastructure would be targeted
towards the selected growth centers.

In summation, the 1970 strategy was based on the assumptions of a functional definition of the region and of a predictable future. Based on these assumptions it adopted a top-down master plan process which reinforced the functional definition of the region.

3.3.2 Top-Down Strategic Planning

The 1970's witnessed a move in the literature, and to some extent in practice, from "master planning" to "strategic planning". This would appear to reflect a better understanding of how systems work. To paraphrase Holling (1973) a better myth had evolved. Rittel and Webber (1973) also argue that the move away from rational comprehensive planning reflected a growing consensus that the classical model of planning was not producing results. This led to experimentation with various interpretations of "strategic planning". One form was top-down strategic planning. An example is the 1978 Northwest Ontario Development Strategy (Ontario Government, 1978) which was initiated in response to the inconclusive results of the 1970 strategy.

The 1978 strategy, while still top-down, rejected in part the geographical and deterministic approach of the 1970 strategy. Accepting the premise of an unpredictable future the 1978 strategy replaced a set of unrealistic goals with more achievable objectives. The purpose of this strategic approach was to ensure that existing settlements would be in a position
to take advantage of economic opportunity no matter what form it emerged in. The 1978 strategy did not attempt to predict the type and location of future economic activity. Adopting a strategic approach the 1978 document accepted that complete knowledge is unobtainable and the future is not entirely predictable.

Moving slightly towards a territorial definition of the region, the 1978 strategy saw the solutions to the problems faced by both developed and underdeveloped areas arising from better dialogue between the actors involved — industry, local and provincial governments. The 1978 settlement strategy was broadened, in reflection of this territorial perspective, to include explicit social goals as well as economic goals. This led to a more flexible settlement policy since settlement patterns were no longer viewed within a strict economic context.

The 1978 strategy rejected central place and growth pole theory with the exception of the primate center of Thunder Bay. As a settlement alternative to growth centres the 1978 strategy suggested community clustering with specialization within the clusters. Three possible areas for community clustering were identified based on the cluster's potential to develop commercial, administrative and transportation links. This again reflects a flexible strategic approach and the belief that settlement patterns do not necessarily have to be hierarchical to influence economic development.

In short, the 1978 plan moved in part from a master plan approach to a strategic approach and began to move from a
functional to a territorial definition of region. In terms of territoriality the 1978 document accepted the assumption that development requires more than establishing functional linkages. The conclusion was that settlement policy must encompass social as well as economic concerns to ensure holistic development. To implement the 1978 strategy a strategic approach was adopted in recognition of the unpredictability of the future.

Another example of a strategic approach to regional planning is the 1974 Manitoba development strategy (Faculty of Environmental Studies, 1974). A joint effort by the Faculty of Environmental Studies at York University, Toronto, and the Manitoba government, the derived study was an attempt to address the problems of rural decline by providing a viable alternative to the pull of the metropolis. In terms of a settlement policy the Manitoba strategy proposed the settlement cluster concept. The study concluded that a number of centers "have a number of common functional inter-relationships and consequently may be viewed as having the attributes of one huge centre". The goal was to create a "functionally interdependent system of settlements with each community specialized in a particular function." Government's role would be to support the promotion of functional linkages, inter-community mobility and the decentralization of services.

The strategy displays signs of being "strategic" by focussing on "actionable" policies to improve existing settlement networks. The strategy did not offer an alternative end state. Instead, it identified a problem and suggested
incremental and actionable strategies to address the problem. If resolution of the problem is not forthcoming, the actions are reversible. The policies were also based on the premise of building resiliency into the system so that the proposed settlement structure was not dependent on one possible future but could adapt and utilize a range of future parameters.

3.3.3 **Bottom-Up Master Planning**

By definition, bottom-up master planning is a community willfully drawing up and adopting a master plan. This option is most apparent in urban planning and an example would be a neighbourhood based land use master plan. In this situation a local area community is designating what they want their community to look like in the future. A plausible exercise since the problem is somewhat smaller and more containable and therefore not as "wicked" as compared to an attempt at master planning at a broader level.

3.3.4 **Bottom-Up Strategic Planning**

By being both bottom-up and strategic in orientation this option is most in line with the planning style suggested by the social ecologist/system's view of planning. The underlying assumption is that social problems are "wicked problems" and that the best approach to solving them is with participation of the impacted parties and through a problem solving process which emphasizes the suggested tenets of a social ecologist/systems perspective. An example of this option is the "Tug Hill
Program" (Deballa et al., 1978).

Tug Hill, a rural area in upper New York State, was experiencing externally generated development pressures in the early 1970's. In response, the state government established the Tug Hill Commission. The Commission was comprised of representatives of local interest groups and was given the mandate to develop a regional plan for the area. In reaction to local opposition the Commission changed their focus from a product, the plan, to the process. To overcome the traditional dislike of planning they practiced what Deballa et al. (1981) describe as "reliance on local decision making ... bolstered by broadly based local assistance" (bottom-up planning). The program was premised on:

- Working with an identifiable region;
- Balancing outside and local interests; and
- Respecting the special nature of rural areas.

The end goal was "Cooperative Town Planning Boards" based on inter-municipal agreements which granted them power. Several boards were established and their main function was to work towards joint regional plans and joint resolution of common problems (e.g., fringe area problems).

While the Tug Hill program was criticized for not promoting economic development the program was considered a success in several other areas. The program fostered local action and participation in the policy making process and was successful in selling the need for planning to the residents. Local councils also learned the benefits of collective action in
Dealing with senior agencies.

The Tug Hill program was "bottom up" with the mandate of the commission being wide enough to encourage local decision making. The bottom up approach was defined by a top down structure since the state initiated the program and established the boundaries of the program and the mandate of the commission. The decision making was to some extent strategic. It used an incremental approach and was based on the goal of working towards identifiable and achievable objectives as opposed to an "all or nothing" master planning approach.

One could also argue that the "bottom-up strategic planning" style adopted by the Tug Hill Commission reflects a move to a territorial as opposed to a strictly functional perspective of the region. The Tug Hill region was delineated based on more than functional linkages. Tug Hill was perceived as a socially and culturally defined area in which the residents were bound by a common sense of belonging and a mutually perceived threat to their lifestyle.

3.3.5 Lessons Learned

There are pros and cons to each approach and there are circumstances where one approach is more applicable than the other. For the purpose of this thesis a planning style is required which is compatible with the goal of "regional resilience" and a "territorial regional planning" approach. Based on the literature discussed and case studies it is arguable that these requirements are fulfilled by a "strategic"
process implemented through "bottom up" participation. By being strategic the process shares similar systems principles with the concept of resilience and by being "bottom up" the suggested style is compatible with the concept of "territoriality".

3.4 The Required Objectives to Achieve Regional Resilience

Based on the foregoing discussion a model for resource settlement planning can be presented. The model is comprised of three objectives; "territorial regional planning", "bottom-up representation" and a "strategic process". The objectives and their composite criteria are defined as follows.

3.4.1 Territorial Regional Planning

From chapter two we can summarize territorial planning as having the following attributes;

- Internally generated development as opposed to externally imposed. This includes a holistic view of development -- socially, politically, culturally as well as economically;
- Community based goals as opposed to externally imposed goals (this is enlarged upon below under the objective of bottom up representation);
- A composite definition of the region which includes historical, cultural, social, physical and economic ties as opposed to just economic ties and an effort to build on these ties to create a diverse and interlinked region;
- Respect for the natural ecological base of the region; and
- A long run as opposed to a short term view of regional development.
3.4.2 Bottom-Up Representation

From the discussion on "bottom-up" representation (3.3.2) we can conclude that a resource settlement planning process, in compliance with the criterion of "bottom up", would:

- Involve to the maximum practical extent regional and local government and public bodies (i.e. hospital and school boards) in the analysis of the settlement issues; and
- Encourage the full development and/or use of local government in the implementation of settlement options.

3.4.3 A Strategic Process

As an objective for a territorial approach to resource settlement planning we would expect a strategic process to be based on the following criteria;

- Proactive: Implements policy to effect change rather than respond to change. This requires a focus on holistic thinking or "substantial" as opposed to strictly "functional" rationality.
- Process oriented: Does not pretend to deliver a final end product;
- Incremental: It takes small cumulative steps which are reversible;
- Flexible: It can adapt as the problem is better defined or as the parameters shift; and
- Experimental: It encourages continued learning to ensure the process evolves with the problem.
In comparison a non-strategic process is often reactive, ends oriented, synoptic and assumes complete knowledge.

3.5 Conclusion

In examining how a territorial regional planning approach is to be achieved, this chapter explores the social ecologist/systems literature. The conclusion is drawn that a bottom-up strategic planning process is most compatible with the goal of territorial regional planning. Bottom-up is defined as planning at the "lowest effective level"; strategic planning is defined as process oriented planning.

Based on this discussion of planning processes a model for resource settlement planning is presented. With a goal of "regional resiliency", the three objectives of the model are: a territorial regional approach; bottom-up participation; and a strategic process. In chapter 4 these objectives are used to evaluate two recent cases of the province's "local government" phase of resource settlement planning --Elkford and Tumbler Ridge.
IV. CASE STUDIES: COMPARISON OF THE TERRITORIAL REGIONAL PLANNING POLICY WITH THE PRESENT LOCAL GOVERNMENT POLICY

4.1 Introduction

The purpose of this chapter is to analyze the two case studies, Elkford and Tumbler Ridge, which were planned in conjunction with the development of the Province of British Columbia's "local government" policy for resource settlement planning. The Elkford decision was to expand an existing town and Tumbler Ridge is the most recent town in British Columbia. To evaluate the two case studies the criteria of the proposed territorial regional planning model will be used. The purpose is to demonstrate weaknesses and strengths of the existing "local government" policy vis a vis the proposed "territorial regional planning" model. In examining the case studies the following format will be used:

- history and background;
- settlement planning history; and
- evaluation of the settlement planning process. The evaluation will be accomplished by applying the criteria established in chapter three.

4.2 Elkford

4.2.1 History

The Crowsnest Pass/Elk River area (figure 10) has

Figure 10 - The Elk Valley Area
experienced three major periods of coal based prosperity: late 1800's to the 1930s; the 1940s; and from 1967 to the present. The impetus for the initial coal boom in the area was the North American railroad construction frenzy of the late 1800's. In 1885 the CPR was laying steel in the Crowsnest pass to access the coal. Similarly the Great Northern Railway from Montana was pushed up to Fernie in 1904 to exploit the surrounding coal fields.

The first major coal company in the area was the Crow's Nest Pass Coal company. It was purchased by Kaiser Resources in 1967 and the present owner, BRIC, purchased Kaiser Resources in 1978. The Crow's Nest Pass Coal Company began operations in 1897 with 10,000 acres of leased land and by 1903 it had six mines in operation. This first era of prosperity brought settlers and entrepreneurs flooding into the Kootenays. Numerous towns were born, prospered and later faded away. At the turn of the century Fernie was the major town in the area with numerous hotels, churches, and a diversified economy with a brewery, lumber mills, warehouses, a food processing industry, and even an American consulate. Fernie and the region's prosperity stemmed from the colleries which provided coal for the North American railways and for a developing regional market (Fernie Historical Society, 1967; Maund, 1984; Clegg, 1958).

The initial boom ended with the depression of the nineteen thirties. The Elk River area got a reprieve with the Second World War as surface mines were developed to supply the Canadian war effort. This second boom was short-lived. Technological
change and the availability of what appeared to be unlimited supplies of oil curtailed the market for coal. The East Kootenay's stagnated from the mid-fifties to the mid-sixties.

Writting in 1958 Clegg quotes the Vancouver Sun of February 14, 1958:

>This hard-luck community near the British Columbia-Alberta border may be dead as a coal town... things are tough here. Better than half the city's 800 wage earners have been unemployed since January 31 when the colleries, that have supplied Fernie's economic livelihood for sixty years, shut down for lack of coal markets...

Clegg indicated the Fernie council was actively seeking funds and subsidies to diversify the city's economy (Clegg, 1958).

As Fernie was a child of the first coal boom, Sparwood and Elkford owe their existence to the coal mining boom of the mid-sixties and seventies. In the mid-sixties the small hamlet of Sparwood benefited from two developments. The Ministry of Municipal Affairs, through an urban land assembly program, began moving residents of adjacent abandoned and/or dilapidated mining villages to Sparwood. The second development was the purchase of the local coal operator, Crow's Nest Pass Coal Company by Kaiser Resources. Based on anticipated overseas markets, Kaiser undertook a major expansion of the coal operations. to house the anticipated workforce Kaiser constructed employee housing and a shopping centre in Sparwood. Kaiser also donated a half million dollars to the town council (Bancroft, 1975). The new townsite opened in 1970.

Elkford owes its genesis to Fording Coal. In anticipation
of a growing overseas market demand, Fording Coal developed its Elk Valley coal holdings. Elkford was built at the confluence of the Elk River and Bovin Creek on land owned by Fording's parent company, Cominco. Elkford was designed by Unecon Consultants in 1969 who were "given less than one month to prepare a distinctly modern and imaginative overall townsite for an ultimate workforce of 350 (Langin, 1981)." The decision to build a new town was based on commuting costs; by building Elkford, Fording saved 2.5 million dollars per year, the amount Fording would have had to pay in travel allowance for a workforce based in Fernie (Vancouver Sun, September, 15, 1979).

In 1971 Elkford was incorporated under the instant town amendments of the Municipal Act and all services and utilities were turned over to the local government for one dollar. It is a good example of the "Instant Town" phase of provincial resource settlement policy when industry was the major player.

Based on an expanding coal industry Elkford grew rapidly reaching a population of 2,125 by 1975. But as with other "instant towns" Elkford's social and physical infrastructure were lagging behind demand, labour relations were bad and housing was in extremely short supply (Bancroft, 1975, p.45).

In the seventies the coal boom was expected to continue indefinitely. In September 1979 the Vancouver Sun did a background report on the East Kooteney region. The following comments were made by the article. According to a senior economist with the provincial government the 1980's would be a decade of boom for the area. Sparwood and Elkford were
predicting a one billion dollar expansion in the area with an increase in population of 16,000. A new industrial park had been constructed in Elkford and 22 applications for lots had been received. The Vancouver Sun also recorded numerous small entrepreneurial success stories in the service industries. The main complaint was the lack of accommodation in Elkford which Fernie was benefiting from and the competition from Alberta stores for the resident's disposable income.

With this bright picture Elco proposed a major new coal development in the Elk Valley. The proposal was the first to be evaluated under the evolving "local government" resource settlement policy of the Provincial government. Elkford was the eventual recipient of the new residents.

4.2.2 Settlement Planning History

The catalyst for active provincial government involvement in planning the expansion of Elkford was Elco Mining Company Ltd's stage two report submitted to cabinet under the coal guidelines in August 1978. Elco's stage two report predicted 36 years of coal production from its property with potential reserves of 100 years. Based on these predictions a major theme of the report was an argument in favour of a new townsite 50 km north of Elkford near the proposed minesite at Forsyth Creek. Elco's argument for a new town made the following points;

- The proposed townsite had more suitable terrain for urban development than Elkford;
• A potential new road to Calgary would diversify the economy of the upper Elk valley and the proposed townsite would be in the best position to capitalize on the ensuing development (the road is presently a forest service road; 
• Only a slight capital cost difference between using Elkford as a townsite and constructing a new town; 
• The new town site would ensure a short commute for the mine workers a requirement for attracting a competent workforce; and 
• A new town would encourage development, especially tourism, in the upper Elk Valley (Elco's Stage II Report, 1978).

The Ministry of Municipal Affairs argued in favour of utilizing Elkford as the base for Elco's workforce primarily for social reasons. Elkford was considered the better site since expansion would give the residents of Elkford;

• A greater range of employment opportunities especially for women; 
• A wider range of human and commercial services; 
• Greater stability and array of commercial services; 
• Increased economic stability stemming from having two major employers (Elco and Fording) in one town; and
• Improved community stability through lower levels of labour turnover (Paget and Rabnett, June, 1983).

It would appear this last point assumed that the larger community with more amenities would reduce labour turnover which
would in turn lead to community stability. This is the reverse of the traditional argument that community stability leads to labour stability.

Cabinet agreed with the Ministry of Municipal Affairs recommendation to expand Elkford as opposed to building a new town. This decision removed the settlement issue from the coal guideline process. Up to this point the townsite issue was just one of many social and environmental impact problems under consideration through the coal guidelines review process. By its decision Cabinet set in motion a settlement planning process which required considerably more resources and scope than could be provided by the coal review process. This gap was filled by the Ministry of Municipal Affairs in the planning and implementation phases for Elkford.

In 1978 Elkford was a town who's "financial and administrative capabilities were an unknown quantity..., without a community plan or control of key parcels of land in the townsite (Paget and Walisser, 1983)". What the town apparently had going for it was good political leadership and support from other regional communities as represented through the regional district. Building on these qualities the goal of the ministry's strategy was to foster local government and community resilience in Elkford. To achieve this goal the key steps taken in the planning and implementation phases were the following:

- Village control of land;
- A local/provincial project committee to supervise the
expansion programme (a major role was securing and allocating provincial funds);
• A professional project co-ordinator hired by the village to coordinate the expansion of the village;
• A comprehensive community plan was developed by the project co-ordinator for the village;
• A local/provincial agreement was signed enabling the village to develop residential subdivisions primarily financed by the province;
• Critical human services, police and education in particular, were secured;
• Plans for the redevelopment of the town center and the development of an industrial park were prepared and executed;
• An industrial property tax base sharing scheme for the Elk valley region was instituted; and
• A professional social planner was contracted to help work out a human service plan with the town residents (Paget and Walisser, 1983).

Based on the above one could argue that the "local government" strategy is a consolidation of the best parts of the "instant town" approach; the emphasis is on building social and physical infrastructure but using local government rather than company or provincial government initiative. As with all new towns progress was rapid and Elkford moved smoothly from the implementation to the development phase. Newspaper reports from 1979 describe Elkford as booming with a rapidly expanding retail
and commercial sector and a developing private housing market. In 1983 Elkford was selected as an "outstanding community development project" for presentation to the 1984 International Exposition of Rural Development (Paget and Walisser, 1983).

4.2.3 Evaluation: Application of Criteria

4.2.3.1 Territorial Regional Planning

Internal Development. Resource settlements are usually based on externally imposed development. In terms of this criterion the question to ask is "has the imposed development been used to encourage internally based development". For example is the mine approval tied to an agreement to use local services companies and support for product diversification? In Elkford the focus of the original planning process was similar to that used under under the "instant town policy" --improving the community's social and physical infrastructure. Only with the 1984 "Community Plan Update" is the concept of "internal development" recognized with policy suggestions for economic diversification. The plan concludes that while opportunities are limited "a diversification focus is highly desirable" (Rabnett and Assoc., 1984, p.47).

At a regional level, little has been done to diversify the economy through internal development. Only recently has there been a tourism and recreational plan done for the region. The plan was commissioned by the municipalities of the region but since it has not gained the support of the local governments,
its potential impact on the region is questionable (Rabnett interview, 1984). Similarly, planning by the regional district in the area is minimal.

Some economic and social diversity is occurring naturally within the Elk valley which, in part, reflects its natural amenities and linkages to urban centers. Fernie is upgrading its ski area to attract the destination market (Globe and Mail October 20, 1984). The region is also attracting tourist and second home development and a push is on to have the road between Elkford and Calgary completed for the 1988 Olympics. There is also potential for natural gas and some coal product diversification (Globe and Mail, October 20, 1984). Regarding a "holistic" view of development three of the nine programs for Elkford addressed social concerns. The remainder were concerned with the physical infrastructure.

**Composite View of the Region.** With the three communities physically linked within a well defined region --geographically, historically and economically, there would appear to be a great potential for the crystalization of a regional view by the component communities. Instead, there is a great deal of inter-community rivalry (Ministry of Municipal Affairs,, 1980; Rabnett interview). The rivalry apparently stems from community competition for the benefits from the various coal projects. This competition is perhaps reinforced by the community focus of the provincial resource settlement policy which creates a perception of winners and losers. A strong regional focus could hopefully generate more inter-community cooperation. As an
aside it is interesting to note that with times being tough there is greater impetus among the communities to adopt a regional view in tackling their economic problems. Ironically, they lack the financial resources that they had when times were good.

One step taken to build regional linkages is the "tax base sharing" scheme implemented between Fernie, Sparwood and Elkford to ensure a more equitable distribution of tax revenue. The program distributes municipal taxes from the coal mines to the communities based on the number of mine workers residing in each community. Tax base sharing has been successful in creating a more equitable tax sharing arrangement and in fostering a regional awareness. In arguing for their appropriate portion of the tax revenue the communities have had to examine their role in the region.

Ecological Appreciation. Largely a provincial concern, ecological matters are only lightly touched on at the regional and community level primarily in deference to provincial policy. For example, the Elkford Community Plan Update (1984) acknowledges land within the agricultural land reserve, wildlife preserves, provincial forests and floodplains.

A Long Run View. While all instant towns are built with the anticipation of a long life, reality is often different. The initial decision to expand Elkford was made on the assumption that more than one employer would increase long term stability.
The Community Plan Update addresses this issue more directly with policies to diversify the community's economic base.

The proposals of the Community Plan Update for economic diversity are more statements of goals than policy. There are no concrete policies to generate economic development which would utilize the area's renewable resources or policies to diversify economic activity based on coal such as a coal research station. Secondly, the policies are based on Elkford's goals and while they probably reflect the goals of the other communities the policies would have had more clout and potential if they had been regionally based.

4.2.3.2 Bottom Up Representation

The Elkford planning process was initially top down. The decision to expand Elkford was made by the provincial government and supported by Elkford and the Regional District (Paget, 1980). The provincial government also provided the financial resources and technical capability to establish the "Elkford Project Committee" to "provide direction and support to development of the community (Paget, 1980)". Chaired by the Ministry of Municipal Affairs the committee was also comprised of representatives from the Ministry of Lands Parks and Housing and the Village of Elkford. The Project Co-ordinator oversaw the "community development program". The various components of the program drew upon provincial resources (i.e. Highway's grants, planning grants, sewage and water grants and Industrial Parks Program) to prepare Elkford for expansion.
Elkford appears to be developing "bottom up" representation. In preparing the 1984 Community Plan Update the responsible consultant notes that the "Update" was directed by council and, at least in theory, better reflects the community's aspirations. In contrast, the consultant describes his initial role, as project co'ordinator, as "leading council" in the sense of providing direction and expertise on how to plan for rapid expansion.

Support for this interpretation of evolving "bottom up" representation comes from recently held workshops under the auspices of the "Community Development Project" (Rabnett interview). They found that Elkford has a high degree of community involvement in local decision making and has a strong sense of "where it is going" with a commitment to the future. A 1982 survey done by Praxis Ltd for the Canstar oil sands project in Alberta found Elkford was highly rated by its citizens in terms of "quality of life" indicators (Roberts and Fisher, 1984).

At the regional level a strong locally based regional force has yet to materialize. However, the joint community approach to the tourism strategy study suggests there is movement in that direction.

4.2.3.3 Strategic Process

Proactive. The initial decision to expand Elkford was reactive. The decision was made under the "Coal Guidelines" which, as a review process, is reactive. In comparison, the planning done
by Elkford in preparing for expansion was proactive in one sense. The various policies anticipated potential problems and implemented the appropriate actions. However, it is arguable that there was little choice. Once the decision was made to allow the coal project the provincial government had to implement a proactive planning process to be prepared for the impacts of the initial reactive decision.

Elkford's continued dependence on two coal mines will reinforce reactive planning; Elkford will always be responding to dramatically changing employment levels as international coal markets fluctuate. To break this circle, a proactive approach would start off by exploring ways to dampen the booms and the busts in the short term, perhaps a provincial "heritage fund" system, and would begin work on a long term solution based on economic diversification.

Process Oriented. While the initial Elkford community plan was to some extent ends oriented, the update is a good example of a product derived from a process oriented planning approach. The Community Plan Update acknowledges an uncertain future and enunciates community derived principles to guide the community decision makers in handling future uncertainty. A path to a perfect future is not offered by the plan.

Flexible. The initial process to expand Elkford was rigid to the extent that only two options were considered; a new town or an expanded Elkford. The parameters governing the expansion of Elkford, provide accommodation for X number of workers, also ensured a certain rigidity or goal oriented process.
With Elkford presently in a more stable state of growth, but with an uncertain future, the "community Update" plan has recognized the necessity for flexibility. The plan acknowledges an uncertain future and suggests greater provincial and private sector cooperation to reduce uncertainty.

Incremental. The criteria of incrementalism can be applied at several levels. At the project level, it is arguable that the expansion of Elkford, as opposed to building a new town, represents an incremental decision since expansion is a smaller step than building a new town. The counter argument is that the cost to expand Elkford was comparable to building a new town and therefore the decision was hardly incremental. Furthermore, given the size of the project which the settlement process must respond to, it seems inconceivable that an incremental approach can be implemented at the project level. Although in comparison to the Tumbler Ridge case discussed below the project was incremental. To be truly incremental the project would have to be phased in as conditions dictated. If a large scale project has been given approval, for what ever reason, "incrementalism" has a role in post project planning. In Elkford's case we would expect the community plan Update to reflect and recommend an incremental approach to planning the future. For example, instead of investing heavily in an industrial park along with almost every other community the option of sharing an industrial park with Sparwood should be explored. This strategy has two advantages. First, By sharing costs a "better" and hopefully more attractive park would be built. Secondly, a better park
should result in a larger cliental which in theory should attract even more industry.

Experimental. Initially nine objectives were implemented in the planning for Elkford. Many had never been used before. However, the programs relied mainly on descriptive and processed knowledge. Analytical studies on such things as the future of the coal industry, the impact of the road to Calgary and even the study on tourism were lacking (interview with R. Rabnett).

4.2.3.4 Summary: Elkford

Elkford was the first attempt at implementing the "local government" policy for resource towns. The policy was successful to the extent strong local government has developed along with a "sense of community and direction". However, it would appear from this analysis that the question of regional resilience and its ramifications for community stability have yet to be addressed.

In comparison to the tenets of territorial regional planning, development was externally imposed and there has been little done at the regional or local level to diversify the economy. While the community plan acknowledges the need for economic diversification it also acknowledges the limited actions available at the community level.

In terms of participation, the Elkford settlement planning process was largely top down with the provincial government taking the lead. There would seem to be a move towards bottom
up representation with the 1984 Community Plan Update being largely a local product.

The planning process for Elkford was closer to the master plan end of the scale rather than the strategic end. The process was initially reactive and ends oriented. Since the initial planning process, Elkford's community planning has been more reflective of a strategic process at least in regard to its community plan.

Concerning the goal of "regional resilience" the Elkford process made little progress. The focus was still the community and there has been no movement to diversify the region's economy. Although, it is arguable that the existing settlement structure was strengthened with the expansion of Elkford. The three settlements are well interlinked and to a certain degree dependent on one another. Unfortunately, the settlements all perform a similar function, dormitories for the coal mines, which does not contribute to resiliency.

There would appear to be potential for the development of diversification in the Elk Valley. Offering a wide range of outdoor recreational options and a reasonable climate, the Elk valley is a highly liveable region. The valley's potential resources, besides coal, are gas, tourism and some logging. If the road to Calgary is constructed, the Elk valley will be within 200 kilometers of a large metropolitan center. This is considered close enough for daily and weekend recreationally base commuting (Barker, 1978). The potential for diversification is also assisted by the fact that, while the three communities
of the Elk valley have limited experience working together as a region, they apparently recognize that community stability is to some extent dependent on regional resilience.
4.3 Tumbler Ridge

4.3.1 History

The Northeast coal project has been called "the largest single project in British Columbia since the construction of the Canadian Pacific Railway (Echo, January 19, 1983)" with a cumulative cost to 1983 of 2.8 billion dollars. The northeast coal fields were first noticed by the fur traders at the end of the 1700's. The coal fields stretch from Hudson Hope in the northwest to the Alberta border in the southeast (figure 11). With estimated reserves of 100 plus years, only distance from markets and lack of a transportation network has restricted their development. The focus of the northeast coal project has been to provide the necessary infrastructure to extract and transport the coal to tide water.

The provincial government's contribution to the project includes; expansion and upgrading of the B.C.R rail line which required the building of a nine kilometre tunnel and eleven bridges; construction of a 127 kilometre electrical transmission line; construction of a highway from Chetwynd to Tumbler Ridge; and finally, overseeing the construction of a town to house 6,000 people by 1986 (Rabenett and Associates, 1981). For its part the federal government was responsible for the Ridley Island Coal Port at Prince Rupert and for upgrading of the main CNR line from Prince George to Prince Rupert.

The development of the north has always been a dream of the provincial government. W.A.C. Bennett initiated the infamous Dease Lake extension of the BCR and the Peace River Hydro

Figure 11 - The North East Area
projects and the Barrett government was, in part, responsible for germinating the idea of the northeast project. In the late sixties and early seventies rising oil prices led to heightened interest in the northeast by major resource companies. The provincial government responded to the increased interest by commissioning a study. Undertaken by the Ministry of Economic Development, with assistance from DREE, the *North East Report 1975* outlines four scenarios of possible growth for the northeast. The profiles range from government restriction of future growth to a "laisser faire" approach. The compromise profile, "government initiatives for managed economic development", received the most emphasis. The goal of the "government initiative" profile was to eliminate problems associated with uneven development and to stabilize the economy and society of the region through a comprehensive regional planning approach. The provincial government, with federal assistance, undertook the lead role in developing the Northeast coal project through the "Cabinet Committee on Coal Development" which was established in 1976. The coal committee was given the mandate to investigate coal policy and development issues. Chaired by the then Ministry of Economic Development, the coal committee was comprised of the various resource ministers. Noticeably absent were the Ministers of Environment and Municipal Affairs. (Taylor, 1978). The initial act of the coal committee was to strike five subcommittees to write seven reports on northeast coal. The Ministry of Municipal Affairs was asked to chair a committee to undertake the preliminary
townsite report. These initial studies were followed by more in-depth studies.

Even in these early stages the project was not without its critics. A newspaper article suggested in 1977 that the project would lose 100 million dollars a year and would be developed at the expense of southeast coal (Vancouver Sun, February 18, 1977). The government responded that it was prepared to subsidize Northeast coal to encourage northern economic development. The community of Chetwynd also expressed fears of negative social impact while receiving little positive compensation (Vancouver Sun, June 4, 1977).

1979 and 1980 were years of indecision on northeast coal marked by weak coal markets and Ottawa and Victoria fighting over financial responsibility.

In the spring of 1981 the government officially announced that the town of Tumbler Ridge would be built at a cost of 232 million dollars and that the project would be overseen by an appointed commissioner. The municipality was to cover 160,000 hectares thereby placing two coal mines within its tax base, the objective being to make the town self-financing.

By 1982 construction on all components of the project was in full gear with 4,000 workers housed in temporary accommodation in Tumbler Ridge. 1982 was also marred by labour disputes. 1983 was full speed ahead with the town of Tumbler Ridge taking shape. In spite of inadequate and insufficient housing the raw town was attracting entrepreneurs in the service industry (Vancouver Sun, May 24, 1983). By May 1983 the town had a
permanent population of 150 families. The coal projects and related infrastructure were nearing completion and in November 1983 the first coal was shipped to tide water. Inspite of plummeting coal prices in 1984 optimism was high in the Northeast. Both Chetwynd and Dawson Creek expressed confidence in increased growth based on their roles as alternative service centers for the residents and firms of Tumbler Ridge (Vancouver Sun March 25,1984).

June 1984 witnessed the official opening of Tumbler Ridge. After six years of planning and three years of construction Northeast coal was in production.

4.3.2 Settlement Planning History


In February 1977 the Townsite/Community Development subcommittee of the Coal Committee of Cabinet published its Preliminary Feasibility Report. The purpose of the subcommittee's report was:

- "to determine the type, number and level of community services/facilities that would be required if coal and other resources, were developed;
- to estimate the "order of magnitude" cost of these required services/facilities;
- to determine if a new community would be needed to provide these services/facilities;
- to identify and evaluate potential sites that could accomodate a community of sufficient size to serve the
proposed coal mine operations and other potential resource developments in the region;
• to assess the physical impacts that this community may have on local environment; and
• to assess the impacts that the proposed coal development may have on existing communities in the region.

The study focused on the areas of the Sukunka and the Babcock-Wolverine properties. The report also suggested a second town might be necessary to service the more southerly properties. The assumptions of the analysis included:
• no new single employer towns if an existing town can be used;
• potentially developable transportation corridors have been identified; and
• minimum life expectancy of mines of at least 25 years to ensure termination of municipal debt.

The report concluded a new community was required primarily due to the size of the workforce (approximately 2500) for the Babcock-Wolverine Bullmoose coal mines. The Sukunka workers could commute from either Chetwynd or the new town. Alternatives to a townsite were quickly rejected.

Of the townsite options, Tumbler Ridge was preferred over Bullmoose Creek for the following reasons;
• shorter commute cost;
• closer to the regional center of Dawson Creek;
• More strategically located as a regional transportation hub;
• closer to the region's major recreation/scenic features;
• greater separation between the town and the railway;
• closer to potential airport site;
• estimated lower annual capital and operating cost for central water/supply/treatment and sewage disposal facilities; and
• biophysical features created a more attractive living environment.

In examining regional impacts the report examined Chetwynd and Dawson Creek. The report concluded that Chetwynd would be significantly impacted by the Sukunka mine and natural gas developments in the area. However, the report felt that Chetwynd had sufficient excess service capacity to absorb the expected growth so long as adequate land use and service planning was undertaken. As for Dawson Creek the report concluded that Dawson Creek could cope with the anticipated incremental growth in demand for its public and private services. In considering the settlement option only three options were given serious consideration by the report: a camp; commuting from existing towns; and a new townsite. The camp was dismissed as being impractical due to the anticipated longevity of the project, its size as well as the "social" problems associated with camps. The commute option was rejected on the grounds of impracticality and costs stemming from the distances involved, although there are examples of similar commuting distances. The 1977 Report saw the townsite as the best option.

Therefore, it was decided during the early stages of the sub-committee's study that if a suitably located
tract of land could be identified on which a new community could be established, it would be more desirable than developing a large, long term, "bunk-house" town. Furthermore, potential opportunities for the development of other resources (e.g., gas, forest products) had been identified and would be beneficial in broadening the economic base of a new community (Townsite/Community Development Subcommittee, 1977, p. 18).

It appears that only limited analysis was done in examining the settlement options. The decision to build a town was based primarily on a projection of the number of employees required over the lifespan of the coal fields. The town was also justified on the grounds that it would become a regional centre. This optimism was based on a perceived potential for regional development in the tourist, forestry and natural gas sector (Taylor, July, 1983). Yet no in depth regional analysis was done outside of an examination of the changing regional employment levels. The relationship between building a new town and the development of the area's resources was not examined.

In 1978 the next major settlement study was undertaken -- the "Conceptual Plan" by Thompson, Berwick, Pratt and Partners (1978). Its funding came from a Federal/Provincial agreement which funded over 80 studies on Northeast coal. The mandate of the study was to produce a conceptual plan for a targeted population of 10,000 people within eight years of start-up. The terms of reference for the study were to produce "a document of what a new permanent community ought to be". The lack of a regional component in the terms of reference was remarked on in the recommendations of the final report.

Being comprehensive in covering all aspects of building a
community, the conceptual plan starts with a community theme and ends with two townsite plans: a low density and a high density plan. In between the conceptual plan covers everything from potential social problems to site constraints to social-spatial relationships to capital costs and cost escalations.

The conceptual plan's low density option was accepted in June, 1978 by cabinet. Limited follow up work ensued while the government waited for improved coal markets. In the fall of 1980 with a "go" decision expected for Northeast coal the Ministry of Municipal Affairs contracted for an update of the conceptual plan and its constituent social, physical, financial and organizational plans.

The District of Tumbler Ridge was incorporated on April 9, 1981 and a commissioner was appointed as both "mayor and council" (Paget and Rabnett, 1983). The commissioner was to oversee the transition to full local self-government and in doing so was to act as the "trustee for the future residents". The commissioner was supposed to ensure that the interests of future residents were not forgotten in the quest to minimize costs and keep the project on time and on budget. The commissioner was also supposed to assist in integrating the new town into the region.

To implement the conceptual plan's goal of working towards a normal community, the District of Tumbler Ridge also appointed a director of Social Development to coordinate delivery of community services, develop a health and social services center, produce an information programme to foster the community image
and develop community spirit through clubs and associations (Paget and Rabnett, 1983).

4.3.3 Evaluation

4.3.3.1 Territorial Regional Planning

Internal Development. As with Elkford, the raison d'être for Tumbler Ridge is "externally imposed" development. The issue addressed under this criterion is "what steps are being taken to use the imposed project to facilitate internal development?"

For example, does the agreement with the company specify the use of local service industry for building and maintenance work or can the company be persuaded to locate office personnel in Tumbler Ridge?

From the literature reviewed it appears this issue was only peripherally addressed and only in relation to increasing the economic stability of Tumbler Ridge. The central concern of the financial component of the conceptual plan, to reduce financial risk to the municipality, touches this issue. Guarantees were obtained from the resource firms for the purchase of unsold lots and the servicing of debt (Paget interview). The goal was to ensure that if the coal market soured and projected employment levels were not met, the town would not be left with unsold lots and services with no means to pay for them.

While an important issue the guarantees do not generate "internally based growth". Although, they might reduce some of the uncertainty surrounding the future of the town which would make it more attractive to an entrepreneur. This concept is
espoused by the conceptual plan:

By becoming visibly involved in the development process, the province is seen to stand behind the town. The perception of risk is reduced and businesspeople need not fear the town's demise (Thompson, Berwick, Pratt and Partners, 1978).

Curiously, the Conceptual Plan does not mention "diversifying the economic base" as a strategy to reduce risk even though the townsite was in part justified on the area's potential for logging and natural gas. The Conceptual Plan Update does note the importance of encouraging "viable and competitive commercial services" (Rabnett and Associates, 1981). Under this policy, government retention of non residential land is suggested to ensure land monopolies do not develop which would reduce entry for small businesses.

Regarding a holistic view of development, the conceptual plan is appparently cognizant of the concept with equal weight being given to a physical plan, social plan, financial plan and the organizatonal plan. Holistic development was further reflected in the building of a traditional town hall to try and create a sense of history. The social plan was based on "individual needs" which also reflected a holistic view of development. The deficiency in this approach is the community focus of the plans. Holistic, or even economic, development at the regional level was not addressed except in a very general way. For example, no individual nor joint industrial strategy with adjacent communities was considered.
Composite View of the Region. The region was identified mainly by economic parameters. It was hoped the three centres would share in growth and in theory provide alternative employment when one centre was down (Glass and Lazarovich, 1983). The coal development was also viewed as contributing to regional development by diversifying the economy. The counter argument, from a staple theory view, is that the size of the coal mine will in the long run reduce regional diversity. The region will become dependent on the mines which will hinder the development of local markets and local entrepreneurship.

The Conceptual Plan Update recognized the importance of intraregional linkages as a means to compensate for isolation but there is no mention of fostering regional resilience. Suggestions included bus services and a good communication systems --radio, television and telecommunication. It is interesting to note that intra-regional linkages are developing through private sector initiative. A regional newspaper and an intraregional plane service have started operations.

At a political level it has been suggested that the commissioner, a well known and respected local politician, has built regional bonds through his seat on the Regional Board (Paget, interview). Regional agencies, the school district, the regional hospital district and the chamber of commerce, were also involved in the planning and implementation phases of Tumbler Ridge. What is unfortunate is the limited role the regional district has played in Tumbler Ridge and the limited consultation with adjacent local government in the planning and
building of Tumbler Ridge. The next stage is to get the local governments of the region cooperating with joint development strategies.

**Ecological Appreciation.** In terms of site amenities and social well-being, ecological concerns were given high priority in the Conceptual Plan. Overall, numerous environmental impact studies were conducted to ensure minimal environmental damage and appropriate mitigation measures.

**A Long run View.** The whole planning process and resulting documents assumed a long life for Tumbler Ridge. The guarantees for reducing risk between the company and the town demonstrated a more realistic view of the future.

4.3.3.2 **Bottom Up Representation**

While the initial planning stage was top down (Paget and Rabnett, 1983b) the latter planning and implementation stages included a series of regional workshops to solicit local input. The regional agencies involved were the school district, the regional hospital district and the chamber of commerce. One reason for the use of regional agencies was to tap local knowledge for use in designing the townsite (Rabnett, interview). An example is the personal knowledge of the annual amount of snowfall in the area. Another example is that the proposal to locate the school in the downtown core was contrary to provincial policy but with the support of the local school
board the planners were able to convince the ministry of its merits. (Paget interview). It is also arguable that the regional workshops were useful to assuage the regional agencies on their role in developing Tumbler Ridge.

At the community level the resource settlement policy of "local government" and the concept of the commissioner are to encourage the rapid formation of local government and public involvement. Evidence suggests the bottom up principle has, in part, been used in Tumbler Ridge with regional input in the planning stage and the apparent on-going evolution of local government in the development stage. A full council will be elected by the end of 1986. The process could have been improved with a widening of the input into the regional workshops. For example, to add balance, the local labour council would have been a valuable addition.

4.3.3.3 Strategic Process

Proactive. The northeast coal project is proactive in the sense that the project and the settlement option were jointly examined. Taylor (1978) calls northeast coal the largest and most comprehensive government led resource planning project in British Columbia's history. However, as with Elkford, the limited actions to diversify the economic base ensures a future of reactive planning as the town responds to changing employment and revenue levels. Tumbler Ridge has made some tentative "proactive" steps to break the "reactive cycle" with the "risk" guarantees and policies to facilitate business entry.
Process Oriented. The Conceptual Plan is "process" oriented. While an end physical plan was presented, what was stressed by the plan was not the end state but the "principles" to guide Tumbler Ridge towards its goal of being a mature community. One example is the "social" principle of "environmental sensitivity". This principle has led to design criteria which will ensure the town fits into its surrounding environment.

Incremental. The three settlement studies demonstrate an incremental approach with each study building on the previous one.

Flexibility. The decision to build Tumbler Ridge instills "rigidity" in that future options are limited. If projected production figures are wrong it will be politically difficult to shut down Tumbler Ridge. However, within this rigid framework the planning and building of Tumbler Ridge has attempted to exercise the criterion of flexibility. The commissioner’s role enables him to respond quickly to problems and to ensure local concerns are not overshadowed by the larger concerns of being "on time" and "on budget". The Conceptual Plan's emphasis on principles while leaving as many decisions to future residents as possible also demonstrates flexibility. For example, instead of prebuilding major recreational facilities, for example a swimming pool, the Conceptual Plan recommends a community recreation fund be established to "allow the community residents to choose what they want".
Experimental: The Tumbler Ridge experience was to some extent experimental. The commissioner and many of the Conceptual Plan strategies such as the prominent town centre were new ideas for resource towns. Tumbler Ridge also drew on the Elkford experience. Examples are the company townsite agreement to reduce risk and the strategies to activate a "local government" as quickly as possible with the authority and resources to shape the final outcome of the town.

The Conceptual Plans were to some extent effective in combining processed and personal knowledge. The conceptual plans were based on several background studies. For example demographic projections were based on a survey of similar sized coal towns in Alberta and British Columbia. Similarly, potential community problems were pinpointed in workshops involving experts. This processed knowledge was apparently combined with personal knowledge stemming from regional workshops, the experience of the planners involved and the commissioner.

4.3.3.4 Tumbler Ridge Summary

Tumbler Ridge was the second attempt by the provincial government to implement its "local government" resource settlement policy. As with Elkford, the policy has been successful to the extent that local government is rapidly evolving and, according to newspaper accounts, a community spirit has developed quickly.

In contrast to Elkford, there has been greater attention
paid to developing community resilience as defined by the province. The primary concern of the Financial Plan component of the Conceptual Plan was to reduce risk to the community stemming from fluctuating coal markets.

In terms of the goal of "regional resilience", and the objectives to achieve it, the following is observed. While development is very much externally imposed, Tumbler Ridge has made a few tentative steps towards a territorial approach. There are strategies to facilitate business entry into Tumbler Ridge and to encourage "holistic" growth of Tumbler Ridge. But that is as far as they go. There has been little attempt to do a joint regional development plan, enhance regional linkages or even share regional services. Inter-community cooperation is limited and it is suggested that there is some inter-community rivalry (Rabnett interview). On the other hand, a perusal of the regional newspaper suggests that the business sector in Dawson Creek and Chetwynd have recognized the benefits of building closer ties with Tumbler Ridge.

Participation in Tumbler Ridge was initially and was inherently top down. The project was planned by the province and imposed on the region. The region was then asked to cooperate in the project. While regional agencies participated in "workshops" in the latter stage of the planning for Tumbler Ridge, the evidence is inconclusive as to whether or not they had a significant impact on the shape of Tumbler Ridge. A case could be made that the final outcome would not be all that different if Tumbler Ridge had been planned with no local input.
and built by one agency such as the British Columbia Building Corporation. Tumbler Ridge has apparently been successfully in generating local government and community involvement in running the town.

While overall the Northeast planning process for Northeast Coal was to some extent "master planning", the planning for Tumbler Ridge has demonstrated a strategic approach. The Conceptual Plan has implemented a relative (given its parameters) proactive, process oriented approach and has attempted, with some success, to ensure flexibility in planning and building Tumbler Ridge.

4.4 Conclusion

Elkford and Tumbler Ridge demonstrate the relative success of the provincial "local government" policy for resource settlements. The success is limited in that the results are not fundamentally different from the results of the instant town policy. While local government and short term community stability has developed, the towns are still dependent on foreign markets and subject to booms and busts. Local government has not resulted in economic diversification and it is difficult to imagine a situation where local government will do so on its own.

This is demonstrated by the analysis; the key criterion for achieving the goal of regional resilience has not been met in either Elkford or Tumbler Ridge. A regional territorial approach is not used nor is the planning process truly bottom
up. This is unfortunate in the case of Elkford since the geography, economic base, social ties and history of the Elk valley all suggest a "natural" regional focus which can be encouraged by the policy makers.

Northeastern British Columbia presents more obstacles to developing "regional resilience" through territorial regional planning. The three towns indicate a regional settlement pattern which can be built on. However, the heavy subsidization of Northeast coal and the present financial difficulties of the major employer suggest the existing situation is somewhat artificial.

The above difference between Elkford and Tumbler Ridge reflects, in part, the difference between a non-frontier and a frontier town. This suggests that "territorial regional" planning is only suitable in non-frontier regions. Chapter 5 explores how a "territorial regional" planning policy for resource towns could be implemented in a frontier area. The location for this scenario is northwest British Columbia where a resource settlement study has recently been completed for nine mine proposals.
V. NORTHWEST BRITISH COLUMBIA: THE APPLICATION OF A TERRITORIAL REGIONAL RESOURCE SETTLEMENT PLANNING POLICY

5.1 Introduction

In 1983, as part of a comprehensive regional study, a settlement option report for Northwestern British Columbia was published by the Ministry of Municipal Affairs (1983). The report evaluates the settlement options for nine mining projects in Northwestern British Columbia (Figure 12). Using this study as a starting point, this chapter demonstrates how a territorial regional resource settlement policy could be applied. The format of chapter four is as follows:

- History and background;
- Settlement planning history; and
- Evaluation of the settlement planning process.

5.2 History

The northwest is the most thinly settled area in British Columbia. The major settlements are located in the southern portion of the region along the highway 16 corridor—Prince Rupert, Terrace, Kitimat, Hazleton, Smithers, and Burns Lake. The northern zone has a scattering of communities none of which have more than a few hundred residents or is incorporated. Most have only rudimentary infrastructure and limited economic bases.
Figure 12 - The North West Area

Approximately 25% of the population is native Indian many of whom still practice a subsistance lifestyle. A sizable portion of the area is under land claims negotiation.

In terms of the concept of "region" only the southern zone complies to some extent with the definition expressed in chapter two. The northern zone would be more accurately described as a geographical area. The existing resource communities such as Cassier have limited regional ties. They are enclave economies with strong functional ties to centers outside the region. On the other hand many of the numerous native communities are still outside the wage economy and have strong territorial ties, economically and culturally, with the surrounding area. An example is Telegraph Creek and the Stikine River Valley. The valley supports 700 residents involved in a variety of subsistence and productive activities (i.e. fishing, hunting, tourism) (Vancouver Sun, August 19, 1984). Likewise, Atlin has no major basic economic activity but its residents manage to survive through various forms of self-reliant activity. In the southern zone, the Highway 16 corridor is a conduit for the shipping of resources from sources in the east to markets overseas with little value added in between.

The northwest has not been overlooked by the Victoria policy makers. In 1977 the North West Report 77 (Ministry of Economic Development, 1977), a descriptive and economically conservative report, was published. It concluded that the main limits to development of the northwest were a soft mineral market, the lack of area infrastructure and an underutilized and
under-skilled labour force. The report was pessimistic on short term economic development but optimistic on the future potential for development.

In 1981 the "Cabinet Committee on Economic Development" toured the area. In response to calls for action they initiated an inter-agency study to "encourage further discussion and public dialogue on economic development in the northwest (Ministry of Industry and Small Business, 1982, p.5)". The first report was published in 1982 and is entitled The Northwest Region: A British Columbia Regional Economic Study 1982. Being more descriptive than analytical, the report is largely an update of the 1977 report with a more positive presentation of the area's potential.

In an article on the 1982 report Brian Kirian (Vancouver Sun, September 16, 1982) suggests that the 1977 report was more realistic in its analysis of the market constraints to mineral development in the northwest. According to Kirian the 1982 report dwells on infrastructure problems while ignoring the market and labour force problems which were highlighted in the 1977 report.

The 1982 research did indicate that the best opportunity for future development of the northern zone lay with nine mineral projects. In 1983 seven reports were published examining the implications of these nine projects for the public sector. The reports were a joint effort by the main resource ministries of the provincial government coordinated through the Ministry of Industry and Small Business Development. The
analysis was based on the assumption of most of the infrastructure cost being absorbed by the private sector. The suggestion was also made that the viability of the projects would be enhanced with increased government cost absorption.

The sub-report; Settlement Options (Ministry of Municipal Affairs, 1983) examined the potential settlement options for each of the projects. Done predominately by the Ministry of Municipal Affairs, it marks the initial settlement planning phase for the northwest.

5.3 Settlement Planning History

The ministry's northwest settlement planning process builds on the Elkford and Tumbler Ridge experience. It used Resource Community Planning: A Framework for Choosing Settlement Options (Rabenett and Paget, 1979) which was prepared for Tumbler Ridge. The framework outlines three stages: developing settlement options; selecting settlement options; and securing agreement on the selected settlement options. The northwest settlement task force focused on the first two stages. In review of the various settlement options for each mine group the settlement option report provided "a framework for choosing and securing options which can provide guidance to prospective developers, reduce uncertainty and direct decisions on further work involving policy clarification, research, discussion and specific site investigations (Ministry of Municipal Affairs, 1983, p. 6.0)".

The task force stated that its primary objective is social and reflects the traditional literature perspective that a
mature community will create labour stability. It states:

"The optimum settlement strategy should lead to socially cohesive communities conducive to attracting and retraining a skilled workforce (Ministry of Municipal Affairs, 1983).

It is arguable that this is also an economic objective. The suggested settlement options to meet this objective are:

- sponsored extra-regional commute from an existing town;
- sponsored intra-regional commute from an existing town;
- unsponsored intra-regional commute from an existing town;
- unsponsored intra-regional commute from a new town.

In reviewing each mine proposal the study attempts to rank several reasonable settlement options for each project by:

- Specifying criteria for developing settlement options;
- Using these criteria to develop a reasonable range of settlement options;
- Analyzing all reasonable settlement options for each project;
- Ranking the options; and
- Forwarding a framework for future decisions.

The report concludes that existing regional centers in the southern part of the region are too far from the mine projects for daily commuting. Therefore, strong support is given to long distance, sponsored, extra-regional commuting from existing regional communities.

In reviewing the capacity of the northern communities the
report concludes that they lack the infrastructure and/or the location to be utilized for daily commuting to the proposed mines. The report suggests "long distance, sponsored, block time commuting" as an option. Using a flexible extended work shift (i.e. two weeks on one week off) residents would be able to commute, at the company's expense, from their community to the project site. This would enable residents of the region to reap the employment benefits of the mine without the major social disruptions which frequently result from locating a major development project in one town (Dixon, 1978). This does not preclude the potential of other social problems such as the bifercation of village incomes and erosion of traditional activity.

New towns are suggested as possible settlement options for the Schaft Creek, and Klappan Coal project (diagram 5.2). Given the underdeveloped state of the northern half of the region a new town would have to be part of a larger strategy concerning regional development since "new highways, railways and energy supplies are needed to support these projects". All potential town sites for the two projects involve trade-offs between what are socially preferred town sites and the impacts which each project will inflict on the biophysical environment of the suggested sites.

In the concluding chapter the settlement option report lays out an agenda "for further work over the next few years". Since the proposed mines are in an area where there are no incorporated municipalities and the Regional District for the
most northerly portion of the region, the Stikine, has yet to be incorporated the first item for consideration is local government development. Specifically, the report suggests "the following should be looked at:

- the adequacy of existing regional district boundaries;
- alternative ways of delivering local services to rural communities; and
- local government options for Cassiar (Ministry of Municipal Affairs, p. 7.1).

The objective is to encourage local participation in regional development which would appear to be contrary to past provincial policy. The second item on the agenda is improving federal/provincial relations to facilitate the movement to a solution on native Indian issues and access to the region through Alaska. The third item is more research on the social and economic implications of commuting. And the final item listed for further action is regional investigation to ascertain strengths and weaknesses in the local settlement system and areas where provincial government assistance would help.

With the recent completion of a preliminary settlement planning study, the northwest presents an appropriate case for the hypothetical application of the suggested territorial regional resource settlement policy. First, indications are that some of the mine projects will proceed in the near future making this hypothetical exercise relevant (The Province, December 2, 1984; The Sun, November 26, 1984). Second, the seven component reports of the Northwest Region: A British Columbia Regional Economic Study, 1982 provide an easily
accessible source of information to conduct this hypothetical exercise. A final point is that the northwest is similar to other resource frontier areas in Canada with its isolation and harsh environment.

The following section will be part comment and part conjecture. It will comment on steps taken so far and will make conjectural suggestions for future action based on the goals and objectives of the territorial regional planning model.

5.4 Evaluation

5.4.1 Territorial Planning

Internal Development. The focus in the Northwest study is on external development. There is little consideration given to alternative ways of improving local economies. The settlement report partially acknowledges this issue by recommending the development of local government to allow "residents to participate more effectively in regional development. The settlement report also suggests other forms of economic development be explored to allow for diversification of existing and potential community economies.

Given the confines of the study, the settlement report is somewhat "holistic". In reviewing which communities can absorb radical change the settlement report considered social as well as economic costs. The three criteria used to evaluate existing communities were existing community resources, community desires and capacity to expand. Similarly the commute options
are based on social as well as economic concerns.

Composite View of the Region. With a focus on the nine mine projects a functional perspective was used in the regional analysis. Little consideration was given to social, political and cultural parameters of regional development. The settlement report acknowledges some of these non-functional issues but at the community level as noted above.

In discussing the importance of diversification the report is somewhat confusing. The report suggests "opportunities for further resource development" should be considered when evaluating a settlement option. The report also notes that a benefit of blocktime commuting from existing southern centers is that it would contribute to diversifying the economic base of the selected center. However, the main criteria for evaluating the settlement appears to be the size of the workforce. In evaluating options for the Klappan Coal Project the report concludes:

A commuting scheme was not considered initially because the original production estimate involved a workforce of 1,250 persons, sufficient to support a new community.... Compared to the townsite options, the camp option is preferred (for the low production scenario) because of the lesser environmental impacts resulting from fewer people. However, as argued in section 4.4.3 above, the camp would not be a desirable option from the social perspective, except for the low production mine scenario (Ministry of Municipal Affairs; sec,5.2.3).

In short, the main criteria are short term social concerns, providing an attractive environment for the workers, and
environmental concerns.

Two of the settlement report's suggestions have the potential to contribute to regional ties: the long distance commute option to the centers on highway 16 and local government. The long distant commute option, if properly implemented and used only where local commuting is not feasible, is a viable strategy to strengthen north/south ties in the region. A greater percentage of the economic rent would be captured by the southern towns (as opposed to non-regional centers) and would foster a stronger identity between the two halves of the region. The counter argument is that such a program could build resentment among the northern towns that are overlooked; they may feel that their resources and jobs are going to outsiders.

The suggestion to strengthen local government would also contribute to territorial ties by giving the residents a stronger voice in planning the region.

Ecological Appreciation. As with Elkford and Tumbler Ridge ecological concerns were considered separately and the results used as one factor in evaluating the settlement options. No in depth analysis of the significance of existing ecological systems and ways in which the environment might be exploited to encourage self-sustaining development was undertaken.

A long Run View. Within the terms of reference, the settlement option report attempted to be long term. The emphasis on long
distance block time commuting reduced the risk of building future ghost towns. The report also acknowledged the importance of developing a diversified economic base through multiple resource based towns.

**Suggestions for further action.** In the planning stage several additional steps are warranted if the goal of territorial regional planning is to be achieved. First, maximizing the diversity of local economies is a key if any of the northwest settlements are to survive beyond the lifespan of the ore bodies. This might result in redefining the concept of development and the acceptance of a thinly settled region with a high reliance on the renewable resources. For example, the Stikine River in its relative wild state supports 700 people (The Sun August 19, 1984). Should this renewable economy be destroyed by imposing on it an economic activity that has a limited life? The northwest's large expanse of pristine wilderness is a resource in its own right with significant recreational, primary food source and scientific research potential.

Finally, diversifying the local economy should be initiated at the beginning of the settlement planning process not as an adjunct. Tumbler Ridge attempted this to some extent with the establishment of a provincial park and an industrial park. Diversification could also be encouraged through negotiations with the resource firm to contract locally wherever possible. An example would be the servicing of equipment and the use of
local contractors.

For native populations, who are still actively engaged in the non-cash economy, opportunities should be created to ensure they can participate in the wage economy, which will likely be short term, without losing their non-wage economy. This concept would be compatible with block time commuting.

At a more macro level, linkages between the northern and southern half of the region should be encouraged. Jacob's (1984) argument, that "cities lead development of rural areas", suggests that the northern region would benefit from diversification and expansion of the economic base of the southern communities in the region. The southern communities' relative proximity to one another suggest that there is room to explore an industrial strategy centered on the dispersed city concept. Each community would specialize in a particular function and together they would form an aggregate city with both local specialization and regional diversification. This would enable them to act as a larger base for northern resource development and thereby capture a greater share of the generated economic rent.

New towns should only be considered if they can be used to strengthen regional territorial ties through their location, their connecting infrastructure within the region, their future residents and their regional economic role. Spatially the new towns should be sited to enhance inter-settlement flows. This implies well developed access roads. The new town's residents should be recruited from the region and every effort should be
made to facilitate their visiting their previous place of residence for example, the use of flexible work schedules. Economically, the new towns should share service functions with their nearest neighbours to encourage inter-community commuting.

However, new towns should only be built as a last resort. Policy should first concentrate on using existing towns so that intra-regional linkages are improved and economic diversity encouraged. The commute option is compatible with this policy. The commute option allows communities to take advantage of the short term benefits of mining without the social costs associated with resource projects. The commute option, also has the potential to build stronger ties between the north and the south halves of the region.

The nine mine projects should not be viewed as a panacea for the region. Instead, their development should only proceed if it can be done in a manner which will contribute to the region's resiliency, not destroy it.

5.4.2 Representation: Bottom Up

The "Northwest Report" was prepared top down. There was no input in this initial and important planning phase from the federal government, the regional governments or the Indian bands. An alternative model is the bottom up approach used in the Tug Hill example. Local forums and advisory groups could be established to assist the planners in their analysis of development options for the northwest. An example of this approach in British Columbia is the Slocan report (Slocan
Valley Community Forest Management Project, 1974).

Further Action. The Northwest Report concludes with a call for the strengthening of local institutions to enable local residents to participate more effectively in regional development. This conclusion on local government requires elaboration to be effective. The experience in Elkford and Tumbler Ridge could be drawn on as well as such models as Tug Hill. For existing towns this suggests providing the resources, along with incorporation, for the towns and Indian reserves to explore local development options and their prospective role in light of the mining proposals.

A final suggestion concerns regional government. The wide dispersal of the proposed projects and their regional implications, especially if block commuting is utilized, suggest a regional government be developed in step with local government. As the region is in an early stage of development the regional boundaries must reflect the present and the future physical, cultural, economic and political space of the region. Given the geography of the region this might entail delimiting subregions which, in aggregate, form a broad overview of the northwest region presenting common concerns when dealing with senior levels of government.

This concept of sub-regions is recognized in the northwest study. The summary "Northwest Report" identifies three subregions "which can be planned in relative independence". These are "Kutcho Creek Resource Area", the "Mount Klappan Resource Area" and the "Schaft Creek/Stikine Resource Area"
(Ministry of Industry and Small Business, 1983., page 57). To be compatible with the concept of local government, the regional district, affected villages and Indian reserves would be involved with delimiting and initiating the sub-regions. The sub-regions would also be the most logical body from a bottom up perspective to undertake any new town planning if deemed necessary.

5.4.3 Strategic Process

Proactive. The "Northwest Report" is a strong endorsement of proactive planning. An attempt is made to anticipate the consequences of private sector initiated development in the northwest and to set out government policy options. However, the report does not go far enough. The suggested government response is based on a narrow range of futures. There is no attempt, as suggested by Trist, to present strategies to create alternative futures. In short functional as opposed to substantial rationality is relied on.

Process Oriented. The settlement report focusses on the process as opposed to an end product plan. It lays out options and suggests strategies to achieve the options.

Incremental. The Northwest Report establishes an incremental planning approach. The report strongly states that it is only the first step in a more comprehensive analysis. This suggests we can expect more detailed reports focused on more specific
geographic areas as government policy is clarified and private projects are formalized.

**Flexible.** The process orientation of the report provides a basis for a flexible approach to reduce uncertainty. Where uncertainty is low and the mining projects have a predictable and long term lifespan (e.g. greater than 15 years), the report looks more favourably on new towns. Where uncertainty is high, block time commuting is promoted since public investment is minimized and the strategy is easily reversed if the unanticipated occurs. The principle followed here is when uncertainty is low the luxury of detailed planning is possible. When uncertainty is high, planning must proceed in a more incremental fashion so that risks are lowered. This is an example of a safe failure as opposed to a fail safe approach. The caveat to this is that experience with resource settlements suggests that the art of predicting the life expectancy of resource projects is highly inaccurate. Therefore, even the projects labeled "long term", such as Mount Klappan and shaft Creek, should be viewed as potential failures.

**Experimental.** The settlement option report is somewhat experimental. Building on the government's experience with resource settlements, the settlement report uses a logical framework to analyze settlement options and to generate some innovative ideas. The commute options are a novel approach in British Columbia.

In terms of information used, the Northwest studies are
primarily descriptive. They describe future states based on an extrapolation of market conditions and manpower requirements. Most of the impacts considered are first order impacts. The one exception is the socio-economic analysis which acknowledges the ripple effects the proposed mines will have on the existing native subsistence and independent commodity production economy based on trapping and guide outfitting.

The settlement report acknowledges gaps in information. The report recommends research on the social consequences of block time commuting as well as research on the implementation of the commute option. The purpose of the research, under a strategic process, is to reduce uncertainty. For this reason research should also be conducted on alternative forms of development to the "high risk" mining proposals, as well as research on reducing the risk associated with the mine proposals. Can they be developed in smaller stages? What kind of guarantees can be provided by the firms regarding future requirements for labour and government services?

Future Action. The main gap in the strategic process is the dearth of strategic information. This, in part, reflects the top down nature of the exercise, to date, which has restricted the generation of local input and personal knowledge. This gap may be filled if the recommendation for more local input in the next planning stages is acted upon.
5.5 Conclusion

The 1983 Northwestern British Columbia settlement study is based on the "local government model" being developed in northeastern and southeastern British Columbia. As with Tumbler Ridge and Elkford, the major limitations in the settlement analysis stems from the parameters which frame the study, namely provincial regional resource policy. The provincial policy is based on a functional definition of regions as indicated by its reliance on regional development as a justification for such projects as northeast coal. This overriding framework limits the extent to which the settlement planning process can adapt territorial planning concepts and focus on creating regional resilience. Instead of examining how the proposed mine can best serve the region the policy makers examine how the settlement options can best serve the mines. Subsequently, questions such as "regionalism" and "resilience" are adjunct to the central issue of developing the resource project. The limits to pursuing these concepts are dictated by the economic development planners and how far they are willing to shift focus from a functional view to a territorial view of regional development. It is precisely this shift which the new perspective presented in this thesis advocates. Chapter six explores how such a shift might be implementation given existing provincial policies.
VI. CHAPTER 6: SUMMARY AND PROPOSALS

6.1 Introduction

This chapter has two purposes. The first is a summary, the second is to suggest what steps can be taken towards "a territorial regional planning perspective" within the confines of existing provincial resource settlement policy.

6.2 Synopsis of the Territorial Regional Planning Perspective

The starting point of this thesis is the internal and external perspective of the resource settlement literature. An examination of the traditional resource town literature leads to the observation that the goal of resource town planners has been to provide a stable labour supply through "community stability". The traditional literature, based in town planning and sociology, views community stability as the mature state in the life cycle of a town. Focussing on "internal processes" the traditional literature advocates pre-building and encouraging the social trappings of a mature community. Provincial resource settlement policy has paralleled the evolution of the traditional literature. Current provincial policy advocates "local government" as the most appropriate vehicle to nurture community stability.

The limitations of the traditional literature are expressed by the critical resource settlement literature. The premise of the critical literature is; labour stability in a resource
settlement is impossible since labour demand is inherently unstable in resource settlements. According to the critical literature, community and labour stability will only be achieved when the resource town in question has a diversified economic base. However this is an unlikely event given the world's economic structure. The main limit of the critical literature is that it provides little direction for planning. Resource projects will proceed and decisions on the settlement option must still be made.

To advance resource settlement planning policy beyond the limitations of the traditional and the critical literature this thesis suggests an alternative approach of "territorial regional planning" with the goal of "regional resilience". Stability implies resisting changes while resiliency implies acceptance and adaption to change. This thesis argues that stability is an unrealistic goal for resource settlement planning and suggests that the focus should be on creating resilient regions.

The concept of "territorial regional planning" emerges from a review of regional settlement and regional development theory. The conclusion is that resource settlement policy has generally relied on functionally based settlement and development theory. Functionally based regional planning, which includes resource settlement planning to date, relies on "central place" theory and "friction of distance" models to explain settlement patterns and "growth center" concepts to explain economic development.

A territorial view is more philosophical than normative. A region, from a territorial perspective, is a holistic concept
comprised of functional linkages, a common history, a homogeneous social and cultural makeup, a common political framework and distinct geographical boundaries. A territorial view is all encompassing with development viewed as much more than economic development. In terms of settlements a territorial perspective rejects, in part, the central place theory as being too narrow in its analysis and suggests that a resilient region is comprised of a cluster of settlements which are highly interlinked functionally and territorially.

As a synthesis for the two bodies of literature a territorial regional perspective incorporates the community focus of the internal perspective and narrows the global economic focus of the external perspective to the region, a more manageable geographical unit. The region is also the most obvious choice for nurturing resiliency. This premise draws on two sources for support. First, the system's attribute "resilience" is more applicable at a regional level; a resilient community is part of a resilient network of settlement. Second, rural growth trends support the concept of regional resilience. In many instances, resilient small towns are part of resilient regions. Finally, a resilient region is an obvious goal of territorial planning which replaces the "growth center" concept of generating regional growth with internally generated regional growth.

The suggested process to implement the territorial regional planning model is drawn from the social ecologist/systems planning theory literature. It rejects the traditional
"rational comprehensive" planning style in favour of a strategic process implemented through bottom-up representation.

When we use the territorial regional perspective as a litmus test for the most recent examples of the Provincial "local government" resource settlement policy some interesting results emerge. The case studies indicate a slight move towards the suggested perspective. The present process has in part become strategic, there is an attempt to encourage bottom up participation in the implementation of the settlement option and there is at least an acknowledgement of regional concerns. The evidence suggests that the major limitations stem from the provincial regional economic development policy which frames the settlement planning process. The provincial development policy is top down and functionally based relying on externally imposed development. This has restricted local involvement and the building of regional resiliences.

A hypothetical application of the suggested policy demonstrates how a switch in focus from "community stability" and project specific to "regional resiliency" and holistic development results in a different resource settlement policy which, if acted on, has the potential to alter the top down form of regional development. Instead of examining how the settlement option can best serve the mine, the policy maker would examine how the mine can best serve the region.
6.3 Territorial Regional Planning and Existing Provincial Policy

6.3.1 Existing Provincial Policy

Existing provincial resource settlement policy has been stated as:

"In order to provide the level of public services required by today's society and to provide stability and diversity in community social life, the establishment of single-company and/or single resource communities associated with coal developments will be avoided where possible. If the significant requirements for a trained, stable workforce alone are to be satisfied, communities must include the level of social amenities and stability which will attract and keep people in coal mining areas. Development of multi-resource communities which may outlive activities associated with coal mining will be encouraged in the planning of coal developments (MEMPR, 1977, quoted in Ministry of Municipal Affairs, 1984).

In short, no new towns unless unavoidable, and if a new town is required plan as if the town will survive forever by building a town with a high level of social and physical infrastructure and encourage economic diversification.

There is no clear policy stating when a new town is justified. According to the Northwest report there is no easy way to make such a decision and it is arguable that the final decision is a political one. However, the northwest report does suggest criteria to assist the decision maker. The criteria takes into account two main factors:

- existing characteristics of the region and settlement patterns, and
- characteristics of the project in question.
The current provincial planning and implementation policy for resource towns has been called a local government approach. Rooted in the traditional literature, its goal is community stability. Local government is promoted as the vehicle best suited to achieve this goal. In theory, as noted in the case studies, the "local government" policy is process oriented and relies on local involvement in the planning and implementation of the settlement option.

In practice, current provincial policy deviates from the stated policy. The planning for Elkford and Tumbler Ridge was initially top down, responding to externally imposed projects. Regional and local government played a secondary role in the planning of the settlement options associated with each project. Regional concerns and alternative economic activity have only been viewed as an adjunct to the project. The local government policy has been successful in generating community involvement and short-term community stability. However, the communities are still based on one resource with little economic diversification.

6.3.2 Policies For Implementation of a Territorial Regional Approach for Resource Settlement Planning

Through the development of the "territorial regional" model and its use to evaluate the case studies numerous policy statements have been generated. The purpose of this section is to compile these statements into a format which will be of use to the resource settlement planner. Individually most of these
statements do not deviate substantially from existing policies and have been cited previously in the literature. As a package the policies are quite radical implying a shift in goals from "stable resource communities" towards the long term goal of "resilient regions". For clarity, the suggested policies have been divided into settlement and economic policies. In fact the settlement and economic policies interact and one set can not be implemented without influencing the other.

6.3.2.1 Settlement Policy

The general policy statement is: "use and build upon existing regional settlement system". This implies:

- No new towns, especially when only one resource is to be exploited and the environment is too harsh for prolonged human settlement.

- If the life expectancy, size and location of a resource project makes a new town the only feasible option, then the town should be connected into existing settlement patterns. This implies construction of good transportation linkages between the new town and existing towns and the sharing of services between towns to facilitate movement of people and to reduce costs.

- Use block time commuting as an alternative to new towns. It provides greater flexibility as a management strategy.
• Use existing regional settlements as staging areas for block time commuting. This will help local employment and aid the local economy.

• Encourage the movement of people, goods and the workforce within the region. Examples are building good roads, implementing a transit system, an open company housing policy which allows workers to choose where they want to live within the region and a hire local policy.

• Foster local government, experience suggests communities mature faster when the residents have a say and a stake in the running of their town.

• Design more meaningful regional boundaries based on history, common interests and the economic base. Regions should develop bottom up with the constituent communities coming together to address mutual problems.

• Provide more meaningful status and power for regional districts so that they can be more effective in addressing mutual problems and can have a more active role in settlement planning for the boom and bust of resource projects.

6.3.2.2 Economic Policy

The general policy statement is: "use the proposed project
to foster regionally based economic diversification by planning ahead". This implies:

• Proceed in incremental steps.

• Tie project approval to an agreement with the proponent to; hire locally, purchase locally, use local service industries and if necessary assist in the establishment of local industry to service the mine (e.g. construction, machinery maintenance).

• Use local financial institutions for pension funds, pay role etc.

• Encourage the resource firm to relocate office staff in the region.

• If building a new town locate it where the town can service other potential resource projects.

• Along with the initial community plan, an economic plan and an economic development officer should be utilized in the early stages of building a new town. The goal, to be sought in conjunction with adjacent communities at a regional level, will be to diversify the region's economy. An economic plan would address such questions as what infrastructure is required to attract economic development,
what is the region's comparative advantage and what government grants are available?

- Persue intercommunity co-operation in economic development. Plan together at the regional level thereby sharing costs and having a common position when approaching the private sector and senior levels of government.

- Implement intercommunity tax base sharing thereby encouraging regional economic growth and cooperation.

- Pursue risk protection guarantees from the firm to ensure the communities are not liable for overservicing as a result of market miscalculations by the resource firm.

- Ongoing planning at the regional level for resource development and settlement planning as opposed to these being project specific and being top down from the provincial level. This is necessary so that when a proposal is acted upon it will easily fit into an existing policy framework; the region will know how to respond so that the project will best serve its interest and contribute to building regional resilience.

While the above policies are not comprehensive and applicable in every case, they do provide an alternative set of guidelines to those offered by both the internal and external perspective in the existing resource settlement literature.
While adherence to the suggested policies will not create a resilient region in the short term they do offer an alternative path which at worst will mitigate some of the negative impacts of resource projects and at best will lead to an alternative future of more resilient and democratic regions where the effects of boom and bust are minimized.
LITERATURE CITED


Berry, Brian, 1980 The Urban Problem in Archibald Woodruff ed., "The Farm and the City", Prentice-Hall inc. N.J.


Faculty of Environmental Studies, York University, 1974, Innovative Development of Southern Manitoba: The Social Policy Field, York University. Toronto.


Fernie Historical Association. 1967. Retracking with the Fernie Historical Association. Fernie, B.C.


Horsfall, R.B., etal. 1974, Parameters of a Healthful Community and Individuals Functioning in Resource Frontier Towns. Simon Fraser University; Dept. of Geography. April, 1974.


Robinson, Ira 1962, New Industrial Towns on Canada's Resource Frontier University of Chicago.


Vancouver Sun. 15 September, 1977.


