

OFFSHORE OIL DEVELOPMENT AND COMMUNITY IMPACTS:

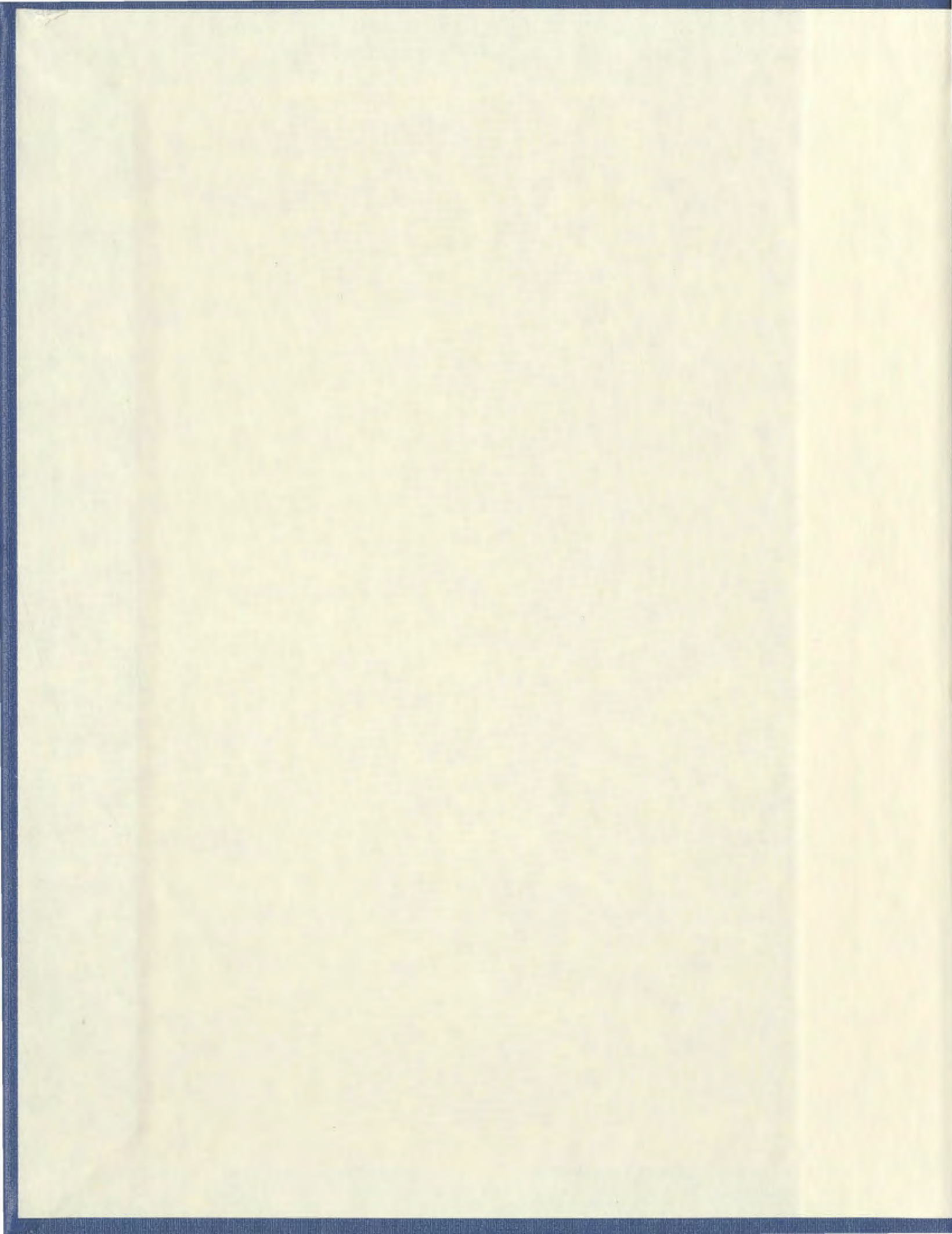
CHANGES IN ATTITUDES AND PERCEPTIONS IN
COMMUNITIES AFFECTED BY ONSHORE ACTIVITIES

CENTRE FOR NEWFOUNDLAND STUDIES

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**Offshore Oil Development and Community Impacts:
Changes in Attitudes and Perceptions
in Communities Affected by Onshore Activities**

by

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A thesis submitted to the
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ABSTRACT

For decades, social scientists have tried to understand the social and economic impacts of large-scale development on rural communities. Much of the uncertainty has recently been attributed to the limited time frame observed in most empirical analyses. More recently, researchers studying the impact of large-scale development have taken the issue further through more specific consideration of the extent and duration of impacts in both time and space. This research examines the changing temporal and spatial impacts of onshore construction activities related to the Hibernia Development Project, at Trinity Bay, Newfoundland to test the concepts put forward by recent social impact researchers. In doing so, the research demonstrates some of the limitations of the current environmental assessment process in Canada and the importance of addressing those limitations for the continued improvement of impact management in relation to large-scale projects. The study uses the results of an existing pre-development survey of attitudes and perceptions as the baseline for two subsequent research phases undertaken at later stages in the construction project. Results generated from the subsequent surveys allows the analysis of changes in attitudes and perceptions over time, as well as the analysis of spatial variation in attitudes and perceptions among communities within the immediate impact area. The study shows that impacts can change over time and space, and that both community and project characteristics are important in determining the types of impacts that occur and how communities are likely to respond to those impacts.

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For Dad

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CHAPTER I

INTRODUCTION

1.1 Large-scale Development and Social Science

For decades, social scientists have tried to understand the impact of large-scale development projects on rural communities. These projects typically have a number of characteristics that are "foreign" to the environment into which they are introduced. They usually include a construction phase involving hundreds or thousands of workers, the influx of workers is normally greater than nearby communities can accommodate, the final activity is typically "alien" to the traditional way of life and, in most cases, the activity completely dominates the local economy. Early studies tended to view large-scale development as generally beneficial, creating economic growth and expanded municipal services for the communities in which they were located (Murdock and Leistriz 1979; Summers *et al.* 1976). In the 1970s, however, many of the 'boomtown' communities hosting these projects, began to report experiences of overwhelming negative effects, such as increased crime (Freudenburg 1982; Krannich *et al.* 1989), increased cost of living, alcohol and drug abuse, loss of sense of community (Cortese and Jones 1977), decrease in the density of acquaintanceship (Freudenburg 1986), the disruption of social ties and increased stress (Finsterbusch 1982). The conclusion that has since emerged is that overall impacts have neither been as positive nor as negative as claimed in earlier accounts (Freudenburg 1986; Murdock *et al.* 1986). Empirical

evidence to date shows that, while disruptions may occur under certain circumstances, considerable uncertainty remains concerning which aspects of community life are affected and to what degree (England and Albrecht 1984; Krannich and Greider 1984; Krannich *et al.* 1989). More recently, researchers studying the impact of large-scale development have taken the issue further through more specific consideration of the extent and duration of impacts in both time and space (Burdge and Vanclay 1995; Interorganizational Committee 1995).

Much of the uncertainty surrounding the question of impacts of large-scale development has recently been attributed to the fact that most empirical analyses have considered a very limited time frame, focussing exclusively on the construction-development stage of projects (Brown *et al.* 1989; Freudenburg and Gramling 1990). Recent research has begun to show that the extent and timing of impacts can vary considerably throughout the life of a project (Brown *et al.* 1989; Burdge 1987). While in terms of the physical environment, it is true that no impacts occur until a project leads to alterations of physical or biological conditions, in the human environment impacts can begin as soon as there are rumours about a project and can continue long after the project has ended (Gramling and Freudenburg 1991). By not adopting a more longitudinal approach, social impact research fails to document the full range of impacts actually taking place (Freudenburg and Gramling 1990).

Studies of the impacts of large-scale resource industries in the western United States and Canada show how significant an oversight this has been. Even in communities facing some of the most dramatic construction-development phase impacts, certain impacts occurring **before** the onset of development were found to be significantly greater than those taking place during the construction-development phase (Brown *et al.* 1989). In fact, communities can experience significant impacts even when a proposed project never actually takes place (Boulden 1990).

Those pre-development impacts are what Freudenburg and Gramling (1990) call “opportunity-threat” impacts, those changes which derive from local communities' efforts to identify, define and respond to both the ongoing and anticipated implications of development. The impacts may be seen as opportunities to those who view the consequences of a proposed project as positive and/or threats to those who see them as negative. In the case of economic impacts, opportunities for increased employment and industrial and commercial spin-offs often receive most of the early attention.

The impacts of large-scale development not only vary over time but over space as well (Interorganizational Committee 1995; Mitchell 1987; Maclaren 1987). There are few studies, however, that examine the spatial variation in impacts associated with these projects. By definition, large-scale developments in rural areas have spatial characteristics since they are usually the result of outside agencies proposing to undertake

a project in a local community. Change of any kind brings social costs to some and social benefits to others. The economic benefits associated with large-scale development tend to be justified on a regional or national level, while the social costs are almost always borne at the community or local level (Burdge 1987). However, when either social costs or benefits to local communities are measured against regional and national economic goals, social concerns generally finish a distant second (Burdge 1987).

1.2 Limitations of Environmental and Social Impact Assessment

In Canada, projects occurring within federal jurisdiction and deemed to have potentially significant environmental consequences are to be the subject of an environmental impact assessment (EIA). A synthesis of definitions indicates that EIA is essentially a decision-making tool which is used to identify, predict, and evaluate the possible environmental and socio-economic effects of proposed activities, so that anticipated negative impacts can be avoided or minimized and potential benefits can be maximized (Burdge 1987; Clark 1990; Meredith 1991). Social impact assessment (SIA) is a component of the broader EIA process, which focuses on the appraisal of impacts on the people and communities in areas affected by these proposed activities (Bowles 1981; Burdge 1987; Burdge and Vanclay 1995; Freudenburg 1986). As with EIA, the goal of SIA is to anticipate the likely areas of impact and to utilize the information in the planning and decision-making process (Burdge 1987).

Despite more than two decades of environmental impact assessment in Canada, the ability to accurately predict the likely consequences of a proposed project is limited. Because of the general absence of follow-up programs in assessment processes, relatively little has been learned from previous projects that can be usefully transmitted to others. Up until now, most assessment processes have ended after a proposal has been approved, with little attention given to the post-approval stage of a project (Armour 1988; Beanlands and Duinker 1983; Storey 1995). Research has shown, however, that impacts vary significantly over time and other unanticipated impacts can occur once a project is underway (Brown *et al.* 1989; Burdige and Vanclay 1995; Freudenburg and Gramling 1991). A follow-up program enables the examination of the accuracy of predictions and the adequacy of mitigative and enhancement measures identified during the assessment. The information can ultimately lead to improvements in the assessment process and its ability to predict and address the implications of future projects.

Recent changes to the environmental assessment process in Canada have made provisions for the design and implementation of follow-up monitoring programs. A limitation of the Canadian Environmental Assessment Act is its focus on the environmental (i.e. biophysical) implications of development. However, many megaprojects are undertaken with economic development objectives in mind, in which case measures designed to create or enhance economic and social benefits are as important as those designed to avoid or ameliorate adverse environmental effects (Storey 1995). Therefore, the

contribution that required follow-up programs can make to the ability to predict and address impacts of projects on the human environment, remains questionable.

This research examines the changing temporal and spatial impacts of a large-scale project to test the concepts put forward by recent social impact researchers. In doing so, the research will demonstrate some of the limitations of the current EA process in Canada and the importance of addressing those limitations for the continued improvement of impact management in relation to large-scale projects.

1.3 Study Objectives and Hypotheses

The focus of this study is the onshore construction activity related to the Hibernia Development Project which took place at Bull Arm, Trinity Bay, Newfoundland. The research will examine changes in the attitudes and perceptions of the residents of communities immediately surrounding the Bull Arm site toward the construction project.

The objectives of the research are to:

(i) contribute to longitudinal socio-economic impact research through a comparative study of changing attitudes and perceptions;

(ii) contribute to the understanding of the spatial variation in attitudes and perceptions toward large-scale development; and

(iii) contribute to a broader understanding of the determinants of the social and economic effects of large-scale development.

The research re-examines the hypothesis put forward during a pre-development study of attitudes and perceptions (Fuchs and Cake 1986), which stated that:

Hypothesis 1: A positive experience with previous large-scale development, a positive attitude toward future large-scale development and positive perceptions of political efficacy, all contribute to a positive response to a given project or activity.

It was further hypothesised that:

Hypothesis 2: Considering the strength of positive attitudes expressed during the pre-development phase, attitudes toward the project will have remained favourable up to and including site preparation and through construction to the completion of the platform.

Hypothesis 3: Based on on-going experience with the construction project, perceptions of its positive and negative consequences will become more focussed, as reflected in, for example, a reduction in the number of key concerns and a clearer sense of priorities.

Hypothesis 4: Perceptions of positive and negative consequences of the project will vary according to distance from the Bull Arm construction site, that is, residents of communities adjacent to the site will be more likely to perceive **both** positive and negative effects than those of communities further away.

1.4 Research Methods

To test the above hypotheses, the study uses the results of an existing pre-development survey of attitudes and perceptions as the baseline for two research phases undertaken at later stages in the construction project. The pre-development survey, referred to as Phase I of the study, was conducted in 1985 during the planning stages of the Hibernia Development Project. The survey captured community attitudes and perceptions prior to any final decisions about the type of production system to be used and, consequently, which specific areas would be affected by related construction. Phase II of the study was conducted in 1992, after the type of production system had been determined and approximately 18 months into the site-preparation phase. Phase III was carried out in 1996, just one month before the completion of the concrete gravity-based component of the construction project.

The research uses a questionnaire survey method to assess changing community response to the Hibernia construction project through a comparative study of attitudes and perceptions in communities immediately surrounding the Bull Arm construction site. The availability of a pre-development baseline of attitudes and perceptions provided the opportunity to use a longitudinal research design, an opportunity which rarely exists in studies of large-scale projects and their effects on rural communities.

1.5 The Study Area

Bull Arm, the site of the Hibernia construction project, is located in Trinity Bay approximately 150 kilometres west of St John's. The study area encompasses the 10 communities along the Isthmus of Avalon closest to the Bull Arm construction site. These communities extend from Little Harbour East in Placentia Bay to Swift Current, near the northern end of the Burin Peninsula (see Figure 3).

Prior to hosting this project, the area had significant experience with community change. First of all, during the 1960s the area was a prime destination for many Placentia Bay communities targeted for the Newfoundland Household Resettlement Program, which resulted in some communities more than doubling their population over a five-year period. The area has also experienced other large-scale developments, specifically the construction and operation of the Come By Chance Oil Refinery and the Electric Reduction Company of Canada (ERCO) phosphorus plant at Long Harbour.

1.6 Thesis Organization

Chapter 2 describes the emergence of environmental impact assessment and its evolution in the United States and Canada over the past three decades, particularly the social impact assessment component of the process and its current provisions for follow-up programs. This is followed by a discussion of the literature that has accompanied the evolution of the impact assessment process, specifically that related to the temporal and

spatial aspects of socio-economic impacts and the role of attitudes and perceptions in understanding community response to large-scale development.

Chapter 3 provides an overview of the Hibernia Development Project, including the project's environmental impact assessment process and subsequent onshore construction activities at Bull Arm. This chapter also describes the study area, including its history of community change and experience with large-scale development prior to the Hibernia construction project. Chapter 4 describes the research methods for the three phases of the study including research design, sample selection, survey implementation, response rates and the analytical techniques used.

Chapter 5 discusses the results of the study, beginning with the pre-development attitudes toward large-scale development, expectations regarding positive and negative effects of the development, and baseline indicators of community satisfaction and quality of life. It then describes the experiences of community residents up to the site-preparation phase and, finally, the wind-down phase which occurred with the completion of the construction of the concrete platform. The discussion makes particular reference to community awareness and public involvement in the decision-making process, how local residents' positive and negative expectations compared with their experiences with the project, and how they expected the project to affect their communities beyond the current phase.

Finally, Chapter 6 discusses the conclusions about community response to large-scale development in light of the stated hypotheses and community attitudes and perceptions at different stages in the Hibernia construction project, and comments on the implications of the results for the Canadian environmental assessment process and socio-economic research regarding community impacts of large-scale development.

CHAPTER 2

BACKGROUND LITERATURE

The study of attitudes and perceptions, as they relate to large-scale development in rural communities, is rooted in the field of social impact assessment (SIA). SIA, in turn, is a component of the broader environmental impact assessment (EIA) process. This chapter describes the evolution of EIA from its introduction in the United States during the 1960s, through to its adoption and subsequent evolution in Canada, including some of the strengths and limitations of Canada's current environmental assessment process. It also summarizes the social science literature that has accompanied the progression of EIA and SIA, particularly related to the temporal and spatial aspects of large-scale development, and the role of attitudes and perceptions in understanding community response.

2.1 Environmental Impact Assessment

The concept of environmental impact assessment (EIA) emerged during the 1960s in response to increasing environmental awareness and public demand for environmental factors to be considered in the decision-making process. It is generally defined as a process of identifying, predicting, and evaluating the possible environmental (biophysical and socio-economic) effects of proposed activities, at a stage in the planning process

where anticipated negative impacts can be avoided or minimized and potential benefits can be maximized (Burdge 1987; Clark 1990; Freudenburg 1986; Meredith 1991).

EIA was officially introduced in the United States with the passage of the National Environmental Policy Act (NEPA) in 1969. NEPA required that the proponent of any federal action “significantly affecting the quality of the human environment” must prepare a balanced, interdisciplinary, and publicly available assessment of its likely impacts or consequences before the activity could proceed (Caldwell 1975; Clark 1990; Freudenburg 1986). This legislative approach to environmental protection allowed the general public, operating through the courts, to ensure that agencies complied with the regulations set forth under the Act. Before the enactment of NEPA, project assessment was limited to technical feasibility studies and cost-benefit analyses, which were essentially accounting approaches, rarely giving consideration to the environmental or social consequences of development (Clark 1990; Freudenburg 1986).

2.1.1 SOCIAL IMPACT ASSESSMENT

While the assessment of both biophysical and socio-economic impacts is understood to be part of the EIA process, it was the biophysical physical environment that received most of the early attention (Clark 1990; Craig 1990). It was not until several years after the introduction of EIA that the social consequences of development received serious consideration. It became increasingly evident that altering the physical

environment also altered the culture and social organization of human populations (Burdge and Vanclay 1995). The need for increased attention to the social consequences of development became particularly evident in the building of the Alaskan pipeline, which began in 1973. It was generally assumed that Fairbanks - serving as a transportation, employment and supply centre - would reap many benefits once the project was underway. Instead, the rapid influx of outsiders who came seeking project jobs, drastically affected the city's ability to provide vital services and resulted in unplanned negative effects that, in many ways, outweighed any benefits they received (Dixon 1978). The Fairbanks experience precipitated more formal action concerning social impact assessment (SIA).

SIA has since become part of project planning and part of EIA (Burdge and Vanclay 1995). It focuses on the appraisal of impacts on the people and communities in areas affected by development or policy change (Bowles 1981; Burdge 1987; Burdge and Vanclay 1995; Freudenburg 1986). As with EIA, the goal of SIA is to anticipate the likely areas of impact and to utilize the information in the planning and decision-making process (Burdge 1987).

Social impacts include all social and cultural consequences to human populations of any public or private actions that alter the ways in which people live, work, play, relate to one another, organize to meet their needs, and generally cope as members of society (Burdge

and Vanclay 1995; Interorganizational Committee 1995). Specifically, these effects encompass issues such as demography; employment and other economic issues; regional transportation; housing and community infrastructure; health, education and social services; local government costs and benefits; and lifestyle and quality of life (Lang and Armour 1981). Although the social and environmental consequences of development are often discussed separately, SIA is not a counterpart to but rather a component of the broader EIA process (Lang and Armour 1981).

2.1.2 THE EIA PROCESS

While not all EIA systems contain every element, the process emanating from NEPA and subsequently diffused around the world can be represented as a series of iterative steps (Wood 1995). As outlined in Figure 1, these steps include:

- proposal registration

- deciding whether an environmental assessment is necessary in a particular case (*screening*);

- deciding on the key issues which should be included in the environmental assessment (*scoping*);

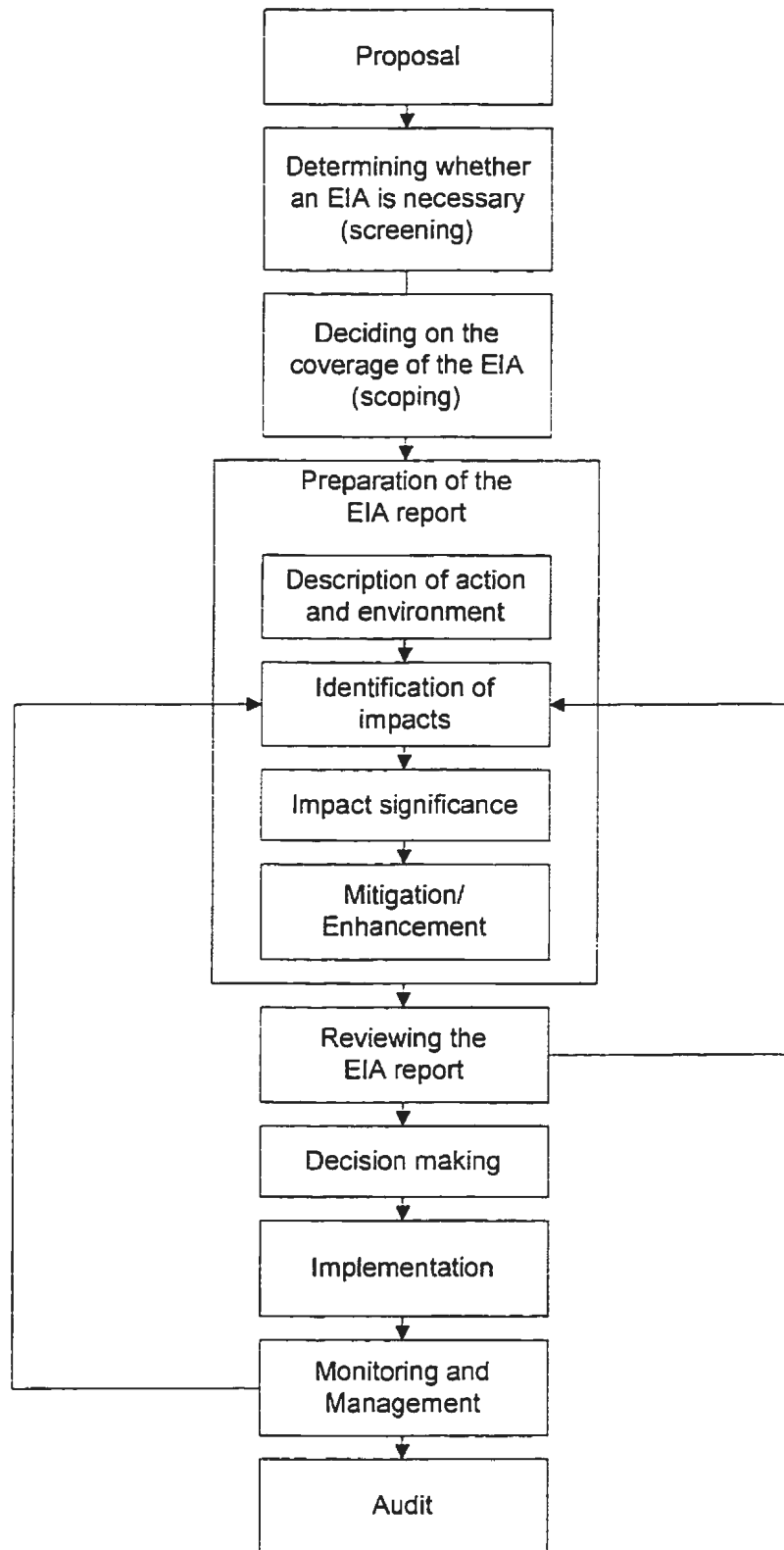


Figure 1: The environmental impact assessment process

- carrying out the environmental assessment, which involves the scientific and objective analysis of the scale, significance and importance of the impacts identified (*assessment*). The results of the assessment are assembled into a document called an Environmental Impact Statement (EIS) which contains a discussion of beneficial and adverse impacts considered to be relevant to the project; as well as means of enhancing or mitigating those impacts in the interest of affected communities;
- review of the adequacy of the EIS by a government agency or independent review panel and the public (*review*);
- making a decision about whether the proposal should proceed using the EIS and opinions expressed about it during the review process;
- implementation of the proposal, if the decision is made to proceed;
- monitoring the impacts of the proposal to ensure that any conditions imposed during assessment and review are being enforced (*monitoring*). An effective monitoring program includes provisions for the management of negative or unanticipated consequences of the project;
- after completion, a review of the accuracy of impact predictions and effectiveness of enhancement and mitigative measures (*auditing*).

Wood (1995) suggests that input from consultation and public participation are important at each stage in the EIA process, though the people or bodies invited to comment on the proposal may vary. However, consultation rarely occurs during the *screening* stage of the

process. Whether the assessment of a particular proposal is required, is normally determined by the regulations for a given jurisdiction. Similarly, the decision as to whether the proposal is allowed to proceed is a government responsibility and is unlikely to involve public consultation. Decision-making is normally based on the contents of the EIS and any public input that was received during the review process.

The review process itself may lead to the identification of project impacts that were not identified during the assessment or to refinements in the mitigation and enhancement measures proposed in the EIS. The information collected during the review is fed back into project planning and may lead to modifications in project design or management strategies. Likewise, monitoring not only seeks to ensure that the proponent complies with the conditions set during the assessment and review, but can provide feedback to project decision makers by identifying unanticipated impacts that arise after the project is under way. Such feedback allows the implementation of appropriate mitigative and enhancement measures to address those impacts as they arise.

2.1.3 ENVIRONMENTAL ASSESSMENT IN CANADA

Environmental impact assessment, or environmental assessment (EA) as it is referred to here, formally began in Canada with the creation of the federal Environmental Assessment and Review Process (EARP) in 1973. The purpose of EARP was to ensure that the environmental consequences of all federal project or policy proposals were

assessed for potential adverse affects (Couch 1988). Federal proposals included those undertaken directly by a federal initiating department, those which may have an environmental effect on an area of federal responsibility, those to which the federal government made a financial contribution, or those located on lands, including the offshore, that were administered by the federal government (Couch 1988). EARP was administered by the Federal Environmental Assessment and Review Office (FEARO), the Executive Chair of which reported to the Federal Minister of Environment (MOE).

Unlike NEPA, EARP was not covered by legislation. It was principally a project planning process based on the principle of self-assessment. All federal departments or agencies having decision-making authority for proposals, developed their own initial assessment procedures to determine whether proposals had potential significant adverse environmental impacts. If so, or if the project was the subject of public concern because of its potential environmental effects, the minister of the initiating department referred the proposal to the MOE for review by an EA panel (Couch 1988; Wood 1995). Panels consisted of three to seven independent members appointed by the MOE for each referred proposal. Panel members were selected for their “objectivity, public credibility and special knowledge of factors associated with the proposed undertaking” (Couch 1988: 13).

From the beginning, many aspects of EARP were criticized (Needham and Swerdfager 1989; Storey 1987) and, after more than a decade of implementation, the Government of Canada recognized the need to reform the process. There were two major criticisms of EARP. First, that it was founded on the principle of self-assessment, which gave the “initiating department” the responsibility for screening or assessing a proposal which sometimes resulted in conflicts of interest. The second major criticism was that the process lacked the legislative authority to enforce regulations (Delicaet 1995; FEARO 1987). FEARO (1987) also acknowledged that some provisions of the process were unclear, leaving too much scope for divergent interpretation in some important areas. Aspects of EARP that had proven problematic were matters such as which agencies should implement the process, the types of projects that must be assessed for their environmental implications, the content of an acceptable environmental assessment, the definition of public concern, and the responsibilities and obligations entailed in self-assessment (FEARO 1987).

In 1990, in response to the need for EA reform, the federal government introduced the Canadian Environmental Assessment Bill, which was given Royal Assent in June 1992. The proposed regulations were published for comment in 1993 and the Canadian Environmental Assessment Act (CEAA) came into effect early in 1995 (Wood 1995).

While it has many similarities, the Act differs from EARP in that it is intended to entrench in law the federal government's obligation to integrate environmental decisions in all its decisions relating to projects (Wood 1995). The federal authorities who are subject to the Act include federal ministries, agencies, departments, and crown corporations (CEAA 1992). Under the CEAA (1992), an environmental assessment is to be carried out with respect to proposed projects where:

- the federal authority is the proponent;
- the authority provides financial assistance;
- the project is carried out on federal lands; or
- in circumstances where a federal permit, license, or approval is required.

'Project' is broadly defined to include construction, operation, modification, decommissioning or other undertaking. The new Act provides regulations for the development of exclusionary and mandatory study lists for different types of projects, which is an improvement to the self-assessment principle of EARP, since the decision to undertake an assessment is no longer left to the discretion of the "initiating department".

Under the Act, the Federal Environmental Assessment Review Office (FEARO) was replaced by the Canadian Environmental Assessment Agency. The Minister of the

Environment continues to be responsible for the Agency, but it is separate from Environment Canada.

The new process is essentially a three-stage process consisting of:

- an initial screening;
- mediation or assessment by a review panel and preparation of a report; and
- a follow-up program.

(CEAA 1992)

If it is determined during the initial screening that the project is not likely to cause significant adverse environmental effects, or the effects are mitigable, the project may proceed subject to the implementation of mitigation measures (CEAA 1992). As under EARP, 'environmental effects' not only include biophysical effects, but also the social, health, economic and cultural issues arising out of the environmental effects of the project (FEARO 1987). This definition of effects, however, is somewhat limited. Theoretically, social and economic effects, such as employment or stress on local services, would not be covered under the process unless they arise as a consequence of the environmental effects of the project.

In addition to the CEAA, each of Canada's provinces and territories also has its own legislation. In Newfoundland, the process is governed by the Environmental Assessment Act (1980), which is implemented through the Environmental Assessment Regulations (1984). Under those regulations, a project or "undertaking" is defined as "any enterprise, activity, project, structure, work, policy, proposal, plan or program that may have a significant environmental impact" (Newfoundland 1980). The regulations cover all aspects of the environment, including bio-physical, social, economic and cultural factors and their interrelationships.

Certain projects, like the Hibernia development, may fall within both federal and provincial jurisdiction, in which case, they may be subjected to a joint review process. Increasingly this has been the case. Therefore, to eliminate duplication of effort and to streamline the impact assessment process, there has been an attempt to develop 'single-window' guidelines for impact assessment across Canada (Meredith 1995). The Canadian Council of Ministers of Environment is currently working to establish a Canada-wide environmental management framework to ensure that EA is consistent and better harmonized across all levels of government (Gershberg and Connelly 1997).

2.1.4 STRENGTHS AND LIMITATIONS OF EA IN CANADA

Canada's reformed EA process has a number of advantages over the old system, the first of which is the provision for the design and implementation of follow-up

monitoring programs. EARP had also contained provisions for follow-up procedures. however, there was no rigorous process in place to ensure that such procedures occurred (Storey 1995). Up until now, most assessment processes have ended after impact statements have been reviewed and project decisions made (Armour 1988; Beanlands and Duinker 1983; Storey 1995). There has been little attention given to the post-approval stage of projects. Regardless of how well an environmental assessment is conducted, few impacts can be predicted with certainty. Monitoring can be used to verify and improve the accuracy of impact predictions and to detect unanticipated problems that occur after a project is approved and underway.

Without a formal monitoring and audit process, the potential to learn from a particular project is minimized. A follow-up program enables the examination of the accuracy of predictions and the adequacy of mitigative measures identified during the assessment. The information can ultimately lead to improvements in the assessment process and its ability to predict and address the implications of future projects.

A limitation of the CEAA follow-up program is its focus on the environmental implications of a project. The CEAA defines a follow-up program as one that verifies the accuracy of the environmental assessment of a project, and determines the effectiveness of any measures taken to mitigate any adverse environmental effects (Canada 1992; as cited in Storey 1995). As Storey (1995) indicates, many megaprojects are undertaken

with economic development objectives in mind, in which case measures designed to create or enhance economic and social benefits are as important as those designed to avoid or ameliorate adverse environmental effects. CEAA's definition of follow-up, in effect ignores any social and economic consequences of a project which are not directly related to changes in the physical environment. Consequently, under the current definition, the contribution that follow-up programs can make to EA's ability to predict and address impacts of projects on the human environment, is limited.

Another key element of the new EA process, which is intended to address past concerns for effective public involvement, is a participant funding program to help individuals and organizations involve themselves in the public review of projects (Delicaet 1995). Before CEAA, the outcomes of public involvement in Canada had been uncertain. The public review process was frequently found to be inadequate, since public groups often lacked the knowledge to adequately critique a document or the financial resources to retain an expert to do so on their behalf (FEARO 1987; Needham and Swerdfager 1989; Schiboula and Byer 1991). It was expected that a participant funding program would increase the effectiveness of public reviews by increasing the quality of participation. However, without a firm understanding of the proposed project and its implications, or of the decision-making process, the extent to which the public is capable of participating remains ambiguous (Jeffery 1991).

To be effective, the participant funding program should be accompanied by an appropriate public education program. Public education has been largely ignored in the Canadian EA process other than being employed to meet regulatory requirements (Sinclair and Diduck 1995). Education, however, is an integral component of public involvement which involves the use of information dissemination and general instruction to create an awareness of the EA process and related issues (Praxis 1988).

Because of the general absence of follow-up programs, relatively little has been learned about previous projects that has been usefully transmitted to other communities that may be affected by similar projects. Proponents also may not have the experience of previous projects and their impacts that would allow them to educate the public. And, if they are aware of potential impacts, they may not always be willing to share their knowledge in order to maintain a favourable image in host communities. Different areas will respond differently to similar projects, but without some knowledge of impacts that have occurred elsewhere, or what management initiatives may have shaped the impacts, the local public is left to make their own judgements about how a proposed project might affect their communities. Feedback from follow-up programs, therefore, is necessary for effective public involvement programs and for improving the overall efficiency of future assessments and the management of impacts associated with large-scale development.

2.2 Large-scale Development in Rural Communities

Perhaps the largest subset of social science literature to accompany the evolution of SIA is that which has focused on the consequences of large-scale development in rural areas. Early studies tended to view these developments as generally beneficial; creating economic growth and expanded municipal services for the communities in which they were located (Murdock and Leistritz 1979; Summers *et al.* 1976). Up to 1975, research reflected an economic development perspective, emphasizing the benefits of economic growth while largely ignoring or discounting reports of social disruption (Freudenburg and Jones 1991). For rural areas faced with declining populations and few opportunities for economic growth, hosting a large-scale project provided a possible means for regional development.

The most obvious positive impacts to be associated with large-scale development were economic benefits such as employment opportunities and local business spin-offs (Murdock and Leistritz 1979). Local unemployed, underemployed and young people, had the opportunity to become employed directly on the project, or indirectly through opportunities created in the area as a result of spin-offs.

Toward the end of the 1970s, however, many communities where these projects were located, began to report experiences of social and psychological dislocation, dissatisfaction, and the destruction of community social structure (Krannich and Greider

1984). One of the earliest studies of this “social disruption” was of the building of the Alaskan pipeline and its effects on the city of Fairbanks. When the pipeline was planned, it was generally assumed that Fairbanks would receive many benefits during its construction. However, the influx of outsiders who came seeking pipeline jobs drastically affected the city’s ability to provide vital services such as housing, transportation, telephones and electricity. Increases in prostitution and street fighting, decreasing family cohesiveness, and inflation caused by the high wages of pipeline workers contributed to Fairbanks’ problems (Dixon 1978).

Communities hosting large-scale energy projects in the Western United States were also reporting negative effects. Some of the more prevalent impacts described were increased crime (Freudenburg 1982; Krannich *et al.* 1989), increased cost of living, alcohol and drug abuse, loss of sense of community (Cortese and Jones 1977), decrease in the density of acquaintanceship (Freudenburg 1986), and the disruption of social ties and increased stress (Finsterbusch 1982).

This “social disruption” was attributed mainly to the rapid population growth which often accompanied large-scale projects. A rapid increase in population was said to result in added stress on already overtaxed social services and facilities (Murdock and Leistritz 1979), which in turn contributed to increased community social problems, such as crime and alcohol and drug abuse (Albrecht 1978; Finsterbusch 1982; Krannich *et al.* 1989) and

resulted in a general decrease in community satisfaction and quality of life for rural communities hosting these developments. The social disruption theory and its supporting research, in turn, were criticized for overstating the negative aspects of community growth.

The conclusion that has since emerged is that the impacts have neither been as positive as claimed at the outset by project proponents nor as negative as claimed by opponents (Freudenburg 1986; Murdock *et al.* 1986). In most cases, for instance, local employment benefits expected to accompany such projects have been significantly overstated. Local employment often fell below initial expectations because local workers did not have the necessary skill levels to work on these projects, and the jobs that were created often did not go to unemployed or underemployed persons from local communities, but rather went to “newcomers” who moved to the area solely to work on the project (Summers *et al.* 1976). Also contrary to expectations, these projects did not increase the likelihood that young people would stay in their home communities (Seyfrit 1986; Summers *et al.* 1976).

Just as the anticipated benefits of development may not have been as substantial as hoped, there is also increasing evidence that the negative impacts were not as severe as sometimes anticipated. Social surveys in affected communities have repeatedly failed to find evidence of the pronounced negative effects believed to accompany large-scale development (England and Albrecht 1984; Freudenburg 1986; Krannich and Greider

1984; Webb *et al.* 1980). In particular, there was little evidence of a disruption in social integration or perceptions of personal well-being, which in turn are said to contribute to problems such as increased crime and alcohol and drug abuse (England and Albrecht 1984; Krannich and Greider 1984).

Overall, the empirical evidence that has accumulated to date suggests that, while disruptions may occur under certain circumstances, considerable uncertainty remains concerning which specific aspects of community life tend to be affected and to what degree (England and Albrecht 1984; Krannich and Greider 1984; Krannich *et al.* 1989). The numerous boomtown studies carried out during the 1970s and 80s have, in fact, generated as many questions as they have answered.

The primary limitation of most of these boomtown studies has been their reliance on empirical analyses of impacts actually experienced after development has proceeded. Studies that were undertaken only after large influxes of in-migrants had arrived, attributed increases in social disruption indicators solely to the population influx caused by the project, ignoring other factors obscured by the timing of the data collection (Brown *et al.* 1989). Research was concerned mainly with describing the impacts that occurred rather than understanding the determinants of those impacts. It was evident throughout the literature that there was considerable variation in change occurring in communities

affected by projects of similar magnitude, yet there was little effort toward determining what particular community or project characteristics might lead to particular impacts.

Much of the uncertainty surrounding the impacts of large-scale development has recently been attributed to the limited time frame observed in most empirical analyses (Brown *et al.* 1989; Freudenburg and Gramling 1990). More recently, researchers studying the impact of large-scale development have begun to consider the extent or duration of impacts in time and space (Burdge and Vanclay 1995; Interorganizational Committee 1995)

2.2.1 TEMPORAL DIMENSIONS OF SOCIO-ECONOMIC IMPACT

Large-scale development projects are characterized as having a series of steps or stages throughout their lifetime, beginning with initial planning, then construction, operation and finally, abandonment. The particular stage in a project is an important factor in determining impacts. Not all socio-economic impacts will occur at each stage and some impacts may be more pronounced at one stage than at another. The main stages in any large-scale development are:

Pre-development/Planning - all activity that takes place from the time a project is conceived to the point when construction begins. This includes project design, revision, and the decision to go ahead;

Construction/Development - begins when a decision is made to proceed. This stage continues from site-preparation through to construction completion;

Operation - after construction is complete and the development is fully operational;

Wind-down/Abandonment - activity associated with the project begins to wind down and eventually ends;

Post-project - decommissioning of project facilities and clean-up and rehabilitation of the work site.

(Burdge 1987)

Previous literature on the socio-economic effects of large-scale development have offered static analyses that provide only “snapshot” images of community impacts at single points in time, focusing attention almost exclusively on the construction/development phase, that period during which facilities are constructed, infrastructure developed and support services established. This is largely due to the nature of the environmental assessment process. As a component of the broader EIA process, the objective of SIA has been to predict the potential impacts of a proposed project, once that project is physically under way. The assessment process and, consequently, research, has generally ignored the impacts that occur **before** a project takes place and those that occur **after** activity winds

down. In terms of the physical environment, it is true that no impacts occur until a project leads to alterations of physical or biological conditions. In the human environment, however, impacts can begin as soon as there are rumours about a project and can continue long after the project has ended (Gramling and Freudenburg 1991).

Research has begun to show that impacts can vary considerably throughout the life of a project (Brown *et al.* 1989; Burdge 1987) and that SIA is a useful tool, not only for predicting or describing impacts, but in assessing those impacts as they are occurring (Gramling and Freudenburg 1991). Freudenburg and Gramling (1990) contend that by not adopting a more longitudinal approach, social impact research fails to document the full range of impacts actually taking place.

Recent work on the impacts of large-scale resource industries in the western United States and Canada has begun to show how significant an oversight this has been. Even in communities facing some of the most dramatic construction-development phase impacts, Brown *et al.* (1989) found certain impacts occurring **before** the onset of development to be significantly greater than those taking place during the construction-development phase. In particular, disruption of community satisfaction, attachment, and social integration emerged more strongly prior to the actual growth period, suggesting that there are important anticipatory impacts of an expected boom. In fact, communities can experience significant impacts even when a proposed project never actually takes place.

In the case of a proposed uranium refinery and conversion facility in Northern Saskatchewan, the facility became so controversial that it created a significant rift within the community. In fact, many of the potential social impacts that were identified throughout the panel hearings occurred, despite the fact that the refinery never did go ahead (Boulden 1990).

It is difficult to obtain an accurate view of the impacts associated with development because of the barriers to the implementation of adequate longitudinal research designs (Brown *et al.* 1989; Krannich *et al.* 1989). Most research methodologies lack pre-impact measures, thus preventing any longitudinal analysis of change over time (Burdge and Vanclay 1995).

2.2.1.1 Opportunity-Threat Concept

Even before any physical disturbances occur, a community experiences what Freudenburg and Gramling (1990) call “opportunity-threat” impacts. These are not merely expected impacts but actual impacts that would not have taken place but for the announcement of a proposed development. Often in response to the earliest information about a project, speculators buy property, interest groups form or redirect their energies, stresses mount, and a variety of other community effects take place. The absence of a longitudinal perspective in most socio-economic impact research has meant that these early effects are often ignored.

Freudenburg and Gramling's (1990) pre-development or "opportunity-threat" phase is characterized by social and economic impacts which are derived from local communities' efforts to identify, define and respond to both the ongoing and anticipated implications of development. Depending on their perspective, these impacts may be seen as opportunities to those who see the changes as positive and/or threats to those who see them as negative. The emergent definitions of opportunities and threats are shaped by a community's prior experience and present interests (Fuchs and Cake 1986; Gramling and Freudenburg 1991; Schiff 1971).

Potential opportunities include employment and training, exposure to new ideas, and extending the range and level of resources available to the community. Potential threats include increased crime, increased cost of living, alcohol and drug abuse, increased traffic and land use conflicts. In the case of economic systems, the opportunities rather than the threats often receive most of the early attention, particularly opportunities for employment and industrial and commercial spin-offs. As emphasized earlier, however, these opportunities are often overestimated.

The greatest social impact of many projects is the stress that results from the uncertainty associated with it (Burdge and Vanclay 1995). Those living near a major development are often uncertain about the impacts that project may have. Although findings suggest that local employment opportunities often prove to be less numerous and/or less attractive

than commonly expected and negative effects, such as increased crime, are also overstated, the fact that communities may be aware that those impacts have accompanied other projects, affects their definition process (Gramling and Freudenburg 1991). The process of defining the anticipated impacts of development, therefore, is capable of leading to impacts in and of itself (Gramling and Freudenburg 1991). Community residents respond to what they perceive will happen because they often lack the knowledge to effectively judge potential effects. By maximizing community involvement early in the decision-making process, not just by consultation, but through education and direct participation in planning, the uncertainty surrounding the project is greatly reduced (Burdge and Vanclay 1995).

2.2.2 SPATIAL DISTRIBUTION OF IMPACTS

It is generally agreed that the effects of large-scale development not only vary over time but over space as well (Interorganizational Committee 1995; Maclaren 1987; Mitchell 1989). There is, however, an absence of literature which depicts spatial variation in impacts. A few studies allude to the spatial distribution of the benefits and negative effects associated with large-scale development, but rarely is the concept explored (Burdge and Vanclay 1995; Gramling and Freudenburg 1990; Interorganizational Committee 1995).

A related concept portrayed in social science literature relates to the NIMBY (Not In My Back Yard) Syndrome. The syndrome often relates to cases involving the siting of hazardous waste facilities. The benefits of the activities that produce massive quantities of waste are numerous and broadly distributed but nobody wants the waste from these activities to end up in their “backyard”. By placing the responsibility of disposal and treatment on those communities that host large facilities, most of the economic, political, environmental and public health burden imposed by the hazardous waste will be concentrated on a small number of communities, while the advantages of cheap energy production and employment opportunities are more widespread (Rabe 1994). Hazardous waste facilities and many other large-scale developments have these characteristics in common.

In the EIA process, decision makers interpret and evaluate the proposals of outside agencies who plan to undertake a project, which may promote change in local communities (Finsterbusch 1985). Change of any kind brings social costs to some and social benefits to others. If the benefits outweigh the costs, the decision generally is to go ahead. However, the social costs (increased crime, increased cost of living, negative impacts on community satisfaction and quality of life, etc.) are almost always borne at the community or local level, while economic benefits (employment, access to resources, tax revenues, etc.) tend to be justified on a regional or national level (Burdge 1987). When either social costs or benefits to local communities are measured against regional and

national economic goals, social concerns generally finish a distant second (Burdge 1987:150).

To comply with EIA regulations, the proponent must ensure that appropriate mitigative measures are in place to avoid or minimize any potential negative effects, but beyond that, the onus has been on local communities to adapt to the project. Increasingly, there has been more emphasis placed on maximizing the benefits to local communities in return for hosting these developments. As with potential negative effects, potential benefits could be identified through public involvement early in the planning process.

2.3 Attitudes and Perceptions in SIA

Most authors of methodologies for social impact assessment identify a central role for attitudes and perceptions in understanding community response to large-scale development (Albrecht and Thompson 1988; Branch *et al.* 1984; Freudenburg 1986). The impacts associated with development have little meaning without the subjective interpretation of those impacts by community residents. As Branch *et al.* (1984:116) note:

The attitudes community residents have toward development and the specific actions being proposed as well as their perceptions of community well-being are important determinants of the social effects of a proposed action. Attitudes not only affect actions, they also influence perceptions and the interpretation of actual events.

2.3.1 ATTITUDES AND PERCEPTIONS DEFINED

A problem hindering the comparability and verification of findings in attitude and perception studies has been the wide range of definitions of the terms 'attitude' and 'perception' (Mitchell 1989). Attitude implies an association between some person, thing, event, idea or situation (an attitude object) and an evaluation of it (good or bad, better or worse) (Fazio 1986). Most social psychologists agree that attitudes are made up of affective, cognitive and behavioral components (Eagly and Chaiken 1993; Eiser and van der Pligt 1988; Schiff 1971).

The affective component consists of the feelings, moods and emotions that people experience in relation to attitude objects, such as feelings of liking or disliking. People who evaluate an attitude object favourably are likely to experience positive affective reactions in conjunction with it.

The cognitive component consists of a person's beliefs about an attitude object, which are understood to be an association between the attitude object and its various attributes (Fishbein and Ajzen 1975). In general, people who evaluate an attitude object favourably are likely to associate it with positive attributes and unlikely to associate it with negative attributes (Eagly and Chaiken 1993). It is important to note that the beliefs held by the individual need not, in fact, be true. What is important is that he/she believes them to be true (Schiff 1971).

The behavioural component has to do with the people's actions in relation to the attitude object. The individual organizes the affective and cognitive components into a system which predisposes him/her to respond to the object in a manner consistent with that system (Schiff 1971). Behavioural responses can also be regarded as encompassing *intentions* to act that are not necessarily expressed in overt behaviour; positive evaluations are related to holding supportive intentions in relation to attitude objects, and negative evaluations to holding non-supportive intentions (Eagly and Chaiken 1993).

Less complex than attitude, a perception can be defined as:

the impression one has of a social stimulus or set of stimuli, as that impression is modified by the perceiver's past experience in general, his *or her* previous experience with the same or similar stimuli and the individual's state at the moment he *or she* is viewing the stimulus of interest (Schiff 1971:7).

Since an individual's perception is governed by past experiences plus present outlook conditioned by values, moods, social circumstances and expectations, two people viewing the same stimulus may 'see' different images.

Attitudes and perceptions are interrelated. A perception may represent one of the affective or cognitive factors which play a role in attitude formation, while attitudes, in turn, can influence perceptions of objects or events.

2.3.2 ROLE OF ATTITUDES AND PERCEPTIONS IN SIA

In SIA, attitudes and perceptions can be used to forecast how a community will respond to a proposed development and the changes that are expected to accompany it. Perceptions of community satisfaction and personal well-being are needed to evaluate the meaning of those changes for community residents. Initial community response has been found to be at least as important as project characteristics in determining what impact a development will have (Branch *et al.* 1984; Fuchs and Cake 1986).

Attitudes are community characteristics that both influence and are influenced by the forces of social and economic change (Albrecht and Thompson 1988:74). As independent or intervening variables in socio-economic impact research, attitudes become the critical link between structural change occurring in a community and individual response to the project (Albrecht and Thompson 1988). A positive attitude toward change will result in a positive response toward a project, while a negative attitude will produce a negative response and, in turn, result in a negative impact on the community.

As dependent variables in SIA, there is evidence that attitudes are changed, often drastically, as a project progresses (Albrecht and Thompson 1988). Numerous rural communities in the western United States supported energy projects because of anticipated employment and public fiscal benefits, however, the actual experience of hosting such a development has often resulted in significant changes in attitudes. As stated earlier, local residents often do not receive the anticipated economic benefits because they lack the necessary skills and resources, and predicted negative effects of a project are often overstated.

In order to assess changes over time, therefore, it is necessary to include attitude and perception information at each stage in the impact assessment process (Burdge 1987; Maclaren 1987). At the project planning stage, information about attitudes and perceptions are collected to identify likely areas of impact. After submission of the EIS,

publicity surrounding the release of the EIS and the imminence of the formal approval process may have an effect on the general public's attitudes toward or concerns about the project. Subsequent survey information can provide important supplementary information to the proponent and the officials involved in approving the project (Maclaren 1987).

After project approval and through construction, the focus of public concerns and questions changes from issues about project alternatives to those concerning the nature of the project that is under construction. Attitude and perception information collected throughout this period could help identify unanticipated concerns and allow project decision makers to respond appropriately. Ideally, the collection of information should continue until after the project is completed and extend through to the decommissioning and clean-up stages.

Through the administration of social surveys, changes in attitudes and perceptions, and resulting changes in community response, can be assessed throughout the life of a project, allowing for more flexible and effective impact mitigation and the optimization of community benefits that may arise.

This research attempts to demonstrate some of the limitations of the Canadian environmental assessment process, and the importance of addressing those limitations, by

examining the experiences of the communities that hosted the Hibernia construction project. The results will contribute to longitudinal socio-economic research and the understanding of the spatial variation in impacts, and, in doing so, will contribute to the broader understanding of the determinants of the social and economic effects of large-scale development. A better understanding of community response to large-scale development, in turn, has significant implications for environmental assessment in Canada, particularly, the social impact component of the assessment process and the importance of follow-up monitoring programs in managing the social and economic impacts of development.

CHAPTER 3

STUDY BACKGROUND

3.1 Hibernia Development Project

The Hibernia oilfield was discovered off the coast of Newfoundland in 1979, after nearly two decades of offshore exploration activity. The oilfield is located on the Grand Banks of Newfoundland, approximately 315 kilometres east southeast of St. John's. Based on estimated recoverable reserves of 525 million barrels, the projected life of the field was 18 years (HMDC 1991). Current reserves are estimated at 666 million barrels (CNOBP 1998:16), a figure which may well be revised upwards with further production experience.

3.1.1 HIBERNIA AND EIA

In 1980, Mobil Oil Canada, Ltd, the field operator, began the Hibernia environmental impact assessment process with the referral of the project to the Federal Environmental Review Office (FEARO) for review. The assessment activities that followed included data collection, analysis, report preparation and public information programming (Storey 1991).

In May 1985, Mobil submitted an Environmental Impact Statement (EIS) to a joint Federal-Provincial panel that had been put in place to review the project. The basis for a joint panel came with the signing of the Atlantic Accord, a memorandum of agreement between the two levels of government on offshore oil and gas resource management and revenue sharing. The Hibernia Environmental Assessment Panel's (HEAP) mandate was to identify measures which would maximize economic benefits and minimize environmental hazards and social disruption associated with the project (HEAP 1985).

Submission of the EIS marked the beginning of a five-month public review process. Copies of the EIS document or its summary were sent directly to people on the Panel's mailing list, as well as being placed in libraries, government offices and other accessible locations (HEAP 1985). Following the distribution of documentation, public information sessions were held at 10 different centres throughout the province.

Mobil's EIS described potential impacts and associated impact areas for two possible development scenarios for the Hibernia project - a Floating Production System and a Fixed Production System (Mobil Oil Canada Ltd. 1985a). Throughout the EIA process it was assumed that specific activities would take place at specific sites. In the case of a fixed production system (Figure 2), the construction of the concrete gravity-based structure (GBS) was to take place at Adam's Head, near Come By Chance, Placentia Bay (Figure 3).

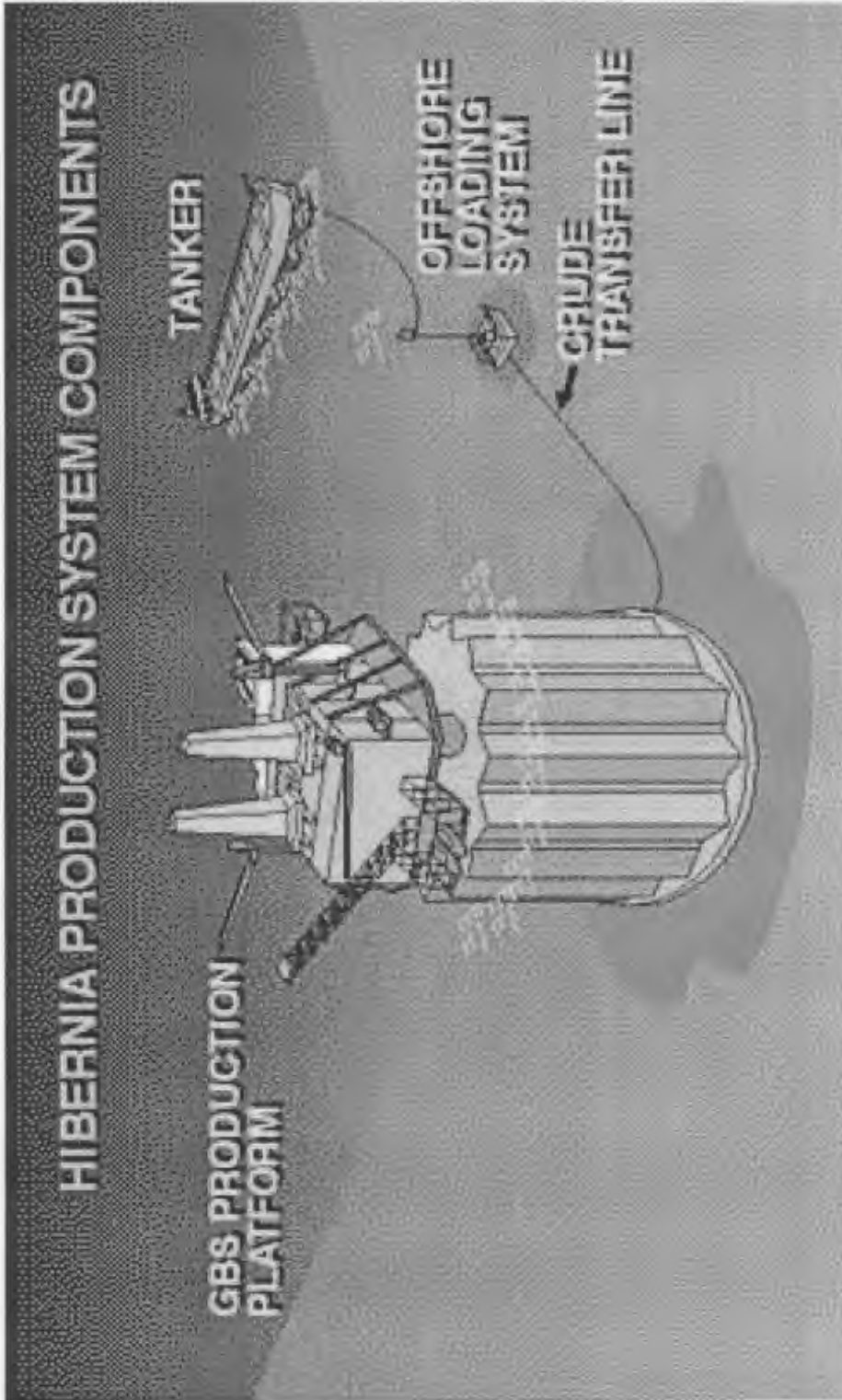


Figure 2: Hibernia Production System

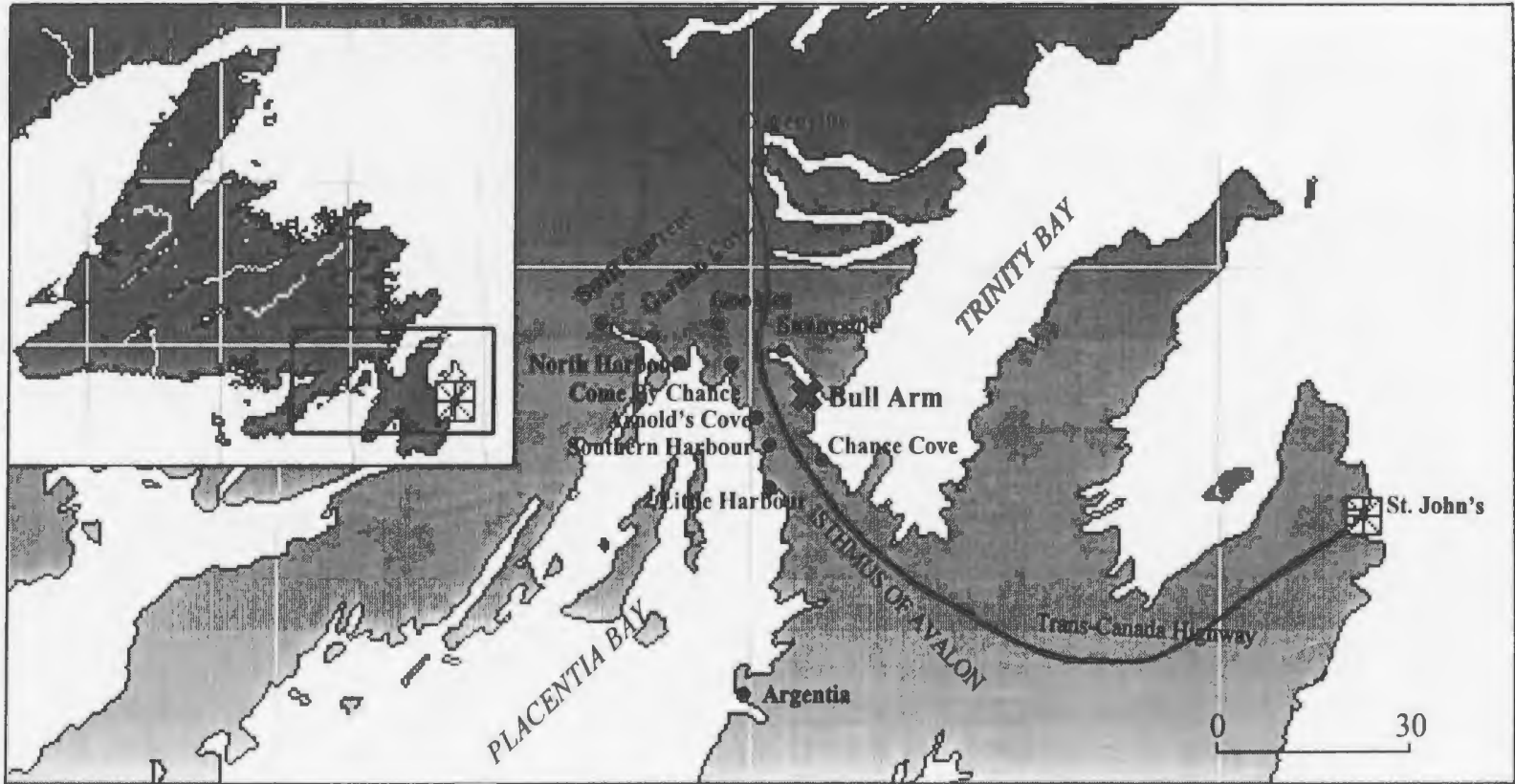


Figure 3: Map of Study Area

For both the fixed and floating production systems, the assembly and outfitting of the topside deck was to take place at Argentia, and St. John's was to be the supply base and project management centre. The sites were identified on the basis of preliminary information and logistical considerations but it was expected that the final selection would be done later after a more detailed analysis (Mobil Oil Canada, Ltd. 1985a). Based on the proposed location of project activities, Mobil identified potential impacts for the St. John's, Come By Chance, and Argentia areas.

At the end of July 1985 and prior to the public hearings, it was announced that the preferred mode of production for the Hibernia field was a fixed gravity-based structure (GBS) rather than a floating platform (Mobil Oil Canada Ltd. 1985b). Other than being well-suited to the Grand Banks' harsh environment, a fixed production system was particularly attractive to the Government of Newfoundland and Labrador because it meant that more of the work would be done in the province and, therefore, offered greater opportunities for local employment. With this announcement, much of the attention in the review process shifted to the construction stage impacts. It was at this point that oil-related interest groups began to form in the Come By Chance impact area to respond to local concerns about the GBS construction. A discussion of local planning efforts related to the project follows in section 3.1.2.

Public consultation concluded in October with a series of public hearings held in centres on the Avalon Peninsula which were most likely to be affected by project activities.

During the process, the Panel received more than 150 written and oral submissions from groups having an interest in the project or expertise to offer (HEAP 1985). With respect to socio-economic issues, participants wanted the assurance of maximum employment and industrial benefits for Newfoundland and Labrador and expressed concern for possible negative effects on housing and added pressure on already inadequate community infrastructure and social services. Communities in the immediate vicinity of the proposed construction site, in particular, were concerned about details of the project's proposed work camp and effects of the construction on the local fishery.

Upon completion of its review process, the Panel submitted its report to the federal and provincial governments in December 1985, recommending that the project should proceed and under what conditions. The Hibernia Development Project was subsequently granted conditional approval to proceed by the federal and provincial governments in June 1986; those conditions being specified by the Canada-Newfoundland Offshore Petroleum Board (CNOPB 1986).

The next four years were marked by ongoing financial negotiations between government and the Hibernia proponent, a group of companies led by Mobil Oil Canada, Ltd. The four companies involved in the Hibernia project had, in the meantime, formed the

Hibernia Management and Development Company Ltd. (HMDC) to oversee the engineering, construction and production phases of the project (HMDC 1991). The companies were Mobil, Gulf Canada Resources Limited, Petro-Canada, and Chevron Canada Resources. Finally, in September 1990, a binding agreement between the proponent and government was signed, which signified the official start to the project. Under the agreement, the project would be funded by the four HMDC members and the Federal government, although the Federal government was not to play a role in the project's operation. Two major contracts for the GBS and the Topsides were announced later in September of that year and site preparations for the GBS construction began shortly afterwards in October 1990.

From the discovery of the Hibernia oilfield to the official start of the construction project, approximately 11 years had passed. During that time there were a number of significant changes in the project plan which resulted in changes in the concerns expressed by the public. Some of the concerns expressed between 1980 and 1982, were no longer problematic by the time Mobil submitted its EIS in 1985. For example, original plans to use an underwater pipeline to transfer oil from the production platform to an onshore tanker loading facility, generated concerns about interference with the fishery and the possibility of oil spills from pipe breaks. These concerns largely disappeared with the subsequent decision to use an offshore loading system instead. Conversely, issues such

as the social and economic implications of the development had gained importance over the same period as the focus shifted to the impacts of the GBS construction.

The delays experienced in getting the project underway after it had been conditionally approved in 1986, not only allowed the proponent to further refine the design and management plan for the development, but also allowed government, industry and the general public to better understand the potential impacts of the onshore activities related to offshore oil and gas development. Consequently, some of the concerns originally expressed in the EIS and throughout the review process, were no longer relevant or were less important once the project started. Those changes in attitudes could only be determined by continuing the public involvement process beyond the start of the project and by implementing an effective monitoring program.

3.1.2 PUBLIC INVOLVEMENT IN PLANNING FOR HIBERNIA

When Mobil Oil was undertaking its environmental impact assessment, there was no regional body in place to specifically represent the interests of communities likely to be affected by the Hibernia project. Most community consultation related to the construction aspect of the project was done with the Trinity-Placentia Development Association (TPDA) in Arnold's Cove.

The TPDA, at the time, was one of 53 regional development associations throughout Newfoundland and Labrador whose mandate was primarily to identify the needs and resources within its jurisdiction with a view to the promotion of long-term economic development. The Development Association's member communities in 1985 were Arnold's Cove, Come By Chance, Sunnyside, Goobies, North Harbour, Garden Cove and Swift Current, which immediately surround what was then the *proposed* GBS construction site at Adam's Head.

So as not to allow oil-related activities to overshadow other development association initiatives, the TPDA formed a subcommittee called the Concrete Platform Community Advisory Committee (CPCAC). The committee consisted of members representing each of the development association's communities and acted as a liaison between local residents, the Hibernia proponent and government. One of the first tasks of the CPCAC was to present a written brief to HEAP on behalf of the TPDA and its constituents (TPDA 1985a). The brief outlined local concerns about population increases, employment and training, housing, medical services and safety, education, land and resource use, transportation and local business.

A number of local and regional groups were subsequently formed which were involved, to varying degrees, in the Hibernia planning process. While each group had its own mandate, geographic area of interest and concerns about the project, all had a common

interest in maximizing the social and economic benefits of GBS construction activity while minimizing any adverse social and environmental consequences of the project (Canning 1990).

Soon after the CPCAC was established, the Oil Impact Committee (OIC) was formed in early 1986 to represent the six regional development associations in the Placentia and Trinity Bay regions closest to the proposed construction site. By the fall of 1987, OIC was dissolved and its members formally incorporated into the Rural Oil Impact Monitoring Agency (ROIMA). ROIMA was made up of representative from each of the development associations involved in OIC as well as representatives from the CPCAC and a local fisheries group.

A divisive issue among ROIMA members was the definition of what was meant by “local”. For the proponent and government, local meant Newfoundland and Labrador, for the larger regional bodies, it meant the area extending from Clarenville and Shoal Harbour in the west to Placentia in the east. But for the CPCAC, local meant the seven member communities of the TPDA. Because of their close proximity to the construction site, they felt that their communities would likely bear the brunt of any negative consequences that accompanied the development and, therefore, should be given preferential treatment with respect to any benefits, especially employment opportunities.

In addition to ROIMA, other groups such as the Hibernia Impact Area Municipalities Association and the Come By Chance Area Business Association were formed in anticipation of direct benefits and spin-offs from the development. Along with the explosion of local interest groups, came increasing concern that there was no collective voice representing the interests of all individuals, organizations and communities in the immediate impact area.

This was addressed when the GBS construction project finally got underway, with the formation of an “umbrella” organization, the Bull Arm Area Coordinating Committee (BAACC), a product of evolution from all previous oil-related interest groups in the region. The committee was made up of a more localized group of representatives from ROIMA (the three development associations closest to the site), CPCAC, and local groups representing the interests of the fishing industry, business people and municipalities (Canning 1990). Funded by the provincial government, the BAACC was expected to bring forward the concerns of the various groups to government and the proponent and to help disseminate information about the project to its constituency through its Information Centre and Community Liaison Officer. For the remainder of the project, BAACC became the community-level contact for government and industry and to varying degrees was involved in the management of project-related impacts through ongoing consultation with GBS and Topsides contractors.

3.1.3 HIBERNIA CONSTRUCTION PHASE

Construction of the Hibernia GBS was one of the largest construction projects in North America. When the Hibernia Agreement was signed in 1990, the project was expected to take approximately five years to complete, from the beginning of site preparation to the mating of the GBS and Topsides, and to employ more than 2500 workers at the peak period of construction (HMDC 1991). The mating of the GBS and Topsides and tow-out to the oilfield was to take place in 1995 and production expected to commence late in 1996 (HMDC 1991).

In the four years leading up to the signing of the Hibernia Agreement continued review of the project resulted in a number of changes in project design and planning that subsequently affected how the project would proceed and what impact it would have on the local area. One significant occurrence during that period was the decision to relocate the GBS construction site from Placentia Bay to Trinity Bay. In its EIS, Mobil identified Adam's Head, Placentia Bay as the site for the GBS construction and Argientia for the assembly of the Topsides with the mating of the two structures taking place at Bread and Cheese Islands, a deep water site between the two locations. Re-evaluation of the relative merits of the Adam's Head site and other sites in Trinity Bay in 1989 resulted in the relocation of the construction of the GBS, assembly of the completed Topsides, and mating of the Topsides with the GBS to Great Mosquito Cove, in Bull Arm, Trinity Bay (Figure 3).

The decision to relocate the site diminished concerns about the local fishery expressed throughout the public consultation and review process. Much of the concern was related to exclusion zones around the construction sites which would prevent access to particularly lucrative fishing grounds in Placentia Bay. The planned exclusion zones around the construction site at Adam's Head and, especially, the deepwater site at Bread and Cheese Islands, had the potential to disrupt the fishing activities of most crews in communities around the head of Placentia Bay. The move to Trinity Bay meant that only fishing enterprises from Sunnyside would be affected, which made it easier for HMDC to develop a compensation program¹. Concerns about conflicts between the oil and fishing industries and the need for compensation, however, were virtually eliminated in 1992 with the collapse of Newfoundland's cod fishery. The collapse resulted in a moratorium on Northern cod and subsequent moratoria or quota reductions on other species.

A second decision affecting the impact on local communities was the decision by the provincial government to designate the GBS construction a "special project" under the Labour Relations Act, making it a union project. The primary purpose of the labour agreement was to ensure there would be no interruptions in work during construction. The design of the concrete structure required periods of continuous pouring of cement

¹ The compensation program developed by HMDC proved to be very effective and, in fact, became the model for a similar plan developed for the Prince Edward Island - New Brunswick Confederation Bridge project.

and the proponent and its contractors could not risk any form of employee dispute. The existence of a labour agreement was also expected to curb the potential influx of prospective jobs hunters during the early stages of the development. While in the long term it served to virtually eliminate industrial disputes and speculative migration, employment for local people was reduced by the decision to use a union workforce. In its EIS and before the “special project” decision, Mobil had predicted that labour for the GBS construction would peak at 2,265, of which 500-1000 (22-44%) could likely come from within commuting distance of the construction site (Mobil Oil Canada, Ltd. 1985a). At the end of June 1994 there were in fact 3,665 workers at the Bull Arm site, of which only 303 (8%) were local area residents (CRS Ltd. 1995).

An unplanned event which occurred toward the end of the site-preparation phase and which subsequently resulted in revisions to the construction schedule, was the decision by Gulf Canada Resources Limited to withdraw from the venture. Construction activities were put on hold until another investor, or investors, could be found. Unable to find an investor to assume Gulf’s full share of the development, some of the remaining partners took an extra share, the federal government took a share and the remainder was taken up by a new development partner, Murphy Atlantic Offshore Oil Company. Project activities then resumed and actual construction of the GBS began in September 1992.

To offset the delays associated with Gulf's pull-out as well as modifications and technical refinements resulting from continuing review of the project design, the project was "fast tracked", which means that employment was increased beyond previously expected levels (CRS Ltd. 1995). At the peak construction period during the fall of 1995 there were approximately 5,700 workers employed on site. While the on-site work camp was expected to accommodate up to 1,500 workers, the work camp was subsequently built to accommodate a maximum of 3,000 workers which was intended to eliminate the need for any but supervisory staff on long-term assignments to move into the area (CRS Ltd. 1995). To accommodate the extra workers another 400 units were added to the work camp. With the work camp at full capacity, additional accommodations had to be found off-site which resulted in some short-term pressure on the local rental market and increased rental costs (CRS Ltd. 1995).

Under the revised schedule, the final pouring of concrete to complete the GBS took place in July 1996. Final installation of equipment in the GBS and assembly of the Topsides components were completed in November of that year, and the two structures mated in March 1997. The completed platform was towed out to the Grand Banks in May and outfitted for production. First oil from the Hibernia field was produced November 17, 1997.

Although HEAP recognized monitoring as an important part of managing the impacts associated with the Hibernia project, there was little importance placed on this aspect of the EIA process during the construction project, particularly with respect to socio-economic monitoring. It was intended that the Government of Newfoundland and Labrador oversee socio-economic monitoring through the Hibernia Construction Sites Environmental Management Committee (HCSEMC) (CRS Ltd. 1995). HCSEMC's role was to provide a forum for public input and consultation throughout the Hibernia Development Project and, in an effort to keep the public informed, it published and circulated a quarterly report of socio-economic indicators related to the project. Unfortunately the data collected through the monitoring system failed to demonstrate whether the predicted socio-economic impacts actually occurred, whether they occurred with the magnitude expected, or whether the planned mitigation or enhancement measures were ever implemented or, if they were, if they were effective (CRS Ltd. 1995). This thesis attempts to address some of those uncertainties by analysing local residents' interpretations of the events surrounding the project from the site-preparation phase to the final year of the construction.

3.14 HIBERNIA ATTITUDE AND PERCEPTION STUDIES

In fulfilment of federal environmental assessment guidelines, the proponent carried out a number of attitude and perception studies at various points throughout the planning stages of the Hibernia Development Project (MacLaren Plansearch 1981; Research Associates 1984; Omnifacts 1990). Those studies looked primarily at provincial attitudes toward the overall development, and none looked at the attitudes and perceptions in communities directly affected by the concrete platform construction in particular.

One study that did examine communities in the immediate impact area was conducted on behalf of the Trinity-Placentia Development Association (TPDA) during the spring of 1985 (see Figure 4). The study involved a household survey of attitudes and perceptions toward what was then a *proposed* oil-related construction project. The research was carried out in conjunction with the Newfoundland and Labrador Petroleum Directorate (NLPD), an agency established by the Provincial government to oversee matters related to offshore oil development. The TPDA/NLPD survey was designed by Fuchs and Cake, who were employed by the Petroleum Directorate at that time, and provided the basis for their 1986 report. The results of the survey provided a baseline of information on attitudes toward and perceptions of oil development impacts, together with information on community satisfaction and quality of life during the pre-development period, prior to any final decisions regarding the development.

HIBERNIA EVENTS		ATTITUDE SURVEYS	
Field Discovery	1979		
EIA Commences	1980		
	1981		MacLaren Plansearch
	1984		Research Associates
EIS Submission and Review	1985		TPDA/NLPD Survey (Phase I)
Site Preparation Begins	1990		Omnifacts
GBS Construction Begins	1992		Site-preparation Survey (Phase II)
Platform Towout	1996		Wind-down Survey (Phase III)

Figure 4: Chronology of Hibernia-related Events and Attitude Surveys

The TPDA/NLPD survey was intended as part of a longitudinal study of offshore oil development and community change over the life of the Hibernia Development Project. However, there were no formal commitments or arrangements made by Fuchs and Cake or the Provincial government to continue this work. This thesis research, therefore, represents the continuation of the original research initiative. It involved similar surveys near the end of the site-preparation and wind-down phases of the GBS construction project, the results of which allowed the analysis of changes in attitudes and perceptions over time, as well as the analysis of spatial variation in attitudes and perceptions among communities within the immediate impact area. The surveys are described in greater detail in Chapter 4.

3.2 Study Area

Bull Arm, the site of the GBS construction and Topsides assembly, is located in Trinity Bay approximately 150 kilometres west of St John's. The area included in this study encompasses the 10 communities along the Isthmus of Avalon nearest the Bull Arm construction site. The communities include the original seven member communities of the TPDA, which participated in the 1985 survey, two communities which joined the TPDA since 1985, and the community of Chance Cove, because of location relative to the Bull Arm site. The area extends from Little Harbour East in Placentia Bay to Swift Current, near the northern end of the Burin Peninsula (see Figure 3).

3.2.1 DEVELOPMENT HISTORY

The Isthmus of Avalon is no stranger to change. During the 1960s, the area was a prime destination for many Placentia Bay communities targeted for the Newfoundland Household Resettlement Program. Under this program, remote Newfoundland communities were evacuated and each household offered compensation to relocate to a designated fishery or other type growth centre (Courtney 1973). Resettlement was initiated so that the province could be more economically serviced by the federal and provincial governments. As a result of the program some Isthmus communities more than doubled their population from 1965 to 1970.

Prior to the offshore oil industry, the area had experienced community changes associated with hosting other large-scale developments. The most important of these developments for local communities was the Come By Chance Oil Refinery. The refinery is located at the head of Placentia Bay, almost directly across the Trans-Canada Highway from the Bull Arm site and, therefore, affects much the same area as the GBS construction.

Construction of the refinery began in 1970 and at its peak in 1972, the project employed 1500-1700 workers on-site (Felt and Carter 1980). The refinery began operations in 1974 but after just two years, went bankrupt in 1976 and shutdown.

With the start of the oil refinery project, local communities again saw a rapid increase in population. Many of those moving to the area were former residents of local

communities who had previously left in search of work and were returning home with the hope of finding jobs at the refinery. Characteristic of construction projects and the oil refining industry, in general, most of those seeking work were male.

At the time of bankruptcy, the refinery was the largest employer in the region with most of its operations workforce coming from local communities. According to Felt and Carter (1980), approximately 80% of employees lived within a 50 mile radius of the refinery. There were not only a significant number of jobs, but the jobs were also higher paying than most of those that local people had previously experienced, with refinery employees reported an average increase in income of 55% over their previous job (Felt and Carter 1980). While the refinery was in operation, some local employers were losing workers because of the higher wages being offered by the refinery.

With the closure of the refinery in 1976, its skilled workers were forced to leave the area again or find lower paying jobs locally. But that was not to be the end of the refinery. After a decade-long closure, the refinery reopened in 1986 under new ownership and remained in operation throughout the life of the GBS construction and since.

At the same time as the construction and operation of the Come By Chance Oil Refinery, other people from the study area commuted to nearby Long Harbour to work at the Electric Reduction Company of Canada (ERCO) phosphorus plant which had begun

operation a few years earlier in 1968. The experience there was much the same as at the refinery. Of the 400 people employed during the operations phase, approximately 92% were Newfoundlanders and almost all were male (Legge 1983). J.R. Smallwood, Premier of Newfoundland at the time, had stipulated to ERCO owners, Albright and Wilson Limited, that at least 90% of those employed at the plant be Newfoundlanders. Not only were the vast majority of workers Newfoundlanders, but 80% of those from Newfoundland were hired from the three communities nearest to the plant; Long Harbour, Dunville and Norman's Cove. Again similar to the refinery, 75% of the workers reported incomes higher than their previous job. When the plant closed in 1989 after just over 20 years in operation, it had a devastating effect on the economy of Long Harbour and other nearby communities.

Alongside these large industrial developments, most people in Isthmus communities were earning their living, as they had traditionally, by working in the fishing industry, both catching and processing fish (approximately 44% of respondents to the 1985 survey indicated that they worked in those areas). Before the commencement of the GBS construction and the reopening of the Come By Chance refinery, the National Sea Products fish plant at Arnold's Cove was the largest employer in the region. Unlike the refinery and the phosphorous plant, many of those employed in fish processing were female. The ground fishery has since suffered a major setback with the collapse of the northern cod stocks and the subsequent (1992) moratorium on cod and other groundfish

species in Newfoundland waters. In spite of the moratorium, the fish plant continues to do well by processing imported fish and local species other than cod. The downturn in the fishery has, however, seriously affected those who made their living catching fish. The cod moratorium remained in effect throughout the GBS construction phase and, with some minor modifications, is still in effect today.

The experience that the Isthmus of Avalon had in previous decades was undoubtedly to their advantage in dealing with community change associated with the Hibernia construction project. Their experience with hosting previous developments had generally been seen as positive (Felt and Carter 1980; Legge 1983). When the refinery and ERCO were under construction or in operation, local people received high-paying skilled employment and, in fact, most jobs went to people who lived within commuting distance. Even people who had previously been forced to move away to find work were able to return. Both developments were expected to be a permanent part of the local economy and, therefore, had a devastating effect on local communities when they ended. The oil refinery has since reopened and now employs 400-500 workers on a regular basis. Unlike the two previous developments, it was generally understood that the Hibernia construction project was short term. While the site could potentially be used for similar projects in the future, the concrete platform construction itself was expected to take approximately five years to complete. Consequently, local communities were interested in getting as much benefit from it as possible during the short time it was underway.

CHAPTER 4

RESEARCH METHODS

4.1 Introduction

This research used a questionnaire survey method to assess changing community response to the Hibernia construction project through a comparative study of attitudes and perceptions in the communities immediately surrounding the Bull Arm construction site. The study uses a repeated cross-section research design which provides a longitudinal perspective in the study of large-scale industrial development in rural areas. While it does not represent a true longitudinal research design, which would involve a survey of the same sample at different points in time, the purpose of the research is to investigate patterns and sequences of change and can, therefore, be classified as longitudinal (Chadwick *et al.* 1984; Grosf and Sardy 1985). Cross-sectional studies are the designs employed most in survey research because they ensure that the study sample is representative of the population at that point in time (Nachmias and Nachmias 1981).

The research re-examines the hypothesis put forward by Fuchs and Cake (1986), which stated that:

Hypothesis 1: A positive experience with previous large-scale development, a positive attitude toward future large-scale development and positive perceptions of political efficacy, all contribute to a positive response to a given project or activity.

It was further hypothesised that:

Hypothesis 2: Considering the strength of attitudes expressed during the pre-development phase, attitudes toward the project will have remained favourable up to and including site preparation and through construction to the completion of the platform.

Hypothesis 3: As residents gain more experience with the construction project, perceptions of positive and negative consequences of the development will become more focussed, as reflected in, for example, a reduction in the number of key concerns and a clearer sense of priorities.

Hypothesis 4: Community perceptions of positive and negative consequences of the development will vary according to distance from the Bull Arm construction site, that is, communities adjacent to the site will be more likely to perceive **both** positive and negative effects than communities further away.

To test these hypotheses, the study uses the TPDA/NLPD pre-development survey of attitudes and perceptions as the baseline for two surveys at later stages in the construction project. The TPDA/NLPD survey, considered as Phase I of the study, was undertaken in 1985 during the planning stages for the Hibernia Development Project. The survey

captured community attitudes and perceptions prior to any final decisions about the mode of production to be used and, consequently, which specific areas would be affected by related construction. Phase II was conducted in 1992, approximately 18 months into the site-preparation phase and just prior to the beginning of construction proper. Phase III was carried out in 1996, just one month before the final concrete was poured to complete the GBS construction.

4.2 Phase I: Pre-development

The pre-development survey was carried out from March to July of 1985 in the seven member communities of the TPDA, those being Swift Current, Garden Cove, North Harbour, Goobies, Sunnyside, Come by Chance and Arnold's Cove. The research instrument used in Phase I consisted of two complementary questionnaires. The first questionnaire dealt primarily with household composition, labour force information, and knowledge of and suggestions for regional development activities. The second, supplementary questionnaire dealt with attitudes toward and perceptions of oil-related activities proposed for the Placentia Bay area. It consisted of open-ended questions pertaining to perceived benefits and negative effects of oil-related development. Likert-type scales of community satisfaction and quality of life, as well as respondent demographic characteristics. Combined, the questionnaires included 36 questions, some of which contained several parts for a total of 120 variables (see Appendix A).

4.2.1 SURVEY ADMINISTRATION AND RESPONSE RATE

Both questionnaires were administered to the female or male head-of-household in an in-person interview, which required an average of one hour to complete. A self-administered version of the supplementary questionnaire was left behind to be completed by other adults (19 years and older) who were then residing in the household. The self-administered version was to be returned to the Development Association using an accompanying postage-paid envelope.

Surveys were conducted with the assistance of three interviewers who worked out of the TPDA office at Arnold's Cove. Interviews were carried out primarily from Monday to Friday between the hours of 9:00 a.m. and 5:00 p.m. with call-backs taking place during evenings and weekends when required.

It was intended that the survey be a census of the TPDA region, with interviews attempted at all households in the seven communities. An estimate from local post offices indicated that there were just over 950 households in the seven communities. Interviewers made up to three attempts to contact each household. Of the 952 households in the region, 537 interviews were completed for a response rate of 57.4%.

4.2.2 CODING, DATA ENTRY AND ANALYSIS

The completed questionnaires were coded by the interviewers using a coding scheme developed by personnel at the NLPD (Appendix B). Closed-ended questions were coded according to values preassigned to each possible response. Codes for open-ended questions were based on survey responses in the community of North Harbour, the first community surveyed. New codes were created as coding proceeded to accommodate common responses that did not fit under existing codes. The data were then entered on computer using SPSS/PC software and analyzed by personnel at the Petroleum Directorate.

4.2.3 SECONDARY ANALYSIS OF SURVEY DATA

Only those survey results pertaining to attitudes and perceptions about oil-development and indicators of community satisfaction and quality of life were selected for use in this study. Information taken from the 1985 data included perceptions of benefits and negative effects associated with proposed oil-related activities; respondent interest in oil-related employment; five-point Likert ratings of 14 quality of life indicators and 13 social and economic issues; other issues related to community satisfaction and quality of life, such as community likes and dislikes and experience with crime; and respondent socio-demographic characteristics, including age, sex, education level, employment status, usual occupation and length of residency. Data on a total of 65 variables were compiled.

For the purpose of this research, only those surveys completed in person with the female or male head of household are included in the analysis as those respondents are most comparable to the samples targeted in Phases II and III.

4.3 Phase II: Site-Preparation

The Phase II survey was administered in April 1992, during the site-preparation phase of the GBS construction project. The survey was again conducted within the communities of the TPDA to coincide with the baseline established in 1985. Since that time, however, the development association has extended its boundaries to include the communities of Southern Harbour and Little Harbour East. Although not a member of the TPDA and not a part of the 1985 study, Chance Cove was also included in Phase II because of its proximity to the Bull Arm site (see Figure 3). The study area covered in Phase II, therefore, consists of 10 communities compared to seven in Phase I. Survey data from both study phases are compiled in a manner that permits separate analysis of the original study area.

The survey instrument used in Phase II was a revised version of the one used in 1985 with some questions modified and others added to reflect changes in the project. Indicators used in the previous study were maintained to ensure maximum comparability of results. In addition to the questions carried over from 1985, the survey included a number of open and closed-ended questions about individual and community experiences with the

Hibernia project up to 1992; level of knowledge and sources of information about the project; and involvement and/or familiarity with oil-related community groups (Appendix C). The questionnaire included 29 questions, some of which included several parts or allowed multiple responses. In total, there were 93 variables, including the 65 variables from the initial survey.

4.3.1 SAMPLE SELECTION

While the most commonly selected accuracy level for a study of this type is a 95% confidence level and 5% confidence interval requiring a sample size of 384 (Sheskin 1985), time and resources available for this survey did not permit the number of interviews required to achieve such a result. Sample size was, instead, calculated for a confidence level of 95% with a 10% confidence interval which required 96 completed questionnaires (Sheskin 1985:33).

Because the adult population of the 10 communities was estimated to be 3000, the required sample size can be adjusted accordingly as follows:

$$n^* = \frac{n}{1+(n/N)} = \frac{96}{1.03} = 93$$

(Sheskin 1985:34)

Resources allowed for a final sample of 130 surveys. The higher sample meant a slightly more accurate confidence interval of between eight and nine per cent.

The sample was selected from the current telephone directory using a systematic random sampling method. Based on the response rate to the 1985 survey, a sufficient number of potential respondents were identified to complete 130 surveys with an expected response rate of 60%. The sample of telephone numbers was chosen proportionally from each of the ten communities according to that community's population.

4.3.2 SURVEY ADMINISTRATION AND RESPONSE RATE

While the survey was administered in person in Phase I, in Phase II the survey was administered by telephone. Some of the advantages of using a telephone survey, which were important in this case, are that it will usually yield a high response rate, the amount of time needed to complete one is relatively short, it is often much easier to find interviewers because transportation is not required and, because of lower labour costs, it is significantly less expensive than the face-to-face interview (Dillman 1978; Sheskin 1985). The main advantage to conducting a face-to-face interview is that the interview can be significantly longer, but the survey length was not an issue in this study. There should be no difference in the quality of data obtained from a telephone survey as opposed to a face-to-face interview. In fact, some of the bias associated with interviewer appearance are eliminated by using the telephone.

The survey was administered by the current researcher and three interviewers from within the study area. The interviewers were experienced in conducting telephone surveys and had worked with the researcher on a previous research project. They were trained in a half-day session involving an overview of the research project and questionnaire and several practice interviews while being observed by the researcher. Before beginning the actual survey process, the research instrument was pre-tested by having each interviewer complete ten interviews from the selected sample. Interviews were completed in an average time of 12-15 minutes. Respondents had not asked for clarification on any of the questions and responses were consistent with the intended meaning of each of the questions. No changes to the research instrument resulted from the pre-test, therefore, the pre-test responses were included in the final results.

The survey was directed toward adults (18 years and older) with male and female respondents selected alternately from consecutive households. To ensure the random selection of respondents from within each household, interviewers were instructed to ask for the adult with the next birthday. Interviewers were required to keep a tally of their calls and their results on a predesigned form to ensure alternate selection of male and female respondents and accuracy of call-backs. Interviews were conducted until the desired 130 surveys were completed, allowing for a maximum of three attempts to reach each potential respondent. Calls were made between 6:00 and 9:00 p.m., Monday to Thursday with some call-backs taking place during the day and on weekends when

required. On average, seven questionnaires were completed for every ten calls made for a response rate of approximately 70%.

4.3.4 CODING, DATA ENTRY AND ANALYSIS

The completed surveys were coded by the researcher and entered on computer using SPSS/PC+ software for analysis. Closed-ended questions were coded according to values preassigned to possible responses (Appendix D). Codes for open-ended questions were created according to responses to a sample of completed questionnaires, with new codes created as required.

4.4 Phase III: Construction Wind-Down

Phase III of the study was carried out in May and June of 1996, just as construction activities were beginning to wind down. This phase was conducted in the same ten communities included in Phase II and used the same research instrument, except for the addition of five questions related to public involvement and the project's decision-making process (Appendix E). There were 31 questions in all, resulting in a total of 95 variables. With the exception of the variable resulting from the five added questions, the original 65 variables are comparable across all three research phases and 25 for Phases II and III.

4.4.1 SAMPLE SELECTION

Resources available during Phase III allowed for a larger sample of community residents to be surveyed than in the previous phase. For a 95% level of confidence with a confidence interval of 5%, the required sample size is 384 (Sheskin 1985:34). Based on the size of the adult population of the 10 communities, the sample size was adjusted as follows:

$$n^* = \frac{n}{1+(n/N)} = \frac{384}{1.13} = 340$$

(Sheskin 1985:34)

As in Phase II, the sample was selected from the current telephone directory using a systematic random sampling method. The sample of telephone numbers was chosen proportionally from each of the 10 communities according to that community's population. Based on the 70% response rate achieved in 1992, enough numbers were generated in the sample to obtain 350 responses.

4.4.2 SURVEY ADMINISTRATION AND RESPONSE RATE

The survey was again administered by telephone. The interviews were conducted by a four interviewers from their homes in the St. John's area. Prospective interviewers responded to an employment advertisement at Memorial University's Student

Employment Centre and the successful applicants selected after an employment interview process. Training involved an evening session of questionnaire review and practice interviews under the observation of the researcher.

The research instrument was pre-tested by having each interviewer complete ten interviews from the selected sample, after which the questionnaire was evaluated for clarity and the validity of questions. Interviews were completed in an average time of 12-15 minutes. No changes to the research instrument resulted from the pre-test, therefore, responses from those interviews were included in the final results.

The survey was again directed toward adults (18 years and older) with male and female respondents selected alternately from consecutive households. Asking to speak to the adult male or female with the next birthday ensured the random selection of respondents from within each household. Calls were made between 6:00 and 9:00 p.m., Monday to Thursday with some call-backs taking place during the day and on weekends when required, allowing for a maximum of three call-back for each completed interview. As in Phase II, interviewers were required to keep a log of the calls they had made. The interviewers were successful in completing 339 questionnaires with a response rate of approximately 68% for those contacted.

4.4.3 DATA ENTRY AND ANALYSIS

The completed surveys were coded by the researcher and one of the interviewers. The coding scheme was the same as the one used in 1992 with some modifications made for the additional questions. New codes were created for open-ended responses that had not been given in 1992. The data were then entered on computer using SPSS for Windows for the analysis.

4.5 Data Analysis

Before beginning the analysis, the data were checked for validity by running frequencies of the answers to each question and checking for unlikely or impossible responses. The data were then cleaned of errors for the subsequent analysis. Next, certain variables were re-coded into groups or categories better suited to the objectives of the analysis. In particular, the variable 'age' was re-coded into categories matching those used by Statistics Canada and 'length of residence' was grouped to correspond with stages in the construction project.

The 14 community satisfaction and quality of life statements also required re-coding to reflect positive and negative polarity in the wording of statements. The statements were rated on a five-point Likert-type scale ranging from strongly agree to strongly disagree. For positively worded statements (e.g. This is a good place to raise children), the scale values ranged from strongly agree (5) to strongly disagree (1). The values for responses

were reversed for negatively worded statements (e.g. I seldom visit with my neighbours). that is, strongly disagree was assigned a value of '5' and strongly agree a value of '1'.

To begin the analysis, frequencies and percentages of responses to each survey instrument were generated. A mean value for each of the attitude scales was also calculated.

4.5.1 ANALYSIS OF ATTITUDES AND PERCEPTIONS OVER TIME

To examine changes in attitudes and perceptions over time, responses for each research phase were compared by merging the three data files and adding a variable denoting the year-of-study.

For open-ended questions, such as perceived benefits and negative effects, responses were compiled in table format according to the type and frequency for each research phase. Similarities and differences were then described in relation to the stated hypotheses.

Cross tabulations by year-of-study were generated for each of the nominal variables and chi-square (χ^2) analysis used to determine if there were significant differences across research phases. Differences were considered significant at $p=.05$.

For the 5-point response scales used for the 13 problem issues and the 14 community satisfaction and quality of life statements, analysis of variance (ANOVA) was used to determine if there were significant differences in mean responses between research phases. Means were considered to be significantly different at $p=.05$.

4.5.2 ANALYSIS OF SPATIAL VARIATION IN ATTITUDES AND PERCEPTIONS

To examine spatial variation in attitudes and perceptions, the analysis was similar to the analysis of change over time, using subregions of the study area as the independent variable instead of year-of-study. To facilitate the analysis, the communities were divided into three subregions of the larger study area according to their location relative to the Bull Arm construction site: Northwest, Adjacent and Southeast. The Northwest subregion includes the communities of Swift Current, Garden Cove, North Harbour and Goobies; the Adjacent subregion includes Sunnyside, Come by Chance and Arnold's Cove; and the Southeast subregion includes Southern Harbour, Little Harbour and Chance Cove (Figure 3). As with the analysis of attitudes and perceptions over time, differences were considered significant at $p=.05$ for both χ^2 and ANOVA.

4.5.3 REPRESENTATIVENESS OF SAMPLE

To examine whether each sample was representative of the study area's actual population, select demographic characteristics were compared with census data collected nearest the time of each survey; 1985 respondents were compared to the 1986 census and

those surveyed in 1992 to the 1991 census information. The 1996 census results were not available at the time of the analysis, therefore, characteristics of the 1996 sample were also compared with 1991 census information.

In 1985 there were no particular criteria used in selecting respondents as it was intended to do a complete census of the area. Chi-square analysis indicated statistically significant differences between the 1985 respondents and the 1986 census data which might be attributed to the way the survey was administered. There was, for example, a significant difference ($p < .01$) between the distribution of male and female respondents (Table 4.1). Since the questionnaire was directed toward either the male or female head of each household, the interviewers simply interviewed the person who was at home during day-time working hours or the person most willing to answer the questionnaire. In most cases this turned out to be the female head-of-household. Differences in the distribution across age groups were also significantly different ($p < .01$). The difference was most apparent in the 20-24 age group since these people would more likely be under-represented when targeting the head-of-household. By excluding the 20-24 age group from the analysis, there was no significant difference in the distribution across age groups between the 1985 survey respondents and the 1986 census data.

Also, when the seven communities included in the 1985 survey were divided into Adjacent and Northwest subregions, the Adjacent subregion was slightly under-

Table 4.1**Age/Sex Characteristics (1985)**

Age Group ¹	1985 Survey Respondents			1986 Census ²		
	Male (Row%) (Column%)	Female (Row%) (Column%)	Row Total	Male (Row%) (Column%)	Female (Row%) (Column%)	Row Total
20 - 24	11 (37.9) (5.4)	18 (62.1) (5.6)	29 (5.5)	105 (50.0) (11.6)	105 (50.0) (11.4)	210 (11.5)
25 - 34	36 (33.6) (17.6)	71 (66.4) (22.2)	107 (20.4)	190 (45.8) (21.0)	225 (54.2) (24.3)	415 (22.7)
35 - 44	47 (34.8) (22.9)	88 (65.2) (27.5)	135 (25.7)	215 (51.2) (23.7)	205 (48.8) (22.2)	420 (22.9)
45 - 54	27 (32.9) (13.2)	55 (67.1) (17.2)	82 (15.6)	140 (52.8) (15.5)	125 (47.2) (13.5)	265 (14.5)
55 - 64	33 (45.8) (16.1)	39 (54.2) (12.2)	72 (13.7)	115 (50.0) (12.7)	115 (50.0) (12.4)	230 (12.6)
65+	51 (51.0) (24.9)	49 (49.9) (15.3)	100 (19.0)	140 (48.3) (15.5)	150 (51.7) (16.2)	290 (15.8)
Column Total	205 (39.0)	320 (61.0)	525	905 (49.5)	925 (50.5)	1830

¹Survey respondents less than 20 year of age were omitted from the table and the chi-square analysis because there is no comparable group in the age categories used by Statistics Canada.

²Totals for Arnold's Cove, Come by Chance, Sunnyside and Division 2, Subdivision K, the Census areas which best represent the communities included in the study area. Age and sex characteristics are not available for Goobies since it is an unincorporated community.

represented. The interviews in those communities were conducted last and as it was then into the summer months, it became increasingly difficult to find people at home. There was no attempt to accommodate the under-representation because of the overall similarity in responses from the entire study area. Weighting the responses from the Adjacent region would have made no significant difference to the final results.

Samples used in the 1992 and 1996 surveys were purposely chosen to be proportionate to the population of each community in the study area and a method was used to target an even distribution of male and female respondents. For the 1992 data there were no significant differences in the distribution of respondents across subregions or sexes when compared to the 1991 census data (Table 4.2). There was, however, a significant difference in the distribution of age groups ($p < .05$). Similar to the 1985 data, the 20-24 year age group was slightly under-represented in the sample.

In 1996, there were significant differences ($p < .01$) in the age and sex characteristics of the sample and the 1991 census data. As shown in Table 4.3, respondents under the age of 35 years were significantly under-represented while those 55 and older were over-represented.

Most important to this analysis was that the different subregions of the study area were proportionally represented. While ideally, the samples would be representative of the

Table 4.2**Age/Sex Characteristics (1992)**

Age Group ¹	1992 Survey Respondents			1991 Census ²		
	Male (Row%) (Column%)	Female (Row%) (Column%)	Row Total	Male (Row%) (Column%)	Female (Row%) (Column%)	Row Total
20 - 24	4 (57.1) (6.9)	3 (42.9) (4.3)	7 (5.5)	165 (48.5) (12.2)	175 (51.5) (13.5)	340 (12.8)
25 - 34	11 (45.8) (19.0)	13 (54.2) (18.8)	24 (18.9)	300 (51.7) (22.1)	280 (48.3) (21.6)	580 (21.9)
35 - 44	15 (36.6) (25.9)	26 (63.4) (37.7)	41 (32.3)	310 (49.2) (22.8)	320 (50.8) (24.7)	630 (23.8)
45 - 54	13 (50.0) (22.4)	13 (50.0) (18.8)	26 (20.5)	230 (52.3) (17.0)	210 (47.7) (16.2)	440 (16.6)
55 - 64	5 (45.5) (8.6)	6 (54.5) (8.7)	11 (8.7)	155 (53.4) (11.4)	135 (46.6) (10.4)	290 (10.9)
65+	8 (50.0) (13.8)	8 (50.0) (11.6)	16 (12.6)	195 (52.7) (14.4)	175 (47.3) (13.5)	370 (14.0)
Column Total	58 (45.7)	69 (54.3)	127	1355 (51.1)	1295 (48.9)	2650

¹Survey respondents less than 20 years old are omitted from the table and the chi-square analysis because there is no comparable age category used by Statistics Canada.

²Totals for Arnold's Cove, Come by Chance, Sunnyside, Southern Harbour, Chance Cove and Division 2, Subdivision K, the Census areas which best represent the communities included in the study area. Age and sex characteristics are not available for Goobies and Little Harbour since they are unincorporated communities.

Table 4.3**Age/Sex Characteristics (1996)**

Age Group ¹	1996 Survey Respondents			1991 Census ²		
	Male (Row%) (Column%)	Female (Row%) (Column%)	Row Total	Male (Row%) (Column%)	Female (Row%) (Column%)	Row Total
20 - 24	1 (10.0) (0.8)	9 (90.0) (4.3)	10 (2.9)	165 (48.5) (12.2)	175 (51.5) (13.5)	340 (12.8)
25 - 34	8 (40.0) (6.2)	12 (60.0) (5.7)	20 (5.9)	300 (51.7) (22.1)	280 (48.3) (21.6)	580 (21.9)
35 - 44	22 (40.0) (16.9)	33 (60.0) (15.8)	55 (16.2)	310 (49.2) (22.8)	320 (50.8) (24.7)	630 (23.8)
45 - 54	33 (40.2) (25.4)	49 (59.8) (23.4)	82 (24.2)	230 (52.3) (17.0)	210 (47.7) (16.2)	440 (16.6)
55 - 64	33 (41.8) (25.4)	46 (58.2) (22.0)	79 (23.3)	155 (53.4) (11.4)	135 (46.6) (10.4)	290 (10.9)
65+	33 (35.9) (25.4)	59 (64.1) (28.2)	92 (27.1)	195 (52.7) (14.4)	175 (47.3) (13.5)	370 (14.0)
Column Total	130 (38.3)	209 (61.7)	339	1355 (51.1)	1295 (48.9)	2650

¹Survey respondents less than 20 years of age are omitted from the table and the chi-square analysis because there is no comparable age category used by Statistics Canada.

²Totals for Arnold's Cove, Come by Chance, Sunnyside, Southern Harbour, Chance Cove and Division 2, Subdivision K, the Census areas which best represent the communities included in the study area. Age and sex characteristics are not available for Goobies and Little Harbour since they are unincorporated communities.

larger population on most other demographic characteristics, the discussion in the following chapter will show respondents attitudes to be so strongly skewed in one direction that any differences in sample characteristics would have had little effect on final results.

4.5.4 LIMITATIONS

The most obvious limitation of this study is the difference in sample selection method and sample size for each of the research phases. In size, the 1985 data set was sufficient to perform statistical tests but because the sample was not selected randomly, its representativeness is questionable, particularly because of the considerable over-representation of female respondents. However, statistical tests fail to reveal any significant differences in responses between males and females.

The 1992 sample was smaller than the other two because of the limited time and resources available to implement the study. The small sample size limited the level of analysis that could be undertaken, but again, the sample was demonstrated to be representative of the study area's population as a whole.

The strength of this study, that possibly outweighs any limitation, is the availability of a pre-development baseline of attitudes and perceptions against which community change

could be measured. Rarely does such an opportunity exist in studies of large-scale development and their effects on rural communities.

CHAPTER 5

PERCEPTIONS AND ATTITUDES TOWARD THE HIBERNIA CONSTRUCTION PROJECT

This chapter outlines the results from the three research phases and, in doing so, describes changes in community attitudes and perceptions that have occurred at different stages in the Hibernia construction project. The results of the TPDA/NLPD household survey in 1985, provided a description of pre-development characteristics of the study area and a baseline of attitudes and perceptions against which future changes associated with the project could be measured. The results of the two subsequent surveys, conducted in 1992 and 1996, show the experiences that community residents have had with the project up to the site-preparation and wind-down phases, respectively, and any changes in attitudes and perceptions that have occurred as a result of those experiences.

The research results are presented in three parts:

Phase I: Pre-development, describes the context in which the Hibernia construction project has taken place. Specifically, it describes the attitudes of community residents toward the proposed oil-related construction project; the potential for local employment

on the project; and provides a baseline indicators of community satisfaction and quality of life.

Phase II: Site-preparation, describes the experiences of community residents up to the end of the site-preparation phase and their expectations for the remainder of the project. In particular, this section describes community awareness and public involvement relative to the construction project; compares pre-development expectations with community experiences up to the site-preparation phase; describes expectations beyond the site-preparation phase; and outlines any changes in community satisfaction and quality of life.

Phase III: Wind-down, is a summary of how local communities have adapted to large-scale development as the Hibernia construction project nears the end. The section describes changes in attitudes and perceptions throughout the life of the construction project, including changes in community awareness; differences in expectations and experiences at various stages in the development; expectations about life after the project has ended; and overall effects the project has had on local community satisfaction and quality of life.

5.1 Phase I: Pre-Development

“When weighing the costs and benefits associated with this development, we have a tendency to allow the negative impacts to be overshadowed by the prospect of local people gaining employment from it.”

Trinity-Placentia Development Association (1985)

Because most socio-economic impact studies fail to document community characteristics and quality of life before a project begins, it is difficult to determine how much change to attribute to the project, rather than to the normal course of events. In the case of the Hibernia construction project, the TPDA/NLPD survey provided a description of pre-development characteristics of surrounding communities, which allowed subsequent research to examine community change over time.

The 1985 survey was conducted prior to any final decisions regarding the Hibernia development. When Mobil Oil Canada Limited released its environmental impact statement in May of 1985, it had not been determined whether the production platform would be a fixed or floating system and, therefore, whether or not platform construction would directly affect the area along the Isthmus of Avalon. Survey respondents were, therefore, speculating on potential community impacts in the event that a fixed platform was chosen as the preferred mode of production. At the time, a fixed production system meant that the construction site would be at Adam’s Head, the deepwater site would be at Bread and Cheese Islands, and that the aggregate would likely come from Piper’s Hole

River, near Swift Current (see Figure 3). Even under the fixed platform scenario, there had been no decisions about the location of workforce accommodations or whether the project would be carried out by union or non-union workers.

As described in Chapter 4, the 1985 study area included only the communities which make up the Adjacent and Northwest regions of the larger study area. The survey results included local attitudes toward and perceptions of the proposed oil-related construction project, indicators of community satisfaction and quality of life, and socio-demographic characteristics of respondents.

5.1.1 ATTITUDES TOWARD LARGE-SCALE DEVELOPMENT

In developing the TPDA/NLPD study, Fuchs and Cake (1986) hypothesized that a positive experience with *previous* large-scale development, a positive attitude toward *future* large-scale development and positive perceptions of political efficacy by surrounding communities, would contribute to a positive response to the Hibernia construction project. As described earlier, communities in the area have had considerable experience with large-scale development prior to the Hibernia project with the Come By Chance Oil Refinery and the ERCO phosphorus plant in Long Harbour. Although both of these developments had devastating effects when they closed, while they were in operation they brought considerable economic benefit to their respective areas. The greatest benefit was local employment; both during their construction and operations

phases, both projects offered hundreds of high paying jobs, the vast majority of which went to residents of nearby communities.

Related to the second component of the Fuchs and Cake (1986) hypothesis, respondents to the 1985 survey were overwhelmingly positive toward the possibility of hosting the proposed oil-related construction project. While less than one-quarter (23%) felt that they were adequately informed to judge the possible advantages and disadvantages that might be associated with the project, they were more than twice as likely to expect that there would be benefits as they were to expect negative effects (Table 5.1). There was, however, a little more uncertainty about whether or not the project would be accompanied by negative effects; approximately 17% indicated that they did not know if there were potential negative effects associated with the project, compared to only 5% who were unsure about benefits.

The positive attitude can likely be attributed to the economic benefits expected to accompany the project, or “opportunities”, as they are referred to by Freudenburg and Gramling (1990). As shown in Table 5.2, respondents were particularly interested in the anticipated employment associated with such a large development. As discussed later in Section 5.1.3, unemployment was among the biggest problems experienced in the study area at the time of the initial survey and was one of the things many respondents disliked most about living there. Given their experience with the oil refinery and phosphorus

Table 5.1

**ANY POTENTIAL BENEFITS AND NEGATIVE EFFECTS
OF AN OIL-RELATED CONSTRUCTION PROJECT? (1985)**

Expectation	Yes (%)	No (%)	Don't know (%)
Potential benefits	83.2	11.7	5.1
Potential negative effects	36.7	46.3	16.9

Table 5.2

**POTENTIAL BENEFITS OF THE PROPOSED
OIL-RELATED CONSTRUCTION PROJECT (1985)**

Benefit	%
Employment in general	88.7
More municipal services	43.0
More people moving in	33.9
Employment for self/family	22.9
Economic benefits	3.8
Business opportunities	2.7
Community growth/development	1.8
Other	3.2

plant, respondents presumably might expect that the majority of jobs associated with this project would go to residents of local communities.

Some respondents saw employment for themselves or members of their immediate family as a potential benefit of the construction project. In a supplementary question, approximately 38% indicated that they would personally be interested in working on the project. Although, as shown later, few were even minimally qualified for project employment.

Other than employment opportunities, respondents felt that the project would result in improvements to community services and infrastructure, such as water and sewer facilities. This perception was based, to a large extent, on the experiences of the Town of Come By Chance when the oil refinery was first in operation. To accommodate refinery personnel, a fully serviced housing subdivision was built within the community's boundaries. It was expected that the water and sewer services available to the subdivision would be extended to the remainder of the community but the refinery closed before the expansion had taken place.

One-third of survey respondents expected that more people would move into their communities as a result of the project. While in most "boomtown" studies population growth is said to be one of the greatest contributing factors to the social problems

accompanying large-scale development, in this area it was seen as a potential benefit. To many rural areas experiencing population decline, new people moving in, is often equated with community growth and development.

As shown in Table 5.3, those who expected that there would be negative effects or “threats” associated with the development, were concerned mostly with increased crime, increased cost of living and the potential disruption of the local inshore fishery. Of the 36.7% who expected any negative effects, over half (51.2%) were concerned about crime. Their greatest fear was that an influx of a predominantly young male work force would result in an increased rate of crime and vandalism in local communities.

Next, respondents were concerned about the project’s effect on the cost of living in local communities. When evaluating their perceptions of socio-economic issues, most felt that the cost of living was already a problem in the study area. They expected that high local costs would be exacerbated by the presence of the construction project. The cost of housing, in particular, was an issue that many were concerned about.

Effects on the local fishing industry were also of concern since much of the proposed construction activity was expected to take place on or near lucrative fishing grounds. Those who depended on the inshore fishery were concerned about the degree to which the project would interfere with their livelihood. They were not only concerned about their

Table 5.3**POTENTIAL NEGATIVE EFFECTS OF THE PROPOSED
OIL-RELATED CONSTRUCTION PROJECT (1985)**

Type	%
Increased crime	51.2
Increased cost of living	33.8
Disruption of fishery	27.7
Increased housing costs	15.5
Overcrowded schools	9.2
Oil spills/pollution	6.2
People moving in	5.1
Alcohol/drug abuse	1.5
Other	6.5

exclusion from traditional fishing grounds over the construction period but also about the potential for immediate and long-term biophysical impacts of project activities on those grounds. There were also fears that local people would leave fishery-related work for higher paying project jobs. The concern was that the project would effectively “steal” experienced workers from local employers and further disrupt the local fishing industry.

While the majority of respondents felt they were uninformed about the consequences of the proposed development, when weighing what they perceived would be the possible benefits and negative effects, 96% felt it was a good idea for this project to be located in their area.

5.1.2 LOCAL EMPLOYMENT POTENTIAL

Local community residents had high expectations about the number of employment opportunities that would be generated by the proposed construction project. Other community impact studies, however, have shown that local employment often fails to meet expectations because local workers do not have the necessary skill levels required for these projects and project jobs often do not go to unemployed or underemployed persons (Summers *et al.* 1976).

Like most modern industrial projects, the Hibernia concrete platform construction required a highly skilled workforce. For local communities to benefit from the

employment opportunities this project generated, the workforce needed to possess the appropriate skill levels. A total of 196 (36.5%) of the 537 survey respondents indicated that they would be interested in working on the project. Characteristics of those respondents suggests that few would meet the necessary qualifications.

Those who expressed an interest in project work came from a variety of occupational backgrounds, as shown in Table 5.4. Many were employed in the local fishery, either in Fish Processing (11.5%) or Fishing and Trapping (5.7%). Some of the 8.2% whose occupation was unskilled labour were also employed in the fishing industry. In fact, nearly half of the 80 respondents who were interested in project work and were employed at the time of the initial survey, were involved in some aspect of the fishery (Table 5.5); approximately 35% in fish processing and 9% in fishing and trapping.

Again referring to Table 5.4, approximately 23% of those interested in project employment, indicated their usual occupation as one that might be directly to the types required, those being Construction Trades; Machining, Fabricating and Assembling; Equipment Operating; Material Handling; and Natural Sciences and Engineering. Other respondents indicated usual occupations which might be applicable to the administration and service aspects of the project, including Managerial and Administrative (2.1%), Clerical (7.7%), and Sales and Service occupations (7.3%). However, because these classifications were based on the respondents' self-reported occupation title, it is difficult

Table 5.4**USUAL OCCUPATIONS OF RESPONDENTS
INTERESTED IN PROJECT WORK (1985)**

Occupation ¹	%
Managerial and Administrative	2.1
Natural Sciences, Engineering	2.6
Teaching	1.5
Medicine and Health	0.5
Clerical	7.7
Sales and Service	7.3
Fishing and Trapping	5.7
Mining and Mineral Processing (incl. Oil)	2.0
Food Processing	11.3
Machining, Fabricating and Assembling	6.6
Construction Trades	11.3
Transportation and Other Equipment Operating	2.1
Material Handling	0.5
Labourer (unspecific)	8.2
Homemaker	24.2
Student	0.5
Retired	1.5
Total	100

¹ Coded according to the Canadian Classification and Dictionary of Occupations

Table 5.5**EMPLOYMENT INDUSTRY OF RESPONDENTS
INTERESTED IN PROJECT WORK (1985)**

Industry ²	%
Fishing and Trapping	9.1
Petroleum and Natural Gas	7.8
Food Industries (Fish)	35.1
Wood Industries	3.9
Chemical Industries	1.3
Industrial and Heavy Construction	1.3
Transportation Industries	3.9
Retail	9.1
Government	15.6
Health and Social Services	6.5
Food/Beverage and Personal Services	3.9
Religion	2.6
Total	100

² Coded according to the Canadian Standard Industrial Classification

to determine if their work experience was at all relevant to the type of work required for the project.

Most construction-related jobs on the project required the minimum of journeyman status in applicable trades. As shown in Table 5.6, only one-third of those interested in project employment had completed some form of post-secondary education, although those were mostly programs in trades or technical colleges. Just over half (50.5%), however, had less than a high school education. When comparing occupations and education levels, it appears that few respondents who had usual occupations somewhat relevant to the construction project, had the post-secondary credentials to complement their work experience.

Another issue that was expected to come into play was gender. The workforce for this type of project is typically male since most of the trades involved are traditionally male dominated. Sixty-one percent of the respondents who expressed an interest in working on this project, however, were female (Table 5.7).

Undoubtedly, some local residents would have become employed on the project, but considering the employment status of those respondents who expressed an interest in doing so, the construction project would likely have little direct affect on the local unemployment problem. As shown in Table 5.8, of those who were interested, many

Table 5.6**EDUCATION LEVELS OF RESPONDENTS
INTERESTED IN PROJECT WORK (1985)**

Education Level	%
University degree	4.6
Trades/community/fisheries college	26.5
Other post-secondary	2.0
High school	16.3
Less than high school	50.5
Total	100

Table 5.7**AGE/SEX CHARACTERISTICS OF RESPONDENTS
INTERESTED IN PROJECT WORK (1985)**

Age Group	Male (%)	Female (%)	Total (%)
<19	3.2	2.0	2.5
20 - 34	38.9	45.0	42.1
35 - 49	42.1	47.0	44.6
50 - 64	13.7	6.0	9.7
65+	2.2	-	1.0
Total	48.7	51.3	100

Table 5.8

**EMPLOYMENT STATUS OF RESPONDENTS
INTERESTED IN PROJECT WORK (1985)**

Employment Status	%
Employed	40.8
Unemployed	30.0
Retired	2.0
Homemaker	24.5
Other	2.6
Total	100

(40.8%) were already employed and others were not labour force participants at the time of the survey. For instance, approximately one-quarter of those interested in project work, stated their employment status as 'homemaker'. The project could conceivably cause a shift in local employment patterns that might provide unskilled and semiskilled residents with increased job opportunities unrelated to the project. If those who were interested and had the required skills, were successful in obtaining project employment, the jobs that they left behind could then be filled by unemployed or underemployed residents of local communities.

5.1.3 COMMUNITY SATISFACTION AND QUALITY OF LIFE

Much of the community impact literature from the past two decades, has described the consequences of development in terms of the effects that such large-scale activity can have on the rural way of life. To assess future changes in community satisfaction and quality of life relative to the Hibernia construction project, the 1985 survey established a baseline of attitudes toward community life by asking respondents to describe characteristics of their community that they liked and disliked, to indicate the degree to which they felt particular social and economic issues were problems in their community, and to state their agreement or disagreement with statements relevant to various aspects of community life.

5.1.3.1 Community Likes and Dislikes

As is characteristic of most rural areas, survey respondents tended to like the quiet and peaceful atmosphere that accompanied living in their communities. As shown in Table 5.9, many of them also felt a strong sense of belonging to their community since they were born and grew up there and most of their family and friends lived nearby.

What respondents seemed to dislike most about their community was not a particular quality that it possessed but rather what it lacked (Table 5.10). Specifically, they disliked the lack, or poor quality, of services such as water and sewer facilities and other community infrastructure. The general scarcity of employment opportunities and lack of recreation facilities were also mentioned by 28 and 21 percent of respondents, respectively. The weather was the only physical characteristic that local residents disliked about the area - the Isthmus of Avalon is well known as being one of the foggiest regions of Newfoundland and Labrador.

5.1.3.2 Social and Economic Problem Issues

To determine residents' perceptions of community problems and satisfaction with local services, respondents were presented with a list of thirteen issues and asked to indicate the degree to which they felt each were problems in their respective communities. The list represented particular issues and community services which other impact studies have suggested are affected, or perceived to be affected, by large-scale

Table 5.9**TOP FIVE COMMUNITY CHARACTERISTICS
LIKED BY RESPONDENTS (1985)**

Characteristic	%
Quiet and peaceful	50.2
Born here/family lives here	34.2
Good people	18.2
Clean	11.2
Close to everything	10.8

Table 5.10**TOP FIVE COMMUNITY CHARACTERISTICS
DISLIKED BY RESPONDENTS (1985)**

Characteristic	%
Lack of community services (water/sewer, etc)	41
Scarcity of work	27.8
Fog/weather	23.5
Lack of recreation facilities	21.5
Nothing	18.2

development in rural areas. Issues were rated on a five-point Likert-type scale ranging from strongly agree (5) to strongly disagree (1). Table 5.11 provides a rank order distribution of the mean ratings for each issue, the highest possible mean being '5' and the lowest possible being one '1'. A mean rating higher than '3' indicates that the issue was considered a problem. A complete breakdown of responses, including response by region, is provided in Appendix F.

The three issues that were perceived as most problematic to survey respondents in 1985 were recreation facilities and opportunities for young people, unemployment and cost of living. Recreation and unemployment, in particular, were considered to be problems by the vast majority of respondents.

Lack of recreation facilities, or that "young people have nothing to do", was a common problem for all communities in the study area. To visit a swimming pool, sports arena, or even a movie theatre meant travelling to a larger centre, such as Clarenville or St. John's. The lack of recreation facilities was expressed earlier as the one aspect that respondents disliked most about living in the area.

The unemployment rate in Newfoundland and Labrador has historically been among the highest in Canada, particularly in rural parts of the province. It is not surprising, therefore, that unemployment would be considered a problem in communities along the

Table 5.11**RANK ORDER DISTRIBUTION
OF PROBLEM ISSUES (1985)**

Issue	Mean Rating
Recreation for young people	4.17
Unemployment	4.1
Cost of living	3.93
Services for the disabled	3.36
Daycare services	3.26
Alcohol/drug abuse	3.2
Services for senior citizens	3.13
Housing	2.89
Health services	2.85
Education services	2.72
Transportation	2.67
Vandalism	2.55
Crime	2.4

Isthmus of Avalon. High unemployment, in turn, explains respondents' emphasis on the employment opportunities expected from the proposed construction project.

The cost of living was also perceived as a problem at the time of the 1985 survey but, unlike unemployment, was expected to be negatively affected by the development. As mentioned earlier, an increased cost of living was one of the most probable negative effects of the project to be mentioned by respondents.

Negative effects on community satisfaction in "boomtowns" is often linked with the tendency for already limited rural services to be overwhelmed by the demands of rapidly increased local population. Housing (2.89), health (2.85), education (2.72) and transportation (2.67), at least, were not considered to be problems in the study area prior to the start of the project. The availability of these baseline measures allows subsequent research to detect changes in local perceptions relative to those issues as the project evolved.

Alcohol and drug abuse is another issue that is often anticipated as being exacerbated by rapid community growth. While more respondents agreed than disagreed that this issue was already a problem in the study area, many of them felt that it was a problem only among young people and was usually equated with the lack of recreation facilities in the area.

There was some variation in perceptions of problem issues within the study area. Seven of the thirteen issues were considered to be more problematic by respondents in the Northwest region (see Figure 3). Those issues were unemployment, health services, education services, transportation, daycare services, and services for people with disabilities. While the area as a whole is rural, communities included in the Northwest region have relatively smaller populations, none are incorporated towns and residents would usually have to travel to larger communities for most services.

The issues that were seen as least problematic in all communities were crime and vandalism. In fact, these issues were not considered to be problems at all by most respondents. In a supplementary question, less than 3% of respondents indicated that they had personally experienced any incidents of crime in the year leading up to the survey. For those who had, the crimes were mostly minor theft or acts of vandalism. However, in relation to the proposed development, crime was the potential impact that was feared most by local people (Table 5.3).

5.1.3.3 Quality of Life Indicators

Following their evaluation of problem issues, respondents were asked to rate 14 statements depicting various aspects of community life. These quality of life indicators were also rated on a five-point Likert-type scale. For positively worded statements, the

scale values ranged from strongly agree (5) to strongly disagree (1) but were reversed for negatively worded statements.

As in Fuchs and Cake (1986), for analytical purposes the statements were divided into a series of four quality of life dimensions: sociability, economic security, political efficacy and personal security. Mean ratings for statements included in each of these dimensions are summarized in Tables 5.12 - 5.16. The highest possible mean is '5' and the lowest possible is '1'; a mean rating above '3' was considered positive and below '3' negative. A complete breakdown of responses to each of these statements, including analysis by region, is provided in Appendix G.

Mean ratings were highest for the sociability dimension. As shown in Table 5.12, respondents tended to describe their communities as "close knit" and friendly, places where "everybody knows everybody". The only significant differences among the communities were that Northwest respondents were more inclined to feel that their communities were a "good place to raise children" and Adjacent communities were more likely to say they regularly "visited with their neighbours". There is, however, no obvious reason why these differences might occur.

Although slightly lower than the ratings on the sociability dimension, respondents attitudes toward their economic security were positive overall (Table 5.13). They were

Table 5.12**SOCIABILITY (1985)**

Element (polarity)	Mean Rating
Know few people (-)	3.91
People friendly and cooperative (+)	3.9
Good place to raise children (+)	3.79
Sense of belonging (+)	3.79
Seldom visit neighbours (-)	3.1
Dimension Average	3.7

Table 5.13**ECONOMIC SECURITY (1985)**

Element (polarity)	Mean Rating
Would move from area (-)	3.36
Satisfied with standard of living (+)	3.22
Area full of promise (+)	3.22
Worry about meeting living expenses (-)	2.78
Dimension Average	3.15

generally satisfied with their standard of living and felt that the area had a promising future, which was supported by respondents' interest in remaining in their community. They did, however, indicate uncertainty about their ability to meet their living expenses, reflecting previous indications that cost of living was considered a problem in the area.

As shown in Table 5.14, individuals were divided on the degree to which they felt able to influence decisions affecting their communities. In fact, a considerable portion of respondents offered no opinion on these statements, which in itself is indicative of their perceived lack of political efficacy. Fuchs and Cake (1986) indicated a positive sense of political efficacy as being one of the key factors in forecasting how a community will respond to the changes associated with large-scale development. These results suggest that the people most likely to be affected by the proposed Hibernia construction project, felt they would have little say over how the development would proceed.

The lowest ranking of the four dimensions was personal security. Despite the high degree of social integration described earlier and the low ranking of crime and vandalism as community problem issues, as shown in Table 5.15, respondents expressed concern about their personal security. Less than 3% indicated that they had personally experienced any incidents of crime in the year leading up to the survey. For those who had, the crimes were mostly minor theft or acts of vandalism. While crime and vandalism were not considered to be problems at the time of the survey, the fact that communities were

Table 5.14**POLITICAL EFFICACY (1985)**

Element (polarity)	Mean Rating
No sense expressing opinions (-)	3.03
People have a lot of say over decisions (+)	3.03
Dimension Average	3.03

Table 5.15**PERSONAL SECURITY (1985)**

Element (polarity)	Mean Rating
People are under stress (-)	3.08
Necessary to lock doors at night (-)	2.69
Take precautions to prevent theft (-)	2.46
Dimension Average	2.74

already somewhat concerned about personal security reflects their fear that the project would result in an increased crime rate.

The dimension ratings, as summarized in Table 5.16, suggest a region where residents feel a strong sense of community attachment and social integration but are uncertain about their economic and personal security. They express optimism about their future but feel they have little control over decisions affecting their communities.

5.1.4 PRE-DEVELOPMENT SUMMARY

Residents nearest the proposed site for the Hibernia construction project have had positive experiences with large-scale development in the past and they were looking forward to hosting this development. Local communities at the time of the initial survey, therefore, possessed at least two of the characteristics Fuchs and Cake suggest are important in contributing to a positive response to the proposed project.

In terms of Freudenburg and Gramling's concept, survey respondents had determined that the project offered far greater "opportunities" than "threats" to themselves and their communities. They anticipated that the project would result in numerous employment opportunities, many of which were expected go to local people. While potential employment benefits received most of the attention, there were some who feared that the project would also be accompanied by negative social effects, such as increased crime.

Table 5.16

**RANK ORDER DISTRIBUTION OF
QUALITY OF LIFE DIMENSIONS (1985)**

Dimension	Mean Rating
Sociability	3.7
Economic security	3.15
Political efficacy	3.03
Personal security	2.74

If past experience was to be repeated, the impacts of this project would neither be as positive nor as negative as expected. Therefore, it was expected that attitudes would change as communities gain more experience with the project and project characteristics become more clearly defined. Because of the strength of attitudes at this stage, it was expected that subsequent surveys would find that attitudes had remained favourable but that perceptions of project effects would become more realistic and focussed.

5.2 Phase II: Site-preparation

“Every area grows as the result of a project like this, but our community and the area are not benefiting. Money is being spent elsewhere.”

39-year-old male, Come By Chance, 1992

When the second survey was undertaken in 1992, the site preparation had been under way for approximately 18 months and decisions had been made which had resolved many of the uncertainties surrounding the project present during the first phase of research. Some of the project decisions that might be thought to have influenced local attitudes and perceptions were that the preferred mode of production was a fixed platform; the construction sites had been changed from Adam’s Head and Argentia to Mosquito Cove; the project would be carried out by a unionized work force; workers would be accommodated in a fully-equipped on-site work camp; and the aggregate would not be taken from Piper’s Hole River, near Swift Current (see Figure 3).

In Phase II, the study area had been expanded to include 10 communities, as described in Chapter 4. For analytical purposes, the larger region was divided into three subregions: Adjacent and Northwest, which were included in Phase I, and Southeast, which comprises the three communities added to this phase of the study (Figure 3).

5.2.1 COMMUNITY AWARENESS AND PUBLIC INVOLVEMENT

Having had seven years of experience with the planning and site-preparation for the Hibernia construction project, respondents to the 1992 survey felt more informed about the likely consequences of the development than those in the previous research phase. As shown in Table 5.17, 37.7% indicated that they felt adequately informed to judge the advantages and disadvantages associated with the project, compared to only 23% in 1985. The majority, however, still felt uninformed. Being “closer to the action”, respondents who lived in the Adjacent region of the study area were more likely to say they felt informed than those in either the Northwest or Southeast regions, but the difference was not statistically significant.

Any information that respondents had received was said to have come mainly from television, newsletters (circulated by the proponent) and word of mouth. Despite the proliferation of oil-related groups in the years between the two survey points, only about 3% cited these as their main source of information.

As discussed in Chapter 3, a number of local and regional groups had been formed to represent the interests of their respective communities, as well as specific segments of the population such as local fishers, business owners and municipal councils. Just over one-quarter (26.2%) of those surveyed said they were aware of some of the oil-related groups, but only about a quarter of those people were then able to name one or more of them. A

Table 5.17
INFORMED TO JUDGE ADVANTAGES AND DISADVANTAGES
OF THE HIBERNIA CONSTRUCTION PROJECT? (1985 & 1992)

Response	1985 (%)	1992 (%)
Yes	23.3	37.7
No	70.9	50.0
Uncertain	5.8	12.3

further 15% said that they were aware of the groups but were not sure of the names, and 12% could not name a group but were able to name one of the group's members. The remaining respondents named a community organization that was completely unrelated to the topic.

When asked who they would contact if they had a question or concern about the development, over half (53.8%) said they didn't know. Approximately 14% would ask HMDC or one of its community representatives (whom they named); 11.5% would ask a representative of one of the local oil-related interest groups; others would turn to the area's Federal or Provincial government member.

Despite the length of time that had passed and the efforts of organized groups to represent local interests, a significant portion of respondents said they did not feel adequately informed to judge the consequences of this development. Communities surrounding the Bull Arm site were, therefore, playing host to a project which many still claimed to know very little about.

5.2.2 EXPECTATIONS VERSUS EXPERIENCES

Having experienced approximately 18 months of activity related to the platform construction, respondents felt that the project had resulted in considerably more benefits to their communities than it had negative effects. As shown in Table 5.18, approximately

Table 5.18

**ANY BENEFITS AND NEGATIVE EFFECTS OF THE
HIBERNIA CONSTRUCTION PROJECT TO NOW? (1992)**

Question	Yes (%)	No (%)	Don't know (%)
Benefits to now?	56.9	36.2	6.9
Negative effects to now?	22.3	72.3	5.4

57% felt they had experienced benefits up to this stage in the development, compared to 22% who felt there had been negative effects.

As hypothesized (Hypothesis #4), when comparing the three zones within the study area, the Adjacent area was significantly more likely than the Northwest or Southeast zones to perceive that they had benefited from the project up to now. Adjacent communities, as well as communities in the Southeast, were also more likely to perceive that they had experienced negative effects from the project.

There were considerable differences in the types of benefits and negative effects anticipated in 1985 and those that were perceived to have occurred up to the site-preparation phase in 1992, as shown in Tables 5.19 and 5.20, respectively. Up to this stage in the development, impacts had neither been as positive nor as negative as previously anticipated.

5.2.2.1 Project Employment

Up to the site-preparation phase, some local people were successful in getting project jobs, but not to the extent expected in 1985. As shown in Table 5.19, survey respondents perceived that the area, in general, had benefited from project employment, but direct jobs to the themselves or other members of their households were markedly fewer than anticipated. Although the skill level requirements for site-preparation work

Table 5.19**EXPECTED VERSUS EXPERIENCED BENEFITS OF THE
HIBERNIA CONSTRUCTION PROJECT (1985 & 1992)**

Benefit	Expected 1985	Experienced 1992
Employment in general	88.7	74.3
More municipal services	43.0	1.4
More people moving in	33.9	4.1
Employment for self/family	22.9	4.1
Economic benefits	3.8	8.2
Business opportunities	2.7	18.9
Community growth/ development	1.8	8.1
Other	3.2	9.5

Table 5.20**EXPECTED VERSUS EXPERIENCED NEGATIVE EFFECTS
OF THE HIBERNIA CONSTRUCTION PROJECT (1985 & 1992)**

Negative Effect	Expected 1985	Experienced 1992
Increased crime	51.2	0.0
Increased cost of living	33.8	34.5
Disruption of fishery	27.7	10.3
Increased housing costs	15.5	10.3
Overcrowded schools	9.2	0.0
Oil spills/pollution	6.2	0.0
People moving in	5.1	0.0
Alcohol/drug abuse	1.5	0.0
Unfair hiring practices	0.0	17.2
Effects of slow-down	0.0	17.2
Effects on unemployed	0.0	3.4
Other	6.5	20.7

were considerably lower than for the construction project itself, the number of local people who were able to work during this phase was limited by the stipulation that project workers had to be members of an appropriate union.

In 1992, approximately 50% of respondents indicated an interest in working on the project and 26% had actually applied for project jobs. Only 6.9%, however, had been employed for any length of time up to this point in the project. Jobs ranged in length from two to 18 months, with the average length of employment being approximately 11 months. Most of the jobs were in construction trades and material-handling, and all positions were unionized.

While there was no significant difference in the number of male and female respondents who expressed an interest in working on the project (45.8% and 54.2%, respectively), males were much more likely to get jobs than females (78% to 22%, respectively).

Approximately 9% of respondents also indicated that there were other members of their household who had worked on the project during site preparation. Jobs were mainly in clerical, service and construction trades and ranged in length from a few weeks to 16 months, the average being about nine months. The vast majority (83%) were also unionized positions.

There was no significant difference in the number of respondents from each of the three regions who had worked on the project. Slightly more households in the Adjacent region had a member, other than the respondent, who had worked on the project, but the difference, again, was not statistically significant. To people living in the area, however, it was perceived that the Adjacent area had received greater employment benefits from the project. Their evaluation was more likely based on the actual number of workers from each of the adjacent communities rather than on the per capita basis which was used in the statistical test.

5.2.2.2 Other Project Benefits

While employment opportunities did not occur to the extent expected, indirect effects which were not anticipated in 1985, such as business opportunities and other economic benefits, were perceived to have resulted from the project (Table 5.19).

People also did not see the improvements to municipal services they had expected in 1985, nor had significant numbers of people moved into their communities. In 1985, residents were expecting that community services would have to be improved to meet the expectation and requirements of people who would be moving into the area to work on the project. Since it was decided that the workforce would be housed on the site, local community populations did not increase as expected, and therefore, neither did demands for or provision of community services.

The decision to use a unionized workforce also curbed the likelihood that speculative migrants would move to the area to look for work. For people who had moved to other parts of the province or country to find work, the project was originally seen as an opportunity to move back home. Only 3% of households, however, had a family member who had returned to the area to seek work on the project.

5.2.2.3 Negative Effects

As with benefits, the negative consequences of the development also had not occurred to the extent previously expected. Most noticeably, crime, which in the 1985 survey was the greatest fear among respondents, was not mentioned as a consequence of the development up to this point (Table 5.20). A slightly higher percentage (4.6%) in 1992 than in 1985 had been victims of some form of crime during the year leading up to the survey, but again these were minor thefts from their home or car, and were in no way connected to the project.

The greatest similarity between expectations and experience, was the perception that there had been an increase in the cost of living in relation to project activities. In particular, respondents felt that housing costs had increased since the site-preparation had begun. Reports from community residents, however, indicate that it was more a case of a two-tiered rental system, that is, house and apartment owners would charge substantially higher rents to tenants who worked at the construction site than to those who did not.

The anticipated disruption to the local fishery had not materialized up to the site-preparation phase, mainly because activities up to this point had taken place mostly on land, but also because of the change in site location from Adam's Head to Bull Arm. Had the construction site remained at Adam's Head, project activities would have had the potential to affect fishing enterprises in more than a dozen communities around the head of Placentia Bay. At the Trinity Bay location, considerably fewer fishers were likely to be affected by exclusion zones set out during the construction period, mainly those fishing out of Sunnyside.

In 1985, many respondents had considered new people moving into the area to be a beneficial consequence of large-scale development, while a few perceived it more as a negative effect. Regardless of the perceptions recorded during the initial survey, it was considered neither a benefit nor a negative effect in 1992. Because workers were mainly living on-site, the possibility of people moving into local communities no longer appeared to be an issue.

At this stage in the development, respondents were more likely to mention negative aspects of the project itself rather than the effects that these arrangements or systems might have on their communities. A number of respondents complained of unfair hiring practices at the construction site, including cases of nepotism. They claimed that although construction workers were meant to be union members, the likelihood of getting

a job at the site, in fact, depended more on “who you know” or “who you’re related to”. Other respondents who had been working at the site, complained of lay-offs brought about by the slow-down in activity when Gulf Oil pulled out of the venture.

5.2.3 EXPECTATIONS FOR PROJECT FUTURE

While local communities had not seen the level of benefits they had anticipated during the pre-development survey, their attitudes toward the project had remained favourable after experiencing the site-preparation phase. In 1992, respondents still saw the potential for benefits from the remainder of the project, although they were slightly less optimistic. As in 1985, they were much more likely to perceive that there would be benefits associated with the project (Table 5.21) than they were negative effects (Table 5.22). In fact, they were even less likely to expect negative effects than they had been previously.

Employment was still seen as the most likely benefit from the development in the future but, having already seen fewer opportunities than had been hoped, this view was stated by a significantly smaller portion of respondents to the 1992 survey (Table 5.23). They also felt it was less likely that they, personally, or a member of their family would find work on the project over the coming few years.

Table 5.21

**ANY POTENTIAL BENEFITS OF THE
HIBERNIA CONSTRUCTION PROJECT? (1985 & 1992)**

Response	1985 (%)	1992 (%)
Yes	83.2	78.5
No	11.7	16.9
Don't know	5.1	4.6

Table 5.22

**ANY POTENTIAL NEGATIVE EFFECTS OF THE
HIBERNIA CONSTRUCTION PROJECT? (1985 & 1992)**

Response	1985 (%)	1992 (%)
Yes	36.7	28.5
No	46.3	55.4
Don't know	16.9	16.2

Table 5.23**POTENTIAL BENEFITS OF THE
HIBERNIA CONSTRUCTION PROJECT (1985 & 1992)**

Benefit	1985 (%)	1992 (%)
Employment in general	88.7	67.7
More municipal services	43.0	0.0
More people moving in	33.9	13.7
Employment for self/ family	22.9	14.7
Economic benefits	3.8	16.7
Business opportunities	2.7	28.4
Community growth/ development	1.8	8.8
Other	3.2	6.9

Unlike in 1985, community residents no longer saw the project as a means of improving municipal services in the area. With most project personnel living on site, they were less likely to expect as many new-comers to local communities, which, in turn, eliminated the need to improve community services and infrastructure to accommodate increased demand.

In 1992, however, respondents were more likely to expect benefits other than employment. The focus was still economic but because of their experience with business spin-offs during the site preparation, respondents now saw the possibility of spin-off business opportunities and economic benefits, in general, coming to their communities as a result of the project in the future.

In terms of negative effects, crime was again considered to be the most likely consequence of this development (Table 5.24). Crime was not mentioned as a negative effect during the site-preparation phase and, as discussed in the next section, was still ranked as the least problematic issue by 1992 survey respondents. Yet, crime related to the Hibernia construction project, remained a primary concern for residents of the study area.

Respondents were less inclined to feel that there would be an increase in the cost of living for the remainder of the project, although, as stated earlier, it was perceived as one of the

Table 5.24**POTENTIAL NEGATIVE EFFECTS OF THE
HIBERNIA CONSTRUCTION PROJECT (1985 & 1992)**

Negative Effect	1985 (%)	1992 (%)
Increased crime	51.2	51.4
Increased cost of living	33.8	16.2
Disruption of fishery	27.7	10.8
Increased housing costs	15.5	0.0
Overcrowded schools	9.2	0.0
Oil spills/pollution	6.2	2.7
People moving in	5.1	29.7
Alcohol/drug abuse	1.5	5.4
Low-income people will suffer	0.0	5.4
Other	6.5	16.2

negative impacts of the development up to the site-preparation phase. Increased housing costs were not mentioned as a possible negative effect at this point in time.

The potential disruption of the local fishery was also of considerably less concern at this stage of the development than it had been in 1985. Changing the construction site to Bull Arm, Trinity Bay meant that fewer fishers would be affected by the project activities and, for those who would, the proponent had developed a compensation package to cover loss of income for the duration of the project.

A final point, which reflects a complete change in attitude between the pre-development and site-preparation phases, was the issue of people moving into the area. While in 1985 the prospect of a larger population was equated with community growth and development, in 1992, people moving into the area was more likely to be perceived as a negative effect of the project. "People moving in" has already been cited as one of the negative effects communities had experienced up to the site-preparation phase. There were feelings of resentment toward newcomers, even though they had had no real negative impact on local communities. While some respondents to the initial survey expected that the influx of a predominantly male workforce would result in increased crime and vandalism, these impacts had not occurred up to this stage in the development. The resentment expressed by survey respondents can more likely be attributed to the fact

that the majority of project jobs went to people from outside the area, jobs that many respondents felt should have gone to local residents.

5.2.4 COMMUNITY SATISFACTION AND QUALITY OF LIFE

Up to the site-preparation phase, neither the positive nor the negative effects had occurred to the extent expected when the project was first proposed. Survey respondents, at this point, were somewhat less optimistic about the consequences of the development in the future than they were in the previous research phase, but expectations were positive overall. Because of the decisions to house workers on site and to employ only unionized personnel, there has been little interaction between the project community and communities surrounding the site. The project, therefore, had had little effect on the way of life in the study area, as shown in the following discussion of socio-economic issues and quality of life indicators.

5.2.4.1 Social and Economic Problem Issues

There were few changes in the perceptions of the social and economic issues between survey points. Respondents in Phase II were presented with the same thirteen issues as in the previous survey and asked to indicate the degree to which each were problems in their communities. Respondents were not given an opportunity to add new issues, as it was assumed that problems that were perceived to have arisen as a result of the project would have been expressed as perceived negative effects in the earlier

question. Again, the issues were rated on a five-point scale ranging from strongly agree to strongly disagree, with the highest possible mean rating being '5' and the lowest possible being '1'. An issue that received a mean rating above '3' was considered to be a community problem.

Mean ratings were lower or virtually unchanged for most issues from the pre-development to the site-preparation phase of the construction project. As shown in Table 5.25, unemployment and recreation for young people were still seen as being most problematic in 1992, but mean ratings were lower for each issue, significantly so for recreation. The decrease in concern over the unemployment issue was likely related to employment opportunities created by the project. Though not to the extent that was previously expected, respondents felt that employment for local residents had occurred up to the site-preparation phase.

The mean rating for cost of living as a problem was also significantly lower in 1992 than in 1985. An increased cost of living was one of the negative effects expected from the project and, as discussed earlier, was perceived by some to have already occurred at this stage in the development, particularly through increases in housing costs. As the lower mean rating suggests, in general, the cost of living was not considered to be more problematic in the presence of large-scale development than it had been before the project began.

Table 5.25**RANK ORDER DISTRIBUTION
OF PROBLEM ISSUES (1985 & 1992)**

Issue	Mean Rating	
	1985	1992
Recreation for young people	4.17	3.61
Unemployment	4.10	3.93
Cost of living	3.93	3.55
Services for the disabled	3.36	3.46
Daycare services	3.26	3.25
Alcohol/drug abuse	3.20	2.99
Services for senior citizens	3.13	3.14
Housing	2.89	2.89
Health services	2.85	3.02
Education services	2.72	2.85
Transportation	2.67	2.52
Vandalism	2.55	2.54
Crime	2.40	2.32

Similar to findings in 1985, education, daycare, services for seniors and recreation for young people were perceived as being more problematic in the Northwest than in either of the other regions. This again is likely related to the relatively smaller size of the communities and their lack of these services. Survey respondents who had been in the area only since the start of the site preparation, were more likely to consider education services a problem, indicating that local schools were perhaps not up to the standards to which they were accustomed.

Interestingly, the mean rating for alcohol and drug abuse was significantly lower during the site-preparation phase than it had been before the project began. Alcohol and drug abuse has often been perceived as a negative consequence of large-scale development, but in this case did not appear to be of concern.

Crime was again seen as being the least problematic of all the social and economic issues presented. In fact, respondents considered it to be even less of a problem in 1992, as suggested by the lower mean rating that year. Similar to 1985, crime and vandalism means were higher in the Adjacent and Southeast regions but were still not seen as being problematic. While crime was expected to be the most likely negative impact of the construction project, there is no evidence that it had occurred up to the site-preparation phase. A telephone interview with the local detachment of the RCMP revealed that the only noticeable change in criminal activity, that could in any way be connected to the

project, was the increased incidence of impaired driving charges that had occurred along the highway between the work camp and the local bar.

5.2.4.2 Quality of Life Indicators

As in the previous research phase, the quality of life statements were rated on a five-point scale ranging from strongly agree to strongly disagree, with the highest possible mean rating being '5' and the lowest possible being '1'. A mean rating above or below '3' was considered positive and negative, respectively.

The overall average for sociability remained the same across survey points and was again the highest of the four dimensions (Table 5.26). As in 1985, respondents felt that they knew most people in their communities, felt that people were friendly and cooperative and often visited with their neighbours. Respondents in 1992, however, were significantly less likely to indicate that they felt a strong sense of belonging in their communities. As might be expected, those who had lived in the area for less than two years (roughly as long as site-preparations had been underway), were less likely to feel that they knew people in the community.

There was some regional variation in responses to the individual statements within this dimension. Adjacent communities, for instance, were considered more friendly and cooperative, a better place to raise children and respondents indicated a stronger sense of

Table 5.26**SOCIABILITY (1985 & 1992)**

Element (polarity)	Mean Rating	
	1985	1992
People friendly and cooperative (+)	3.90	3.94
Good place to raise children (+)	3.79	3.82
Know few people (-)	3.91	3.80
Sense of belonging (+)	3.79	3.63
Seldom visit neighbours (-)	3.10	3.29
Dimension Average	3.70	3.70

belonging. Communities in the Northwest zone were more likely to know most people in their communities. The positive attitude expressed by the Adjacent region, reflected their earlier perceptions that the project had been beneficial to their communities up to that time.

Overall, survey respondents felt more economically secure at this research phase (Table 5.27). With the exception of meeting living expenses, average ratings for individual statements increased. Respondents were significantly more satisfied with their standard of living, were less likely to want to move from the area and more likely to feel that the next five years held promise for the area. Contrary to this, they were significantly more worried about meeting their living expenses. None of the responses to these statements varied significantly among the three zones of the study area.

The dimension average for political efficacy increased slightly between survey points but still bordered on neutral (Table 5.28). People were more likely to feel it was worthwhile to express their opinions but still felt they had little influence over decisions affecting their area. Indicative of their perceived lack of political efficacy, nearly one-quarter of respondents offered no opinion on this statement.

Though local people feared that the project would be accompanied by increased crime, their fears did not appear to be justified up to the site-preparation phase. As shown in

Table 5.27**ECONOMIC SECURITY (1985 & 1992)**

Element (polarity)	Mean Rating	
	1985	1992
Satisfied with standard of living (+)	3.22	3.59
Would move from area (-)	3.36	3.52
Area full of promise (+)	3.22	3.26
Worry about meeting living expenses (-)	2.78	2.57
Dimension Average	3.15	3.24

Table 5.28**POLITICAL EFFICACY (1985 & 1992)**

Element (polarity)	Mean Rating	
	1985	1992
No sense expressing opinions (-)	3.03	3.19
People have a lot of say over decisions (+)	3.03	2.94
Dimension Average	3.03	3.07

Table 5.29, mean ratings for the personal security dimension were actually higher in the 1992 than in the pre-development survey. People were more likely to disagree that it was necessary to lock doors or take precautions to prevent theft, but were more likely to agree that local people were under stress. While responses indicate that community residents were feeling safer and more secure at this point in time, the mean rating was still not positive, that is, above '3'.

With the exception of sociability, mean ratings for the quality of life dimensions were higher during the site-preparation phase than they were before the development began (Table 5.30). Communities seemed to be as sociable and "close knit" as before, and with the development finally under way, were feeling more economically and personally secure. They even felt slightly more politically efficacious as they moved into the next phase of construction.

5.2.5 SITE-PREPARATION SUMMARY

While the area's previous experience with large-scale development, and the overwhelmingly positive attitude toward the current development, had likely played a significant role in community response up to this point, there were also a number of project characteristics and management decisions which undoubtedly influenced the development's overall impact. One such decision was the unionized labour agreement, which reduced the likelihood of speculative migration to communities near the site and,

Table 5.29**PERSONAL SECURITY (1985 & 1992)**

Element (polarity)	Mean Rating	
	1985	1992
People are under stress (-)	3.08	3.02
Necessary to lock doors at night (-)	2.69	2.77
Take precautions to prevent theft (-)	2.46	2.69
Dimension Average	2.74	2.83

Table 5.30**RANK ORDER DISTRIBUTION OF
QUALITY OF LIFE DIMENSIONS (1985 & 1992)**

Dimension	Mean Rating	
	1985	1992
Sociability	3.70	3.70
Economic security	3.15	3.24
Political efficacy	3.03	3.07
Personal security	2.74	2.83

thereby, minimized the degree of community disruption in the early stages of the project. A second factor was the decision to accommodate project workers in a fully-serviced on-site facility. The on-site work camp virtually eliminated the potential influx of people into local communities and ensured minimal interaction between the project and local communities once the construction was under way.

The down side of using a unionized work force was that it significantly diminished the number of jobs available to local people. Recognizing the reduction in employment potential, for the remainder of the project, communities seemed to have redirected their expectations toward maximizing potential spin-off benefits such as increased business opportunities and economic benefits, in general. The expansion and development of local businesses in support of the project was, in turn, expected to lead to increased local employment.

In terms of negative effects, crime was still expected to be a factor as the project progressed, even though there had been no evidence of increased crime rates during the early stages of activity. Most of the other impacts had become less threatening over time. A notable switch in opinion between the pre-development and site-preparation phases, however, was that the prospect of new people moving into the area had become a potential negative outcome of the project as communities gained experience.

As predicted by Fuchs and Cake, communities along the Isthmus of Avalon had responded positively toward the Hibernia construction project, at least up to the site-preparation phase. And, although communities had not received the expected level of benefits, attitudes had remained favourable, as reflected in survey respondents' positive outlook for the remainder of the project. Based on these findings, it was hypothesised for the third research phase that residents of the study area would remain favourable throughout the entire construction period.

5.3 Phase III: Wind-down

“Only for the fact that you can look out the window and see it, you’d never say Hibernia was here. There’s been no benefit whatsoever!”

44-year-old male, Sunnyside, 1996

When the final survey was conducted in the spring of 1996, the Hibernia construction project was nearing its end. The peak construction period had passed and construction activities were beginning to wind down. The final pouring of concrete to complete the GBS portion of the project was scheduled for about a month after the final interviews were carried out.

In Phase III, the study area included the same 10 communities as Phase II. Again, the communities were grouped into the Adjacent, Northwest and Southeast regions so that spatial variations in community response could be considered.

5.3.1 COMMUNITY AWARENESS

Survey respondents felt more informed as the project progressed. As shown in Table 5.31, the percentage who felt well-informed had more than doubled from 1985 to 1996. However, after 11 years of experience with this project, still just over half of the respondents felt they had enough information to judge its possible advantages and disadvantages. Communities in the Adjacent region of the study area were significantly

Table 5.31
INFORMED TO JUDGE ADVANTAGES AND DISADVANTAGES
OF THE HIBERNIA CONSTRUCTION PROJECT? (1985, 1992 & 1996)

Response	1985 (%)	1992 (%)	1996 (%)
Yes	23.3	37.7	51.8
No	70.9	50.0	35.8
Uncertain	5.8	12.3	12.4

more likely to feel that they were informed enough to make judgements but that still represented only a slight majority of respondents in those three communities.

The main sources from which people received information about the project were reported as word-of-mouth (39%), various media (television, radio, newspapers - 24%) and proponent newsletters (16%). Only about 3% said they received most of their information from the Bull Arm Area Coordinating Committee or one of the other local interest groups.

In 1996, in fact, only 23.6% said that they were even aware of any oil-related groups that had been formed in the area. Interestingly, this is slightly less than the percentage of respondents who were aware of such groups in the 1992 survey. Of the 23.6%, 37% were actually able to name a group correctly, while 17% were able to name a group member but not the group itself. A further 24% said they were aware that such groups existed but were unable to name either a group or a member. Nearly 22% named a community group unrelated to oil development interests.

Reflecting their ignorance of community interest groups, there was no consistency in respondents' perceptions of which routes to follow in acquiring information or voicing concerns about the project. When asked who they would contact with a question or concern, 35.8% said they didn't know. For those who indicated a possible contact, the

most common was the Information Centre at the entrance to the Bull Arm site (20.6%), which was overseen by BAACC personnel. Others named specific people, either by name or by title, whose offices were located in the information centre. In general, though, respondents had their own ideas about who to contact, including their town council, local member of Parliament or House of Assembly, union representatives or project workers. There did not seem to be any agreed upon means of communication related to the project.

To gain a better understanding about community response to project management and the decision-making process, survey respondents were asked if local groups, government and industry had represented the best interests of local communities in planning for this project. Despite the fact that less than a quarter of respondents said they were aware of any oil-related interest groups, approximately 53% felt that local groups had represented their communities' best interests in relation to the project. It is interesting that a higher percentage of those interviewed felt that the industry had represented their interests better than the government had; 40.2% and 30.1%, respectively.

For those who felt that the interests of local communities were not well-represented, their concerns centred mostly around the lack of community involvement in the decision-making process. Those respondents felt that local groups had not provided them with enough information and had not allowed them to become involved in making decisions that would ultimately affect their communities. The priority for local communities was

“jobs” and respondents felt that local groups had let them down in this respect. They felt that these groups showed a general lack of support for local people and felt they could have made more of an effort to get local people employed on the project. However, considering the required skill levels and the provincial government’s decision to use a unionized workforce, it was unlikely that local groups could do more than they had to affect local employment opportunities.

Government was also criticised for its lack of support for local communities and for not securing more project jobs for local people. When referring to industry’s role, they seemed to feel that the companies put their own interests first and did not provide as many jobs to local people as they might have.

Overall, the majority of people felt that they were not adequately informed about the possible effects of this project. They felt that there should have been more community meetings and a more regular dissemination of information to the local public throughout the entire process.

5.3.2 EXPECTATIONS VERSUS EXPERIENCES

As the construction project drew to a close, neither the positive nor the negative effects had occurred to the extent that had been expected in the earlier research phases. There were, however, certain effects that community residents had not foreseen during the planning or site-preparation phases of the development.

Looking back on their experiences over the previous several years, local communities were much more likely to feel that they had benefited from the development than they had experienced negative effects. As shown in Tables 5.32 and 5.33, nearly three-quarters of survey respondents in 1996 felt that their communities had benefited compared to just over one-quarter who felt that there had been any negative effects. They were also more likely to feel they had experienced both positive and negative effects during the construction phase of the project than they had up to the site preparation in 1992.

5.3.2.1 Employment Benefits

While employment was seen as being the greatest benefit to occur as a result of the project, the number of local people who got jobs was far below what was expected in 1985 or 1992. As shown in Table 5.34, this was true of employment, in general, and of direct employment to individual respondents and/or members of their households.

Table 5.32

**ANY BENEFITS OF THE HIBERNIA
CONSTRUCTION PROJECT TO NOW? (1992 & 1996)**

Response	1992 (%)	1996 (%)
Yes	56.9	73.7
No	36.2	23.0
Don't know	6.9	3.2

Table 5.33

**ANY NEGATIVE EFFECTS OF THE HIBERNIA
CONSTRUCTION PROJECT TO NOW? (1992 & 1996)**

Response	1992 (%)	1996 (%)
Yes	22.3	26.3
No	72.3	67.5
Don't know	5.4	6.2

Table 5.34**BENEFITS OF THE HIBERNIA
CONSTRUCTION PROJECT TO NOW (1992 & 1996)**

Benefit	1992	1996
Employment in general	74.3	56.0
More municipal services	1.4	0.0
More people moving in	4.1	6.4
Employment for self/ family	4.1	11.6
Business opportunities	18.9	40.8
Economic benefits	8.2	22.8
Community growth/ development	8.1	0.0
Charitable donations	0.0	10.8
Use of facilities	0.0	9.2
Compensation	0.0	3.6
Other	9.5	0.8

Approximately 12% indicated that they had worked at some period during the life of the project. A further 30% said they had applied for jobs but were not successful. More of the jobs had gone to residents of the Adjacent region, but the difference was not statistically significant when compared to the other two. For those who had worked, the average length of employment was 26 months, with positions ranging in length from two months to five years. The majority of jobs (71.4%) were union positions. These were mainly construction and service jobs, but a few were management and administrative positions. Those in the latter categories were more likely to be newcomers who had lived in the area for six years or less, that is, since the start of construction.

Other than the respondents themselves, 18.6% had at least one member of their household who had been employed on the project. A further 32% indicated that members of their household had applied for project employment. For those who were successful in getting jobs, their positions ranged in length from one month to six years, with the average period of employment lasting 25 months. Approximately 78% of those jobs were union.

Both sexes showed similar interest in project employment. There was no significant difference in the percentage of male and female respondents who had applied to work on the project (31.6% and 29.7%, respectively) but of those who were successful in getting employment, 83% were male.

There was a strong correlation between project employment and the respondents' length of residence in the study area. Respondents who had lived in the area for six years or less or, in other words, since the start of the site-preparation phase, were more likely to have worked on the project themselves or to have a household member who had. In fact, while "newcomers" accounted for only 15% of all people surveyed, they made up approximately 42% of respondents who had worked on the project. If those who were only temporary residents of the study area were discarded from the analysis, the actual benefit of this project toward employing long-time local residents, would be even further reduced.

5.3.2.2 Other Benefits

In addition to employment, respondents felt that their communities had benefited from the project in other ways. Other than general economic benefits, they felt that the project had created increased business opportunities for local communities in providing supplies and services to the site. When asked in a separate question, the majority of people (64%) believed that local businesses had been given a fair opportunity to participate in the project. There were differences in perceptions throughout the area, however. Adjacent communities were much more likely to feel this way than the other two zones.

A number of those surveyed, also mentioned contributions that the proponent had made directly to individuals and groups in their communities. Specifically, they mentioned contributions such as charitable donations and the access to the on-site recreational facilities given to local schools. HMDC's fisheries compensation program was also considered a positive aspect of the project. Under the program, local fishers were given incentives to fish harder and, consequently, incomes in the area were significantly higher than they had been previously, at least until the moratorium (Storey 1995).

5.3.2.3 Negative Effects

As with benefits, the negative effects expected to accompany this project did not occur to the extent anticipated in the earlier research phases. Though an increase in crime was expected to accompany the project, it was not mentioned as a negative effect during this survey (Table 5.35). As shown later, survey respondents were less likely to have been the victim of crime in the year prior to 1996 and were even less likely to perceive crime as a community problem than in 1985 or 1992.

One consequence of development that respondents felt had occurred was an increase in the cost of living. In particular, they perceived that the cost of housing in local communities had increased as a result of the project. This too is contradictory to later assessments of community issues which show the cost of living as being less problematic in 1996 than it had been before the start of the project. There was evidence that the

Table 5.35**NEGATIVE EFFECTS OF THE HIBERNIA
CONSTRUCTION PROJECT TO NOW (1992 & 1996)**

Negative Effect	1992	1996
Increased cost of living	34.5	42.2
Unfair hiring practices	17.2	17.8
Increased housing costs	10.3	10.0
Effects of slow-down	17.2	0.0
Disruption of fishery	10.3	4.4
Effects on unemployed	3.4	0.0
Resentment in/among communities	0.0	21.1
People moving in	0.0	11.1
Family break-ups	0.0	8.9
Effects on the environment	0.0	5.6
Businesses closing	0.0	5.6
Other	20.7	13.3

project had created pressure on the rental market and increased rental costs but this turned out to be only a short-term problem (CRS Ltd. 1995).

More a reflection on project management than an effect on local communities, was the perception that there were unfair hiring practices on behalf of the contractors. Unfair hiring practices was raised by similar portions of respondents in both 1992 and 1996. Respondents had gone beyond simply blaming the labour agreement for reducing local employment opportunities. They felt that even those who were qualified and held an appropriate union membership were not given a fair opportunity to work on the project. As in the previous survey, there were reports of nepotism and general disregard for the project's intended labour agreement. The local perception was that getting a project job depended less on union membership than on who you knew at the site. This was further confirmed by a study on women working at the Hibernia construction site conducted by Women in Trades and Technology, in conjunction with Community Resource Services Ltd. (WITT 1996).

As in 1992, respondents at this point in the study were less likely to feel that there had been any disruption of the local fishery. As reported earlier, the fisheries compensation program that had been developed by the proponent to cover income losses during the construction period was, in fact, perceived as a benefit of the project. Previous concerns over impacts on the local inshore fishery were significantly reduced by HMDC's

generous compensation program but when the groundfish moratorium came into effect in mid-1992, there was no longer a fishery to be affected and, therefore, no need for compensation. Long-term effects on traditional fishing grounds will not be known until long after the Trinity Bay groundfishery resumes.

Respondents in 1996, reported a number of unexpected consequences that arose as the project evolved. One such problem was the increasing resentment in and among local communities. The resentment stemmed from perceptions of the unfair distribution of employment and other economic opportunities to individuals and communities throughout the region. In terms of employment, there was no significant difference in the number of people employed from each region, but the Adjacent region perceived that it had received more jobs. The Adjacent region also felt that it had benefited more from spin-off business opportunities than either of the others.

A second unexpected consequence of this development was the perceived increased incidence of family break-ups. While most of the accounts were hearsay, two male respondents described their own experience of losing their wife to a man from the site.

Attitudes toward community newcomers changed dramatically over the course of the project. While in the pre-development survey, respondents were looking forward to new

people moving into their communities, as the project evolved. in-migrants were equated with lost job opportunities for local people.

With the economic aspects proven to be less favourable than anticipated, survey respondents were more apt to mention the negative social aspects. In 1996, there was even a slight tendency to show concern for perceived environmental effects that the project had had on the area.

5.3.3 EXPECTATIONS AFTER PROJECT IS COMPLETED

When the final survey was being conducted, there were only a few months of GBS construction activity remaining. As shown in Tables 5.36 and 5.37, for the first time, the percentage of respondents expecting negative effects from the project was higher than those expecting benefits.

Bearing in mind the stage of the project, their expectations about specific benefits were also much lower (Table 5.38). Of those who still expected benefits, considerably fewer felt that there would be employment opportunities for local people, particularly, employment for themselves or members of their household. Business opportunities and people moving into the area were rarely mentioned at this point, and municipal services, economic benefits, or community growth and development were no longer seen as possible outcomes.

Table 5.36

**ANY POTENTIAL BENEFITS OF THE
HIBERNIA CONSTRUCTION PROJECT? (1985, 1992 & 1996)**

Response	1985 (%)	1992 (%)	1996 (%)
Yes	83.2	78.5	20.1
No	11.7	16.9	51.9
Don't know	5.1	4.6	28.0

Table 5.37

**ANY POTENTIAL NEGATIVE EFFECTS OF THE
HIBERNIA CONSTRUCTION PROJECT? (1985, 1992 & 1996)**

Response	1985 (%)	1992 (%)	1996 (%)
Yes	36.7	28.5	32.4
No	46.3	55.4	51.6
Don't know	16.9	16.2	15.9

Table 5.38**POTENTIAL BENEFITS OF THE
HIBERNIA CONSTRUCTION PROJECT (1985, 1992 & 1996)**

Benefit	1985 (%)	1992 (%)	1996 (%)
Employment in general	88.7	67.7	40.0
More municipal services	43.0	0.0	0.0
More people moving in	33.9	13.7	2.8
Employment for self/ family	22.9	14.7	7.1
Economic benefits	3.8	16.7	0.0
Business opportunities	2.7	28.4	4.3
Community growth/ development	1.8	8.8	0.0
Use site for future projects	0.0	0.0	32.9
Use facilities after project finishes (pool, etc.)	0.0	0.0	10.0
Training used for future employment	0.0	0.0	7.1
Other	3.2	6.9	1.4

There were, however, a number of future benefits given that were not mentioned in previous surveys. From an economic standpoint, they expected that the Bull Arm site could be used for similar projects in the future. They also believed that the training local people had received through working on this project would be helpful for them in securing future employment, either on future Bull Arm projects or similar projects elsewhere.

Others saw the abandoned site as a source of much needed recreational facilities for the area. After the project is finished, they expected that local communities would have access to the swimming pool and other recreational facilities, if those facilities remained intact.

Nearly all of the negative effects expected by respondents in the two previous surveys, do not exist in the 1996 results (Table 5.39). At this stage in the development, respondents were more likely to mention environment-related concerns as the Hibernia project moved from the construction to the production phase.

Most negative effects associated with the project from this point forward, however, were related to the actual winding down of the activities at Bull Arm. Respondents were most concerned that local people, now working at the site, would soon lose their jobs and have to adjust to a much lower rate of pay in other jobs or leave the area to find comparable

Table 5.39**POTENTIAL NEGATIVE EFFECTS OF THE
HIBERNIA CONSTRUCTION PROJECT (1985, 1992 & 1996)**

Negative Effect	1985 (%)	1992 (%)	1996 (%)
Increased crime	51.2	51.4	2.6
Increased cost of living	33.8	16.2	2.6
Disruption of fishery	27.7	10.8	0.0
Increased housing costs	15.5	0.0	0.0
Overcrowded schools	9.2	0.0	0.0
Oil spills/pollution	6.2	2.7	5.2
People moving in	5.1	29.7	0.0
Alcohol/drug abuse	1.5	5.4	0.0
Low-income people will suffer	0.0	5.4	0.0
Unemployment/adjustment to lower incomes	0.0	0.0	43.8
Out-migration	0.0	0.0	17.5
Business losses	0.0	0.0	7.0
Locals won't get jobs	0.0	0.0	4.4
Other	6.5	16.2	13.1

work. They also mentioned that the completion of the project would result in losses to businesses that had been involved in project-related activities. A small percentage was concerned that local jobs would not be carried over to the production phase, and that local people still would not get jobs if there was a similar project at the site in the future.

Despite the fact that they had not received the anticipated level of benefits, (Table 5.40) the vast majority of respondents (93.8%) felt that the project was a good idea overall and 97.3% would welcome similar developments to their area in the future. Most qualified this by saying “If things are done differently”.

5.3.4 COMMUNITY SATISFACTION AND QUALITY OF LIFE

The experience of hosting the Hibernia construction project had amounted to something of an anticlimax given the high expectations local communities had originally had of this development. During the final year of construction, survey respondents were less likely to perceive that their communities had benefited from the project than they had during the site-preparation phase. Indicators of community satisfaction and quality of life, at this stage in the development, reflected respondents’ moods as they looked forward to readjusting to life without the project.

Table 5.40

**WAS THE HIBERNIA CONSTRUCTION PROJECT
A GOOD IDEA, OVERALL? (1985, 1992 & 1996)**

Response	1985 (%)	1992 (%)	1996 (%)
Yes	96.0	93.8	93.8
No	0.6	0.8	2.7
Uncertain	3.4	5.4	3.5

5.3.4.1 Social and Economic Problem Issues

As in the two previous research phases, unemployment and recreation for young people were still considered to be the most problematic of the 13 issues (Table 5.41). Ratings of unemployment as a problem, however, had declined steadily across survey points, which reflects respondents' perceptions that the project had resulted in at least some local employment opportunities.

Recreation was also considered to be less of a problem in 1996 than in the pre-development survey. In addition to improvements to some outdoor sports arenas in the area, there were accounts of local schools and communities having access to the swimming pool and other recreation facilities at the construction site.

Some problems that were expected to accompany the project, such as crime, increased cost of living, increased housing costs and alcohol and drug abuse were not apparent from respondent ratings of these issues in 1996. In fact, these issues were considered to be less problematic at this point than in 1985, before the project began. Crime, which was most likely expected to be associated with the development, was not considered to be a problem at all. Just over two percent of respondents had experienced crime in the year before the survey, which is lower than the crime rate reported in the two previous surveys. It is interesting that neither the cost of living nor housing are considered to be problems

Table 5.41**RANK ORDER DISTRIBUTION
OF PROBLEM ISSUES (1985, 1992 & 1996)**

Issue	Mean Rating		
	1985	1992	1996
Recreation for young people	4.17	3.61	3.64
Unemployment	4.10	3.93	3.80
Cost of living	3.93	3.55	3.43
Services for the disabled	3.36	3.46	3.50
Daycare services	3.26	3.25	3.60
Alcohol/drug abuse	3.20	2.99	2.87
Services for senior citizens	3.13	3.14	3.29
Housing	2.89	2.89	2.67
Health services	2.85	3.02	2.99
Education services	2.72	2.85	3.00
Transportation	2.67	2.52	2.61
Vandalism	2.55	2.54	2.19
Crime	2.40	2.32	2.01

since those are the two negative effects respondents were most likely to say had resulted from the project.

Other issues were seen as being more problematic in 1996 but were more likely to reflect general social change than to be effects of hosting the Hibernia construction project.

Those issues were services for the disabled, daycare services, services for senior citizens, education services.

Mean ratings of issues were significantly different among the three zones of the study area. Issues like crime, vandalism, and alcohol and drug abuse appeared to be more problematic in the Adjacent and Southeast zones, but average ratings were not high enough to be considered problems. Community services like daycare, health, recreation, and services for disabled, were considered more problematic in the Northwest region. These variations in responses throughout the region were similar to findings in the two previous research phases so were assumed to be unrelated to the construction project.

5.3.4.2 Quality of Life Indicators

As shown in Table 5.42, all statements included in the sociability dimension received higher mean ratings by respondents in 1996, than in the two previous survey points. Contrary to the literature, the communities along the Isthmus of Avalon showed signs of *increased* social interaction while hosting a large-scale development.

Table 5.42**SOCIABILITY (1985, 1992 & 1996)**

Element (polarity)	Mean Rating		
	1985	1992	1996
People friendly and cooperative (+)	3.90	3.94	4.07
Good place to raise children (+)	3.79	3.82	4.04
Know few people (-)	3.91	3.80	4.20
Sense of belonging (+)	3.79	3.63	3.80
Seldom visit neighbours (-)	3.10	3.29	3.65
Dimension Average	3.70	3.70	3.95

Controlling for length of residence, however, there were significant differences in ratings of statements by long and short-term residents. Long-time residents rated four of the five statements significantly higher on average than those who had lived in the area only within the six years the project had been under way. So, while social interaction among local residents had improved, they appear to have been reluctant to interact with people who had moved to the area to work on the project.

Feelings of economic security had peaked in 1992 during the early stage of the development but fallen again in 1996 in light of the wind-down in project activities (Table 5.43). Not surprisingly, with no other projects on the immediate horizon, respondents were less likely to suggest the area was full of promise for the future. The overall dimension average was actually lower than it had been during the pre-development survey, although respondents tended to be more satisfied with their standard of living at this point and were slightly less likely to want to move from the area.

Political efficacy also peaked in 1992 but, by this point, had returned to the same level as before the development began (Table 5.44). Respondents to the 1996 survey were more likely to see the value in expressing their opinions but still felt that their involvement had little affect on the outcome of decisions.

Table 5.43**ECONOMIC SECURITY (1985, 1992 & 1996)**

Element (polarity)	Mean Rating		
	1985	1992	1996
Satisfied with standard of living (+)	3.22	3.59	3.48
Would move from area (-)	3.36	3.52	3.44
Area full of promise (+)	3.22	3.26	2.82
Worry about meeting living expenses (-)	2.78	2.57	2.49
Dimension Average	3.15	3.24	3.06

Table 5.44**POLITICAL EFFICACY (1985, 1992 & 1996)**

Element (polarity)	Mean Rating		
	1985	1992	1996
No sense expressing opinions (-)	3.03	3.19	3.14
People have a lot of say over decisions (+)	3.03	2.94	2.91
Dimension Average	3.03	3.07	3.03

In spite of the increased crime rate that local residents had predicted would accompany this development, survey results indicated a continued improvement in personal security over the construction period (Table 5.45). In 1996, respondents were particularly less likely to feel the need to lock their doors at night.

As shown in Table 5.46, average ratings of both the sociability and personal security dimensions were higher than the two previous survey points, while perceptions of economic security and political efficacy had fallen to average values equivalent to or below pre-development dimension averages. In terms of the sociability and personal security dimensions in particular, survey results were contradictory to local community's earlier fears of hosting a large-scale development project.

5.3.5 WIND-DOWN SUMMARY

In general, attitudes had remained favourable throughout all stages of the construction project. While not to the extent expected, residents perceived that the project had resulted in some benefits to the area, particularly through employment of local people and spin-offs to local businesses that provided supplies and services to the work camp and construction site. They also felt that the project had provided the area with a more highly skilled local labour force, which would be to their advantage in attracting other developments or in making their residents better equipped to find employment elsewhere.

Table 5.45**PERSONAL SECURITY (1985, 1992 & 1996)**

Element (polarity)	Mean Rating		
	1985	1992	1996
People are under stress (-)	3.08	3.02	3.10
Necessary to lock doors at night (-)	2.69	2.77	3.18
Take precautions to prevent theft (-)	2.46	2.69	2.64
Dimension Average	2.74	2.83	2.97

Table 5.46**RANK ORDER DISTRIBUTION OF
QUALITY OF LIFE DIMENSIONS (1985, 1992 & 1996)**

Dimension	Mean Rating		
	1985	1992	1996
Sociability	3.70	3.70	3.95
Economic security	3.15	3.24	3.06
Political efficacy	3.03	3.07	3.03
Personal security	2.74	2.83	2.97

Communities in the Adjacent region of the study area, as expected, felt that they had received most of the benefits associated with the project. Despite this perception, there was no evidence that the communities in this region had, in fact, obtained a significantly higher percentage of project jobs than either the Northwest or Southeast regions. There was also no significant difference in the types of benefits each region perceived to have occurred in their respective communities. From a local perspective, however, the actual count of people working at the site was higher in the Adjacent communities, which may have led to the perception of greater benefit going to that region.

Adjacent communities were also more likely to perceive that they had been subjected to negative consequences of the development. Again, there was no significant difference in the types or proportion of responses given for each region.

As discussed earlier in relation to the results of Phase II, certain management decisions had undoubtedly affected the development's overall impact. In particular, the decision to house project employees in a fully-serviced on-site workcamp, virtually eliminated the pressure that would have otherwise been placed on local communities to accommodate those people. Other than accommodations and dining facilities, the camp provided banking, shopping, recreation and health care services. Apart from some worker's visits to the local bar in Arnold's Cove, the workcamp ensured that there was minimal

interaction between the project and local communities throughout the construction period.

By Phase III of the research, some community residents, specifically business owners, were starting to second-guess the workcamp decision. With few local people being employed on the project and all necessary services being available on site, “project money” was not being spent in local communities. Had the workcamp provided fewer services, some respondents suggested that workers would have spent more time and money in local communities availing of the services provided there.

CHAPTER 6

CONCLUSION

Rarely have social impact studies had the benefit of pre-development data to examine community change over time. The study initiated by Fuchs and Cake in 1985 was meant to be a longitudinal study of changing community response to offshore oil development in Newfoundland and Labrador, but because of subsequent delays in development caused by falling world oil prices and ongoing fiscal negotiations between the Hibernia proponent and government, the study was put on hold. When the Hibernia Development Project was finally approved in 1990, the Newfoundland and Labrador Petroleum Directorate was defunct and those involved in the study had moved on to other pursuits. Consequently, no formal commitments had been made to continue the study. This study represents the continuation of that research initiative.

Ideally, given unlimited resources, all phases of the study could have followed the original research plan, which was to attempt a census of all households in the study area at different stages throughout the life of the construction project. However, given the limited time and resources that were available, only a sample of community residents could be surveyed during the two subsequent research phases. Statistically, however, there was little difference in the selected samples and the actual adult population of the

study area near each of the survey points. Based on media accounts, other reports of project impacts, and verbal accounts from community residents, the survey results presented in this thesis are considered to be representative of the feelings of residents within the study's communities.

This concluding chapter describes the degree to which survey results either support or refute the stated hypotheses and the contribution of the results toward current concepts in social science research, particularly in terms of a longitudinal research perspective, spatial variation in attitudes and perceptions, and the determinants of community response to large-scale development. The chapter ends with a discussion of the implications of the research findings for environmental assessment in Canada, specifically its limitations regarding follow-up monitoring and impact management programs.

6.1 Community Response to the Hibernia Construction Project

Fuchs and Cake had hypothesised that a positive experience with previous large-scale development, a positive attitude toward future large-scale development and positive perceptions of political efficacy, would all contribute to a positive response to the then *proposed* oil-related construction project (Hypothesis 1).

Prior to the Hibernia construction project, communities in the area had had considerable experience with large-scale development with the Come By Chance Oil Refinery and, less

directly, through the ERCO phosphorus plant at Long Harbour. While these projects were in operation, they brought considerable economic benefit to their respective areas, particularly in the form of high paying jobs for residents of nearby communities. Respondents to the 1985 survey were also overwhelmingly positive toward the possibility of hosting the proposed oil-related construction project. They were familiar with social and economic change and they welcomed more of it.

In terms of political efficacy, however, local communities rated negatively based on responses to the initial survey. Respondents were divided on the degree to which they felt able to individually influence decisions affecting their communities. Fuchs and Cake (1986) viewed the perceived lack of political efficacy as a relative liability in dealing with the prospective project.

Respondents to the initial survey, therefore, possessed two of the three characteristics that Fuchs and Cake (1986) felt would contribute to a positive response to the Hibernia construction project. The respondents' positive attitudes toward the proposed development, however, were largely based on unrealistic expectations about the potential economic benefits that would accompany the project. In particular, they were interested in the anticipated employment opportunities for local people. However, given the skill levels of the local labour force and the skill levels required for GBS construction work, it was clear from the very beginning that local employment expectations would not be met.

While local people were much more likely to expect that there would be benefits associated with the project, there were some who feared that the project might also be accompanied by negative effects. Most notable was the fear that there would be an increase in the crime rate in local communities. Some also expected that the higher paying jobs associated with the project might drive up the cost of living, while others feared that the construction would interfere with the local fishery by limiting access to traditional fishing grounds and luring skilled employees away from the fish processing industry.

When surveyed seven years later, 18 months into the site-preparation phase, local people felt that they had not benefited to the extent originally expected, nor had they experienced the negative effects they feared before the project started. While they agreed that some local people were successful in getting project jobs, the potential for local employment was severely limited by the government's decision to use a unionized work force. In terms of negative impacts, the increase in crime had not happened up to the site-preparation and, because of the change in construction site and the subsequent groundfish moratorium, neither had the disruption of the fishery. There were perceptions that the cost of living had increased as a consequence of the project, but most often mentioned were the high rents charged to project workers who were temporarily living in local communities, rather than cost increases for long-time residents of local communities.

As the four-year construction stage of the project was winding down, respondents to the final survey felt that they had benefited more than they had up to the site preparation, but still not to the extent that was expected prior to the start of the project. They were also slightly more likely to feel that the project had resulted in negative effects up to this stage in the project. Again, cost of living was perceived as the greatest negative effect but as in the previous research phase there were no hard data available to substantiate those perceptions. Negative impacts that had not been mentioned up to the site-preparation phase, such as resentment in and among communities, people moving in and family break-ups were perceived to occurred since then. At this point, concerns had understandably shifted to the end of the project and the potential benefits of using the site for other similar projects in the future, which were perceived as being substantially fewer than benefits from the platform construction. Respondents were also concerned about the negative effects on local individuals and communities as those who were lucky enough to work on the project were laid off from their high paying jobs.

In the end, it appears that the project came and went with little notice paid to it by residents of the area. There was a lot of “hype” in the beginning because of what people thought was going to happen, however, most of the anticipated benefits and negative effects did not materialize.

Since the completion of the Hibernia construction project, the study area has played host to two other developments related to Newfoundland and Labrador's offshore oil industry. Both the construction and operation of an oil transshipment terminal near the Come By Chance Oil Refinery and the building of platform components for the Petro-Canada Terra Nova Project at the Bull Arm site have gone ahead without any real concerns being voiced by local residents. The lack of local reaction to those projects is further evidence of the importance of experience in determining attitudes toward development.

As suggested in Hypothesis 2, attitudes toward the project had remained favourable throughout each of the research phases. Although the area had not received the level of benefits anticipated during the pre-development phase, survey respondents were of the opinion that if a few local people were able to get jobs and local businesses were able to benefit from the project, then it had been worthwhile. People had become less optimistic over time, as they realized that they would not be receiving the anticipated number of employment opportunities, but had remained positive nonetheless. During the final survey, after considering the benefits and negative effects that they had experienced, nearly 94% of respondents said that it had been a good idea to locate the construction project in their area. Even more (97.3%) said they would welcome similar projects in the future.

The research results also supported Hypothesis 3, in that the perceptions of positive and negative consequences of the development became more focussed as local residents gained experience with the construction project. During the pre-development survey in 1985, respondents expected to benefit mainly from increased employment opportunities for themselves and their communities, more municipal services, and more people moving into the area. During the second survey, when the project's site preparation was under way, respondents' expectations for local employment were significantly lower and attention had shifted toward potential business opportunities and economic benefits in general. At that point, the prospect of improved municipal services had disappeared altogether, while people moving into the area had shifted from being a potential benefit of the project to a potential negative effect. Many of the negative effects expected during the initial survey were of much less concern by the site-preparation phase, while others had been eliminated as potential impacts, the only exception being crime. Crime was as likely to be considered a potential impact during the site-preparation as it had been in the previous research phase, in spite of the fact that there had been no indication of increased crime up to that point in the development. It appears as though residents were disposed to believing that the project would be accompanied by an increase in criminal behaviour in their communities, regardless of their experience or how much information they had to the contrary. By the final research phase, respondents' interests were focussed on "life after the project" and the hope of attracting similar projects to the Bull Arm site in the future.

As the project evolved, perceptions of benefits and negative effects had indeed become more focussed, but respondents were still no better at knowing what to expect in the future. During each of the research phases, the majority of respondents indicated that they did not feel well enough informed to judge the potential benefits and negative effects of the project, but how much information would have been enough? In addition to the regular media coverage, there were project newsletters, the construction site's information centre, as well as community meetings, which reportedly had declining attendance over time. It is questionable whether any amount of information could have adequately prepared the general public to judge the potential consequences of this type of project. If environmental impact practitioners, with their scientific methods and teams of experts, are unable to accurately predict the impacts of large-scale projects, then it is unlikely that rural community residents would be able to do better. For them, the potential benefits were primarily the things that they would *most* like to have seen happen and the potential negative effects, what they would *least* like to have seen happen.

While a project like the Hibernia concrete platform construction has regional, national and global implications, its spatial dynamics can be illustrated even with the relatively small area included in this study. As expected in Hypothesis 4, communities closest to the site (the Adjacent region) were more likely to perceive that they had received both benefits and negative effects from the project up to site-preparation stage and beyond. As stated earlier, there was no evidence that those communities had obtained a significantly

higher percentage of project jobs than either the Northwest or Southeast regions. In terms of the actual number of jobs, more had gone to the Adjacent area but the difference was not significant when considered on a per capita basis, in either 1992 or 1996. The Adjacent communities were also more likely to indicate that local businesses had been given a fair opportunity to participate in the project and to say that their community had, in fact, benefited from business spin-offs. These results illustrate the difference between the subjective and the objective interpretation of impacts associated with large-scale development, as discussed in Section 2.3. The impacts associated with development have little meaning without the subjective interpretation of those impacts by community residents. The fact that residents of Adjacent communities believed that they had received more benefits and negative effects from the Hibernia construction project, made it a reality for them. To those affected, it is impossible to distinguish between impacts that are real and those that are simply perceived and, as such, both interpretations should be considered in the development of impact management strategies.

While enthusiasm dwindled over time, it is important to keep in mind that respondents at all three research phases felt that the benefits of the project far outweighed any negative effects. Perhaps they had not received the benefits to the extent they had originally expected, but the majority of survey respondents felt that their communities had received employment and some business opportunities up to the site-preparation phase, and even more business opportunities by the final research phase. Along with the few benefits

enjoyed by local communities, there was a general absence of negative effects. As forecast by Fuchs and Cake (1986), the general sentiment in communities surrounding the Bull Arm site as the construction project drew to a close was that it “was good while it lasted but could have been a lot better.”

6.2 Contribution to Social Science Literature

Fuchs and Cake (1986) had stated that community characteristics are at least as important as project characteristics in determining community response to large-scale development. In the case of the Hibernia construction project, project characteristics were more likely the dominant factors in determining the response of communities in the study area. While it was true that communities in the area had positive experiences with large-scale development in the past and were positive toward this development, the final decisions about the location of the construction site, the on-site work camp and the union labour agreement were ultimately the determining factors in how the project affected the area.

Another factor that played an important role in determining community response to the Hibernia construction project was the long delay between each of the stages. The Hibernia oil field was discovered in 1979, but it was not until six years later that the environmental assessment was completed and it was then another five years before site preparation for the construction phase of the development began. During those 11 years,

local people became tired of waiting for the promised prosperity and generally grew apathetic toward the development. In boomtowns throughout North America, the social disruption described in the literature generally resulted from the *rapid* community change that accompanied these developments. This was not the case in communities affected by the Hibernia construction project. The eleven-year wait undoubtedly reduced expectations that the project would bring significant prosperity to the area. The lengthy delays gave local people ample time to reflect on the project, to temper their expectations and to be less caught up in the “hype” that usually accompanies rapid growth.

When compared to previous empirical analyses, the case of the Hibernia construction was similar in that local people had not received the level of employment expected, but there was clearly no evidence of the social disruption experienced in other areas affected by large-scale development. There were no reports of increased crime, in fact, perceptions of crime and vandalism as problem issues decreased over time. There was no evidence that alcohol and drug abuse had become problematic, its mean rating had also decreased over time. Even issues that were considered problematic before the project started, such as recreation for young people and, of course, unemployment, were thought to be less so across consecutive research phases. Similarly, the cost of living, which was perceived as a problem during the initial survey and was perceived by some to have increased as a result of the project, was perceived as less problematic over time.

As for the quality of life dimensions, ratings of sociability, for instance, actually increased over the life of the construction project, contrary to the accounts of decreased density of acquaintanceship described in other social impact research. There were, however, indications of resentment toward people who had moved into the area at some point during the project, not because they had had a particularly negative effect on local communities, but because they were perceived as filling jobs that otherwise might have gone to local people.

In support of current concepts in social impact research, the study results clearly demonstrate the change in attitudes and perceptions, and consequently impacts, over time and in space.

6.2.1 LONGITUDINAL RESEARCH

Until this research, there were only one or two studies reported in the literature that had the benefit of pre-development data, and were therefore able to provide a longitudinal analysis of changing attitudes and perceptions. Freudenburg and Gramling's (1990) pre-development or "opportunity-threat" concept is illustrated when attitudes and perceptions of Phase I of this study are compared with the two subsequent research phases. In communities affected by the Hibernia construction project, the potential "opportunities" described during the pre-development phase included employment for the area in general, employment for the respondent and his/her family members, more

municipal services, people moving into the area, economic benefits and business opportunities, in that order. The potential “threats” were increased crime, increased cost of living, disruption of the fishery, increased housing costs, overcrowded schools, pollution, people moving into the area and alcohol and drug abuse. With the exceptions of employment and crime, by the second and third research phases, most of those opportunities and threats had become less important to survey respondents or had disappeared altogether and been replaced by others. Those opportunities and threats, as defined by local communities during the pre-development stage, are what they were responding to during the planning stages of the development and throughout the review process.

Local residents’ pre-development expectations were based largely on their experience with other large-scale developments in their area, particularly their expectations for employment. With both the Come By Chance Refinery and the ERCO phosphorus plant, the majority of workers came from within commuting distance of the site. In the case of the GBS construction, the skill levels required for project work and the special labour agreement, prevented history from being repeated.

Had there not been a pre-development baseline of attitudes and perceptions with which to make comparisons, it would have appeared in the site-preparation survey that local people had a very clear sense of priorities in relation to this project, those being employment, in

general, and business opportunities. The results would not have shown that those priorities had evolved from a longer list of anticipated benefits (employment, in general, improved municipal services, increased population, and employment for self/family, etc.), which could only have been refined with increased experience with the project. The results of each research phase, if viewed in isolation, would have given an entirely different view of community response to the Hibernia construction project.

6.2.2 SPATIAL VARIATION IN ATTITUDES AND PERCEPTIONS

The impacts of the Hibernia Development Project can be assessed locally, provincially, nationally or even globally. From a social and economic perspective, this project has potential benefits at all four of those scales (employment opportunities, skill development, future oil production), but from a purely social perspective, the costs of the project, which in this case happen to be few, were borne locally by the communities hosting the construction phase of the project (perceived increased cost of living, resentment in and among communities, people moving in, family break-ups). Whether they are real or perceived, those concerns would not have been expressed in communities 100 kilometres from the construction site. As discussed earlier, the difference in attitudes and perceptions were also seen at the micro level, that is, in and among the 10 communities included in the study area.

In determining potential impact areas relative to large-scale projects, both researchers and project proponents often consider arbitrary concentric circles at various distances from the project site to show degrees of impact. For instance, a radius of 50 kilometres may signify an immediate impact area, where project effects are expected to be most significant; another circle of 51-100 kilometres would represent an area of secondary significance; and so on. The results of this research suggest that potential impact areas are more a function of the subjective interpretation of project effects than simply a function of physical distance from the site. In this case, communities closest to the construction site (Adjacent) were more likely to perceive both positive and negative effects of the project. As stated earlier, the beliefs held by the individual need not, in fact, be true. What is important is that he/she believes them to be true (Schiff 1971).

Previous social and economic impact studies have alluded to the concept of spatial variation in impacts, but few have looked at the concept in any detail. The current study would have benefited from a larger study area to examine this concept more directly. Proximity to the project site should be further explored as a determinant of community impacts by undertaking studies of attitudes and perceptions at varying distances from the development site.

6.2.3 DETERMINANTS OF COMMUNITY RESPONSE TO LARGE-SCALE DEVELOPMENT

Previous studies of large-scale development in rural communities blamed the predominately negative effects on the rapid population change that often accompanied these projects. Fuchs and Cake (1986) stated that community characteristics are at least as important as project characteristics in determining response to large-scale development. More recent studies contend that it is the extent and timing of impacts that is called into question. This study shows that impacts can change over time and space, and that both community and project characteristics, including management decisions, are important in determining the types of impacts that are likely to occur and how communities are likely to respond to those impacts. The communities surrounding the Bull Arm construction site perceived that they had benefited from the project, although not to the extent expected. However, they exhibited none of the signs of social disruption described during the construction-development phases of other large-scale developments. Community characteristics (previous experience with development, involvement in the fishing industry) and project characteristics (required skill levels, need to avoid labour disputes, delays), including management decisions (special project designation, on-site work camp) were all factors in determining the social and economic impacts of this development. The absence of one or more of those characteristics could have resulted in a significantly different picture. For instance, without the labour agreement and on-site work camp, interaction between the project and local communities would likely have been quite different from what communities had actually experienced.

Once again, the element of time in relation to the Hibernia construction project has to be considered. The Hibernia Development Project is atypical among developments of this type. While other impact areas have experienced a “boom” of activity at the start of a project, there was no boom in this case, the project was very slow to get underway. While it might be argued that because of the time lag between different stages of the Hibernia construction project, the experience cannot be generalized to other project impact areas. On the other hand, since all projects consist of basically the same set of steps and stages, this case has provided a chance to observe a project unfold in “slow-motion” and to examine community response to management decisions. The delays have perhaps allowed the communities to more easily adjust to the project and adapt slowly to any changes that may have occurred, but the nature of the project and management decisions were still very important in determining impacts. The required skill levels for the construction project and the “special project” designation still minimized local employment and curbed speculative migration, the fully-serviced on-site work camp minimized project-community interaction, and so on. While those particular management strategies may not be necessary in other settings, having observed their effects in relation to the Hibernia construction project will surely be of benefit to future project decision-makers.

The results of this study demonstrate the need to go beyond empirical analysis in socio-economic impact research, that is, to move away from simply describing the impacts that

accompany large-scale projects, toward determining why those impacts occur. Without a better understanding of the determinants of impacts, experience with one project cannot be transmitted to others in the future.

6.3 Implications for EA in Canada

Just as the Hibernia project has evolved over the past decade and a half, so has Canada's environmental assessment process. When the Hibernia Development Project was referred for review in 1980, it was assessed under the Environmental Assessment and Review Process (EARP). The Canadian Environmental Assessment Act (CEAA), which was the result of more than a decade of EARP reform, was in place by the time the Hibernia construction project was completed.

Environmental assessment in Canada has focussed primarily on making a decision about whether or not a proposed activity should proceed. There has been a general absence of follow-up programs to test the effectiveness of the process. Without ongoing study and evaluation, there is no way of knowing what happens once the project gets under way, that is, whether impact predictions were accurate, whether the mitigative measures identified were adequate, or whether there were other impacts that were not anticipated in the assessment process. CEAA claims to have improved upon the old process by including provisions for the design and implementation of follow-up monitoring programs. Even with an improved assessment process, however, predictions may never

be completely accurate. What is important is that impact management strategies are able to accommodate a certain degree of error without compromising their goals. In the case of the Hibernia construction project, for instance, most of the predictions about time lines and employment numbers were inaccurate. However, even by doubling the workforce to make up for the delays, there were minimal community disruptions since most of the extra workers were able to be accommodated by expanding the on-site work camp.

CEAA's definition of follow-up programs is also limited by its focus on the environmental effects of development. A follow-up program is described as one that verifies the accuracy of the environmental assessment of a project, and determines the effectiveness of any measures taken to mitigate any adverse environmental effects. The only effects on the human environment referred to are those arising out of the environmental effects of the project. Throughout this study, however, residents of communities affected by the Hibernia construction project were concerned primarily with employment benefits and business spin-offs, and negatively, with crime and increased cost of living, few of which stem from environmental effects of the project. It is important, therefore, that the EA process and follow-up programs, in particular, pay equal attention to both the environmental and socio-economic aspects of development.

The effectiveness of CEAA's participant funding program also depends on the information from follow-up programs. In order to be effective participants in the

decision-making process, however, local residents must be educated about the likely implications of a proposed project. In general, community residents are not well enough informed about the details of a project or about the environmental assessment process to effectively participate in a public involvement program. In the case of the Hibernia construction, community residents did not feel well informed at any stage in the project to judge its potential advantages and disadvantages, even when the project was about to end. The public will depend upon the proponent to inform them of the likely implications of a project, but in many cases, the proponent may not be aware of the impacts, or in some cases may be unwilling to share what they do know. Proponents need to learn from other projects so that they, in turn, can educate the public of their respective host communities.

A well educated public could minimize some of the pre-development opportunity-threat impacts referred to by Freudenburg and Gramling (1990). Those impacts are caused by communities efforts to define and respond to the likely implications of a proposed development. Residents in communities affected by large-scale development, including those in the current study area, respond to what they believe will occur. Information from previous follow-up programs could improve their definition process, and reduce the significance of some of those opportunity-threat impacts.

In the end, different areas will respond differently to similar projects, but without some knowledge of impacts that have occurred elsewhere, the proponent, government and the

local public is left to make their own judgements about the potential impacts of a proposed project. While much depends on what management strategy the proponent chooses to use, there should be some lessons that can be learned from previous experiences.

Canada has perhaps already made an important step toward further improvement of the environmental assessment process and the prediction of impacts by including provisions for follow-up programs. What is important from this point forward is that the objectives of managing those potential impacts are realised.

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APPENDIX A

Phase I (1985) Research Instrument

TRINITY PLACENTIA DEVELOPMENT ASSOCIATION Col.
 COMMUNITY PROFILE HOUSEHOLD SURVEY REFUSAL No.
 COMMUNITY: _____ DATE: _____ NOT HOME 1
 INTERVIEWER: _____ TIME IN: _____ CALL BACK 2
 HSEHLD NO. _____ TIME OUT: _____ CALL BACK 3 2-7
 8-10

Hello, my name is _____ and I am working with the Trinity Placentia Development Association to do a profile of all of the communities in our area. We are doing a survey of every household in the area to try and learn more about how we can help to promote economic development. If you wouldn't mind sparing about twenty minutes, I would like to ask a few questions.

(Interview Household Head/Primary wage earner. If this person is not available interview his/her spouse.)

Person Interviewed: Household Head[1] Spouse[2] 11
 Sex: Male[1] Female[2] 12
 Marital Status: Single [1] Married [2] 13
 Divorced/Separated
 or Widowed [3]

1(a) Have you ever heard of the Trinity-Placentia Development Association? 14
 Yes[1] No[2]
 Unsure[3] No Response[9]

1(b) [If YES to 1(a)]
 Do you know who your community's representative is on the Board of Directors of the Trinity Placentia Development Association? 15
 Yes[1] No[2]
 Unsure[3] NR[9]

Name Given _____ 16
 Name Correct: Yes[1] No[2]

2(a) Are you familiar with any of the projects undertaken by the Trinity-Placentia Development Association? 17
 Yes[1] No[2]
 Unsure[3] NR[9]

(b) If YES, which projects are you familiar with? [Check () projects mentioned. Do not read list.]
 (a) _____ Yes[1] No[2] 18
 (b) _____ Yes[1] No[2] 19
 (c) _____ Yes[1] No[2] 20
 (d) _____ Yes[1] No[2] 21

3. Please tell me whether you think that the following are "problems" in this area. Indicate your opinion by telling me whether you (1)Strongly Agree (2)Agree (3)Have No Opinion (4)Disagree, or (5) Strongly Disagree that the following are problems in this area?

	Str Agr	No Agr	Opin	Dis	Str Dis	
UNEMPLOYMENT	1	2	3	4	5	22
COST OF LIVING	1	2	3	4	5	23
HOUSING	1	2	3	4	5	24
HEALTH SERVICES	1	2	3	4	5	25
EDUCATION SERVICES	1	2	3	4	5	26
CRIME	1	2	3	4	5	27

						Col. No.
VANDALISM	1	2	3	4	5	28
TRANSPORTATION	1	2	3	4	5	29
ALCOHOL/DRUG ABUSE	1	2	3	4	5	30
DAY CARE SERVICES	1	2	3	4	5	31
SERVICES FOR SENIOR CITIZENS	1	2	3	4	5	32
SERVICES FOR THE DISABLED	1	2	3	4	5	33
RECREATION FOR YOUNG PEOPLE	1	2	3	4	5	34

4. What do you think is the most important thing that should be done to improve the unemployment situation in our area?

- a) -----
 - b) -----
 - c) -----
 - d) -----
 - e) Don't Know
 - f) No Response
- 35

5. If you wanted to help improve conditions in our area what organization or group would you be most likely to go to for assistance?

- a) Community Council ----- 01
 - b) Union ----- 02
 - c) Church group ----- 03
 - d) Service Club ----- 04
 - e) Dev. Assn. ----- 05
 - f) Other ----- 06
 - g) Don't Know ----- 07
 - h) No Response ----- 09
- 36

6. Who would you say are the three most influential people for getting things accomplished in this community?

PERSON	Why?	
-----	-----	40
-----	-----	41
-----	-----	42

7. How many people live in this household? ----- No. (Including Respondent) 43

8. What are their ages and sexes?

Respondent	Males	Females	For Coding		
			# of Persons		
			M	F	
-----	-----	:	0-14	44	45
-----	-----	:	15-19	46	47
-----	-----	:	20-34	48	49
-----	-----	:	35-44	50	51
-----	-----	:	45-64	52	53
-----	-----	:	65+	54	55

9. Are there any people in this household who produce craft items? Yes[1] No[2] 56
If YES, what types of crafts are produced, and by how many persons?

Type of Craft	# of Producers	
-----	-----	57-58
-----	-----	59-60

10. If there was a retail store for crafts in this area would members of this household use it for:

- (a) Selling crafts? Yes[1] No[2] D.K.[3] Not Applicable[4] 61
- (b) Purchasing crafts? Yes[1] No[2] D.K.[3] Not Applicable[4] 62

Supplementary Oil Development Questions

Col.
No.

The Trinity-Placentia Development Association has agreed to participate with the Petroleum Directorate in asking the following optional questions respecting attitudes toward possible oil related activity in the Come By Chance area.

1. Do you feel that you have enough information about the possibility of oil related development which may affect the Come by Chance area to make a judgment on the possible advantages and disadvantages for people living in this area?

Yes[1] No[2] 1
Uncertain[3]

2. Do you think that there are any potential advantages of an oil related construction project in this area for you and/or your family?

Yes[1] No[2] 2
Don't Know[3]

If yes, what are they?.

[Check () advantages mentioned. Do not read list.]

(a) Employment opportunities for myself	Yes[1] No[2]	3
(b) Employment opportunities for others	Yes[1] No[2]	4
(c) More people moving into the area	Yes[1] No[2]	5
(d) More community services	Yes[1] No[2]	6
(e) Other_____	Yes[1] No[2]	7
(f) Other_____	Yes[1] No[2]	8
(g) Other_____	Yes[1] No[2]	9

3. Do you think that there are any potential disadvantages of an oil related construction project in this area for you and/or your family?

Yes[1] No[2] 10
Don't Know[3]

If YES, what are these?

[Check disadvantages mentioned. Do not read list.]

(a) Increased cost of living	Yes[1] No[2]	11
(b) Increased housing costs	Yes[1] No[2]	12
(c) Overcrowded schools	Yes[1] No[2]	13
(d) Disruption of fishery	Yes[1] No[2]	14
(e) Increased crime	Yes[1] No[2]	15
(f) Other_____	Yes[1] No[2]	16
(g) Other_____	Yes[1] No[2]	17

4. All things considered, do you think that it would be a good idea for an oil related construction project to be located in the Come by Chance area?

Yes[1] No[2] 18
Don't Know[3]

Comments:

5. Would you yourself be interested in working on an oil related construction project, should Come by Chance be chosen as a site?

Yes[1] No[2] 19
Don't Know[3]

6. Would you leave your current job if you had a chance to work on an oil related construction project if it were located in the Come by Chance area?

Yes[1] No[2] 20
Don't Know[3]

Comments?

Next, I'd like to ask you a couple of questions about the community in which you live and your use of leisure time.

7. Overall, what do you like most about living in this community?

- (a) ----- 21
- (b) ----- 22
- (c) ----- 23

8. Overall, what do you dislike most about living in this community?

- (a) ----- 24
- (b) ----- 25
- (c) ----- 26

9. (a). During the past year, have you been a victim of any type of crime in this area?

Yes[1] No[2] 27

(b) If YES, what type(s) of crime have you been a victim of in the past year?

How many times?

- Crime 1 28-30
- Crime 2 31-33

10. What types of things do you usually do in your leisure time?

- (a) ----- 34
- (b) ----- 35
- (c) ----- 36

11. Please indicate the extent to which you agree or disagree with the following statements. Indicate your opinion by telling me whether you (1) Strongly Agree (2) Agree (3) Have No Opinion (4) Disagree or (5) Strongly Disagree with each of the following statements.

	Strong Agree	No Opin Agree	ion	Strng Disa gree	Disa gree	
(a) People living in this community are friendly and cooperative.	1	2	3	4	5	37
(b) I take precautions to prevent having personal property stolen.	1	2	3	4	5	38
(c) I am satisfied with my current standard of living.	1	2	3	4	5	39
(d) There is a strong sense of belonging in this community.	1	2	3	4	5	40
(e) I worry about having enough income to meet my living expenses.	1	2	3	4	5	41
(f) Local people have a lot of say over economic decisions affecting this area.	1	2	3	4	5	42
(g) If I had the chance I'd move from this community.	1	2	3	4	5	43
(h) I know few of the people in this community.	1	2	3	4	5	44
(i) It's necessary to lock your doors at night in this community.	1	2	3	4	5	45

(Question 11 Cont'd)

Col.
No.

	Strong Agree	Agr	No Opin	Dis	Str Dia	
(j) This is a good place to raise children.	1	2	3	4	5	46
(k) In this community there's no sense expressing opinions because they won't be listened to anyway.	1	2	3	4	5	47
(l) People in this community are under a lot of stress.	1	2	3	4	5	48
(m) I seldom visit with my neighbours.	1	2	3	4	5	49
(n) I think the next five years are full of promise for this area.	1	2	3	4	5	50
Finally, we would like some basic information.....						
12. Are you ___Male(1) or ___Female(2)						51
13. Are you ___Single/Never Married(1) ___Married/Common law(2) ___Separated/Divorced(3) ___Widowed(4)						52
14. What is your age? ___years						
15. What is the highest grade of schooling you have completed? (Circle one) 1 2 3 4 5 6 7 8 9 10 11 12 13						53-54 55-56
16. Have you attended or completed training at a post-secondary institution? (Check as many as apply) ___No, I have not attended post-secondary training.(1) ___Trades or Vocational School(2) ___Fisheries College(3) ___Other post-secondary(4) ___University(5)						57
17. How long have you lived in _____? this community? (Insert Community Name) (years)						58-60
18. What is your present employment status? (Check only one) Employed _____(1) Housewife _____(3) Unemployed _____(2) Student _____(4) Retired _____(5) Other _____(6)						61
19. What is your usual occupation? _____ (Please specify)						62-65
20. In which of the following categories did your 1984 income fall?(Specify only <u>your</u> gross annual income, <u>not</u> your spouse's income. Fishermen specify net annual income after expenses.) A) ___ Less than \$9,999(1) C) ___ \$20,000-\$29,999(3) B) ___ \$10,000-\$19,999 (2) D) ___ \$30,000 or more(4)						66

PLEASE PLACE COMPLETED SURVEY IN ATTACHED ENVELOPE

THANK YOU

APPENDIX B

Phase I (1985) Coding Structure

**PHASE I (1985)
CODING STRUCTURE**

COMUNITY community

Value Label

- 1 Southeast
- 2 Adjacent
- 3 Northwest

CODE questionnaire id number

SEX sex

Value Label

- 1 male
- 2 female

INTEREST interested in working on project

Value Label

- 1 yes
- 2 no
- 3 depends

LEAVE would leave current job

Value Label

- 1 yes
- 2 no
- 3 depends

COMMENT2 comments on leaving current job

Value Label

- 1 depends on job/wages/length
- 2 nearer to home
- 3 pay would be more
- 99 other

INFORMED information to judge advantages & disadvantages

Value Label

- 1 yes
- 2 no
- 3 uncertain

POTBENS any potential benefits

Value Label

- 1 yes
- 2 no
- 3 don't know

POTBEN1 type of potential benefit

POTBEN2

POTBEN3

Value Label

- 1 employment for myself/household member
- 2 employment for others
- 3 increased business/spin-offs
- 4 people moving into area
- 5 economic benefits in general
- 6 improve community
- 7 family could come home
- 8 people have more money
- 9 build a house

- 10 housing development
- 11 more community services
- 98 not sure/don't know
- 99 other

POTNEGS any potential negative effects

Value Label

- 1 yes
- 2 no
- 3 don't know

POTNEG1 type of potential negative effect

POTNEG2

POTNEG3

Value Label

- 1 increased crime
- 2 increased cost of living
- 3 effect on fishery
- 4 people moving into area
- 5 people coming home
- 6 locals won't get project jobs
- 7 more uncertainty about future
- 8 effect on low income people
- 9 influx of male population
- 10 increased traffic
- 11 increased tension among communities
- 12 drugs
- 13 pollution
- 14 increased cost of housing
- 15 increased demand for housing
- 16 short-term employment
- 17 overcrowded schools
- 98 not sure/don't know
- 99 other

GOODIDEA good idea to locate project here

Value Label

- 1 yes
- 2 no
- 3 don't know

COMMENT3 comments on good idea

Value Label

- 1 create employment/boost economy
- 2 family member could work there
- 3 short-term work
- 4 if doesn't disrupt fishery
- 98 unspecific
- 99 other

LIKE1 like most about community

LIKE2

LIKE3

Value Label

- 1 nothing
- 2 don't know
- 3 born/grew up here
- 4 quiet/peaceful
- 5 good for kids
- 6 relatives/friends here
- 7 good people
- 8 close to everything
- 9 small
- 10 freedom/privacy
- 11 close knit community
- 12 good for employment
- 13 services available (doctors,etc)
- 14 safe
- 15 low cost of living
- 16 close to Hibernia site

- 17 job is here
- 18 good fishing
- 19 clean
- 20 like community in general
- 21 close to water
- 22 nice scenery
- 99 other

DISLIKE1 dislike most about community

DISLIKE2

DISLIKE3

Value Label

- 1 nothing
- 2 don't know
- 3 scarcity of work
- 4 lack of community services (water,sewer,etc)
- 5 lack of recreation services
- 6 fog/weather
- 7 far from major centres
- 8 alcohol/drug abuse
- 9 lack of privacy
- 10 lack of services (doctor,transportation,etc)
- 11 crime
- 12 pollution from refinery
- 13 too small
- 99 other

VICTIM victim of crime

Value Label

- 1 yes
- 2 no

CRIME1 type of crime
CRIME2
CRIME3

Value Label

- 1 break-in (home)
- 2 theft from car
- 3 theft
- 4 vandalism
- 5 phone calls

FRIENDLY people friendly and cooperative

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree

PREVENT precautions to prevent stolen property

Value Label

- 1 strongly agree
- 2 agree
- 3 no opinion
- 4 disagree
- 5 strongly disagree

SATISFID satisfied with standard of living

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree

BELONG strong sense of belonging

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree

EXPENSES enough income to meet expenses

Value Label

- 1 strongly agree
- 2 agree
- 3 no opinion
- 4 disagree
- 5 strongly disagree

LOTOSAY lot of say over decisions

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree

MOVE would move from community

Value Label

- 1 strongly agree
- 2 agree
- 3 no opinion
- 4 disagree
- 5 strongly disagree

KNOWFEW know few people

Value Label

- 1 strongly agree
- 2 agree
- 3 no opinion
- 4 disagree
- 5 strongly disagree

LOCKDOOR necessary to lock doors

Value Label

- 1 strongly agree
- 2 agree
- 3 no opinion
- 4 disagree
- 5 strongly disagree

CHILDREN good place to raise children

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree

OPINIONS no sense expressing opinions

Value Label

- 1 strongly agree
- 2 agree
- 3 no opinion
- 4 disagree
- 5 strongly disagree

STRESS people under stress

Value Label

- 1 strongly agree
- 2 agree
- 3 no opinion
- 4 disagree
- 5 strongly disagree

VISIT seldom visit neighbours

Value Label

- 1 strongly agree
- 2 agree
- 3 no opinion
- 4 disagree
- 5 strongly disagree

PROMISE area full of promise

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree

UNEMPLOY unemployment a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree
- 8 M more than one response
- 9 no response

COST cost of living a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree
- 8 M more than one response
- 9 no response

HOUSING housing a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree
- 8 M more than one response
- 9 no response

HEALTH health services a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree
- 8 M more than one response
- 9 no response

EDUCAT education services a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree
- 8 M more than one response
- 9 no response

CRIME crime a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree
- 8 M more than one response
- 9 no response

VANDAL vandalism a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree
- 8 M more than one response
- 9 no response

TRANS transportation a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree
- 8 M more than one response
- 9 no response

ALCOHOL alcohol/drug abuse a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree
- 8 M more than one response
- 9 no response

DAYCARE daycare a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree
- 8 M more than one response
- 9 no response

SENIOR services for senior citizens a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree
- 8 M more than one response
- 9 no response

DISABLED services for disabled a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree
- 8 M more than one response
- 9 no response

RECREAT recreation for young people a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree
- 8 M more than one response
- 9 no response

AGE age

EDUC highest level of education

Value Label

- 1 grade 9 or less
- 2 grade 10
- 3 High School
- 4 Trades/community college
- 5 Fisheries/Marine Institute
- 6 University Degree
- 7 Some University
- 8 Other Post-secondary

HOWLONG how long lived in community

Value Label

- 1 2 years or less
- 2 3 to 5 years
- 3 6 to 9 years
- 4 10 years or longer

EMPLSTAT employment status

Value Label

- 1 employed
- 2 unemployed
- 3 retired
- 4 housewife
- 5 student
- 6 other

OCCUPAT usual occupation

Value Label

- 11 Managerial, Administrative
- 21 Natural Sciences, Engineering
- 23 Social Sciences
- 25 Religion
- 27 Teaching
- 31 Medicine and Health
- 33 Artistic, Literary
- 37 Sport and Recreation
- 41 Clerical
- 51 Sales
- 61 Service
- 71 Farming, Horticulture
- 73 Fishing, Trapping
- 75 Forestry and Logging
- 77 Mining, Oil and Gas
- 81 Processing (Petroleum)
- 82 Processing (Food)
- 83 Machining
- 85 Fabricating, Assembling and Repairing
- 87 Construction Trades
- 91 Transport Equipment Operating
- 93 Material-Handling
- 95 Other Crafts and Equipment Operating
- 96 M Housewife
- 97 Student
- 98 Retired

99 Labourer

BUSINESS type of business employed by

Value Label

3	Fishing and Trapping
7	Crude Petroleum, Natural Gas
9	Mineral Extraction
10	Food Industries
11	Beverage Industries
25	Wood Industries
29	Primary Metal Industries
36	Refined Petroleum
37	Chemical Industries
41	Industrial and Heavy Construction
45	Transportation Industries
49	Utility Industries
60	Food, Beverage and Drug (Retail)
61	Shoe, Apparel (Retail)
63	Automotive Industries
64	General Retail
65	Other Retail
73	Insurance Industries
77	Business Service
81	Federal Government
82	Provincial Government
83	Local Government
85	Educational Service
86	Health and Social Service
91	Accommodation Service
92	Food and Beverage Service
97	Personal and Household Services
98	Membership Organization (Religion)

LOCATION location of employer

Value Label

- 1 in home community
- 2 elsewhere in study area
- 3 Clarenville
- 4 St. John's
- 5 other Newfoundland
- 6 other Canada

APPENDIX C

Phase II (1992) Research Instrument

Code _____

Community _____

Gender: ___ Male ___ Female

1. Do you work/have you worked on the project at Bull Arm?

Yes[1] No[2]

If yes: Type of job _____

Length of employment _____

Union[1] or Non-union[2] -- GO TO 5

2. Would you yourself be interested in working on the project?
Yes[1] No[2]

Depends [3]

Comments: _____

3. Have you applied for work on the project? Yes[1] No[2]

4. If the project resumes at full speed, would you leave your current job if you had a chance to work on it?

Yes[1] No[2]

Depends [3]

Comments: _____

5. Does/has any other member of your household worked on the project?

Yes[1] No[2]

If yes: Type of job _____

Length of employment _____

Union[1] or Non-union[2]

6. Have you or any member of your household returned, from elsewhere in Newfoundland or outside the province, to look for work on the project?

Yes[1] No[2]

If yes, where? _____

7. Have you done anything to take advantage of the economic opportunities resulting from this project? (examples: started business, invested in business, built house for sale, rented house, education/training) .

Yes[1] No[2]

If yes, what? _____

8. Have you been affected in any way by the recent slow-down in project activities?

Yes[1] No[2]

If yes, in what way? _____

9. Do you feel that you have had enough information about this project to make a judgement on possible advantages and disadvantages it might have for people living in this area?

Yes[1] No[2]

Uncertain[3]

10. What has been your main source of information about the project?

___ public meetings

___ newsletters

___ television

___ radio

___ newspapers

___ other. Specify _____

11. Do you feel that there have been any benefits to you or your community up to this time as a result of the project?

Yes[1] No[2]
Don't know[3]

If yes, what are they?

- (a) _____
- (b) _____
- (c) _____

12. If the project continues as planned, do you think there are any potential benefits for you or your community?

Yes[1] No[2]
Don't know[3]

If yes, what are they?

- (a) _____
- (b) _____
- (c) _____

13. Do you feel that there have been any negative effects on you or your community up to this time as a result of the project?

Yes[1] No[2]
Don't Know[3]

If yes, what are they?

- (a) _____
- (b) _____
- (c) _____

14. Again, if the project continues as planned, do you think that there are any potential negative effects for you or your community?

Yes[1] No[2]
Don't know[3]

If yes, what are they?

(a) _____

(b) _____

(c) _____

15. All things considered, do you think that it is a good idea for this project to be located in the area?

Yes[1] No[2]
Don't know[3]

Comments: _____

16. Are you a member of any community groups or organizations?

Yes[1] No[2]

If yes, which ones? _____

17. Are you aware of any groups that have been formed in this area to address oil-related issues?

Yes[1] No[2]

If yes, which ones? _____

18. Which group or individual would you contact if you had a question or concern about the project at Bull Arm?

Next, I'd like to ask you some questions about the community in which you live.

19. Overall, what do you like most about living in this community?

(a) _____

(b) _____

(c) _____

20. Overall, what do you dislike most about living in this community?

(a) _____

(b) _____

(c) _____

21. During the past year, have you been the victim of any type of crime in this area?

Yes[1] No[2]

If yes, what type(s) of crime? _____

22. Please indicate the extent to which you agree or disagree with the following statements. Indicate your opinion by telling me whether you (1) Strongly agree (2) Agree (3) Have No Opinion (4) Disagree or (5) Strongly disagree with each of the following statements.

	SA	A	NO	D	SD
(a) People living in this community are friendly and cooperative.	1	2	3	4	5
(b) I take precautions to prevent having personal property stolen.	1	2	3	4	5
(c) I am satisfied with my current standard of living.	1	2	3	4	5
(d) There is a strong sense of belonging in this community.	1	2	3	4	5
(e) I worry about having enough income to meet my living expenses.	1	2	3	4	5

	SA	A	NO	D	SD
(f) Local people have a lot of say over economic decisions affecting this area.	1	2	3	4	5
(g) If I had a chance I'd move from this community.	1	2	3	4	5
(h) I know few of the people in this community.	1	2	3	4	5
(i) It's necessary to lock your doors at night in this community.	1	2	3	4	5
(j) This is a good place to raise children.	1	2	3	4	5
(k) In this community there's no sense expressing opinions because they won't be listened to anyway.	1	2	3	4	5
(l) People in this community are under a lot of stress.	1	2	3	4	5
(m) I seldom visit with my neighbours.	1	2	3	4	5
(n) I think the next five years are full of promise for this area.	1	2	3	4	5

23.. Please tell me whether you think that the following are "problems" in this area. As in the previous question, indicate your opinion by telling me whether you (1) Strongly agree (2) Agree (3) Have No Opinion (4) Disagree or (5) Strongly disagree that the following are problems in this area.

	SA	A	NO	D	SD
(a) Unemployment	1	2	3	4	5
(b) Cost of living	1	2	3	4	5
(c) Housing	1	2	3	4	5
(d) Health Services	1	2	3	4	5
(e) Education services	1	2	3	4	5
(f) Crime	1	2	3	4	5
(g) Vandalism	1	2	3	4	5

	SA	A	NO	D	SD
(h) Transportation	1	2	3	4	5
(i) Alcohol/drug abuse	1	2	3	4	5
(j) Day care services	1	2	3	4	5
(k) Services for senior citizens	1	2	3	4	5
(l) Services for the disabled	1	2	3	4	5
(m) Recreation for young people	1	2	3	4	5

Finally I would like some basic information

24. What is your date of birth? _____

25. What is the highest level of education you have completed? _____

26. How long have you lived in _____?
(community name) (years)

27. What is your present employment status? (Check only one)

Employed _____ (1) Housewife _____ (4)
Unemployed _____ (2) Student _____ (5)
Retired _____ (3) Other _____ (6)

28. What is your usual occupation? _____
(please specify)

29. If employed, what type of business/organization do you work for?

Location: _____

APPENDIX D

Phase II (1992) and Phase III (1996) Coding Structure

**PHASE II (1992) and PHASE III (1996)
CODING STRUCTURE**

COMUNITY community

Value Label

- 1 Southeast
- 2 Adjacent
- 3 Northwest

CODE questionnaire id number

SEX sex

Value Label

- 1 male
- 2 female

WORKED worked on the project

Value Label

- 1 yes
- 2 no

JOBRESP type of job (respondent)

Value Label

(See OCCUPAT)

LENGTH1 length of employment - months (respondent)

UNION1 union or nonunion position (respondent)

Value Label

- 1 union
- 2 non-union

INTEREST interested in working on project

Value Label

- 1 yes
- 2 no
- 3 depends

COMMENT1 comments on interest in project work

APPLIED applied for work on project

Value Label

- 1 yes
- 2 no

LEAVE would leave current job

Value Label

- 1 yes
- 2 no
- 3 depends

COMMENT2 comments on leaving current job

MEMWORK other household member worked on project

Value Label

- 1 yes
- 2 no

JOBMEM type of job (other household member)

Value Label

(See OCCUPAT)

LENGTH2 length of employment - months (other household member)

UNION2 union or nonunion position (other household member)

Value Label

1 yes

2 no

RETURNED returned from elsewhere for work

Value Label

1 yes

2 no

FROM returned from where

Value Label

1 other Newfoundland

2 other Atlantic Province

3 other Canada

4 outside Canada

ECONOMIC taken advantage of economic opportunities

Value Label

1 yes

2 no

WHATDONE how took advantage of economic opportunities

Value Label

- 1 started business
- 2 invested in business
- 3 built house for sale/rent
- 4 education/training
- 9 other

AFFECTED affected by recent slow-down

Value Label

- 1 yes
- 2 no

WHATWAY how affected by slow-down

Value Label

- 1 lay-off
- 2 lost employment opportunity
- 3 slow-down at work place
- 4 compensation cancelled
- 5 seeking employment
- 99 other

INFORMED information to judge advantages & disadvantages

Value Label

- 1 yes
- 2 no
- 3 uncertain

SOURCE main source of information

Value Label

- 1 public meetings
- 2 newsletters
- 3 television
- 4 radio
- 5 newspaper
- 6 word of mouth
- 7 interest groups
- 8 don't know
- 9 other

BENEFIT any benefits up to now

Value Label

- 1 yes
- 2 no
- 3 don't know

BENEFIT1 type of benefit

BENEFIT2

BENEFIT3

Value Label

- 1 employment for myself/household member
- 2 employment for others
- 3 increased business/spin-offs
- 4 people moving into area
- 5 economic benefits in general
- 6 fisheries compensation
- 7 community publicity
- 8 trailers in A.C.
- 9 business moving into area
- 10 community services
- 11 council income
- 12 higher incomes
- 97 not specific

- 98 not sure/don't know
- 99 other

POTBENS any potential benefits

Value Label

- 1 yes
- 2 no
- 3 don't know

POTBEN1 type of potential benefit
 POTBEN2
 POTBEN3

Value Label

- 1 employment for myself/household member
- 2 employment for others
- 3 increased business/spin-offs
- 4 people moving into area
- 5 economic benefits in general
- 6 improve community
- 7 family could come home
- 8 people have more money
- 9 build a house
- 10 housing development
- 98 not sure/don't know
- 99 other

NEGATIVE any negative effects up to now

Value Label

- 1 yes
- 2 no
- 3 don't know

NEGATIV1 type of negative effects
NEGATIV2
NEGATIV3

Value Label

- 1 increased cost of living
- 2 increased cost of housing/rent
- 3 effect on fishery
- 4 increased labour costs in area
- 5 people moving into area
- 6 lay-offs/job loss (due to slow-down)
- 7 hopes down drain (due to slow-down)
- 8 trailers closed in A.C.
- 9 effects on unemployed people
- 10 money leaving area
- 11 increased traffic
- 12 locals not getting jobs
- 13 nepotism/know union members
- 98 not sure/don't know
- 99 other

POTNEGS any potential negative effects

Value Label

- 1 yes
- 2 no
- 3 don't know

POTNEG1 type of potential negative effect
POTNEG2
POTNEG3

Value Label

- 1 increased crime
- 2 increased cost of living
- 3 effect on fishery
- 4 people moving into area
- 5 people coming home

- 6 locals won't get project jobs
- 7 more uncertainty about future
- 8 effect on low income people
- 9 influx of male population
- 10 increased traffic
- 11 increased tension among communities
- 12 drugs
- 13 pollution
- 98 not sure/don't know
- 99 other

GOODIDEA good idea to locate project here

Value Label

- 1 yes
- 2 no
- 3 don't know

COMMENT3 comments on good idea

GROUPMEM member of any community groups

Value Label

- 1 yes
- 2 no

GROUP1 community group/organization

GROUP2

Value Label

- 1 BAACC
- 2 CPCAC
- 3 Lions/Lioness
- 4 Church group
- 5 Town Council
- 6 CBC Area Business Association
- 7 Development Association
- 99 Other

AWARE aware of oil-related groups

Value Label

- 1 yes
- 2 no

OILGRP1 oil-related group
OILGRP2

Value Label

- 1 BAACC
- 2 CPCAC
- 3 HIMA
- 4 ROIMA
- 5 don't know name but named member
- 6 named wrong group
- 7 don't know name
- 8 Business Association
- 9 other

CONTACT who to contact with questions or concerns

Value Label

- 1 Don't know
- 2 BAACC
- 3 Town Council
- 4 Muriel Boutcher/Information Centre
- 5 Cynthia Layden
- 6 MHA/MP
- 7 Development Association
- 8 Fisheries Liaison
- 9 HMDC
- 10 Union
- 11 CPCAC
- 12 ODC
- 13 Government
- 98 Nobody
- 99 Other

LIKE1 like most about community
LIKE2
LIKE3

Value Label

- 1 nothing
- 2 don't know
- 3 born/grew up here
- 4 quiet/peaceful
- 5 good for kids
- 6 relatives/friends here
- 7 good people
- 8 close to everything
- 9 small
- 10 freedom/privacy
- 11 close knit community
- 12 good for employment
- 13 services available (doctors,etc)
- 14 safe
- 15 low cost of living
- 16 close to Hibernia site
- 17 job is here
- 18 good fishing
- 19 clean
- 20 like community in general
- 21 close to water
- 99 other

DISLIKE1 dislike most about community
DISLIKE2
DISLIKE3

Value Label

- 1 nothing
- 2 don't know
- 3 scarcity of work
- 4 lack of community services (water,sewer.etc)
- 5 lack of recreation services
- 6 fog/weather
- 7 far from major centres
- 8 alcohol/drug abuse
- 9 lack of privacy
- 10 lack of services (doctor,transportation,etc)
- 11 crime
- 12 pollution from refinery
- 99 other

VICTIM victim of crime

Value Label

- 1 yes
- 2 no

CRIME1 type of crime
CRIME2

Value Label

- 1 break-in (home)
- 2 theft from car
- 3 theft (unspecified)

FRIENDLY people friendly and cooperative

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree

PREVENT precautions to prevent stolen property

Value Label

- 1 strongly agree
- 2 agree
- 3 no opinion
- 4 disagree
- 5 strongly disagree

SATISFID satisfied with standard of living

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree

BELONG strong sense of belonging

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree

EXPENSES enough income to meet expenses

Value Label

- 1 strongly agree
- 2 agree
- 3 no opinion
- 4 disagree
- 5 strongly disagree

LOTOFSAY lot of say over decisions

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree

MOVE would move from community

Value Label

- 1 strongly agree
- 2 agree
- 3 no opinion
- 4 disagree
- 5 strongly disagree

KNOWFEW know few people

Value Label

- 1 strongly agree
- 2 agree
- 3 no opinion
- 4 disagree
- 5 strongly disagree

LOCKDOOR necessary to lock doors

Value Label

- 1 strongly agree
- 2 agree
- 3 no opinion
- 4 disagree
- 5 strongly disagree

CHILDREN good place to raise children

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree

OPINIONS no sense expressing opinions

Value Label

- 1 strongly agree
- 2 agree
- 3 no opinion
- 4 disagree
- 5 strongly disagree

STRESS people under stress

Value Label

- 1 strongly agree
- 2 agree
- 3 no opinion
- 4 disagree
- 5 strongly disagree

VISIT seldom visit neighbours

Value Label

- 1 strongly agree
- 2 agree
- 3 no opinion
- 4 disagree
- 5 strongly disagree

PROMISE area full of promise

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree

UNEMPLOY unemployment a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree

COST cost of living a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree
- 8 M more than one response
- 9 no response

HOUSING housing a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree
- 8 M more than one response
- 9 no response

HEALTH health services a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree
- 8 M more than one response
- 9 no response

EDUCAT education services a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree
- 8 M more than one response
- 9 no response

CRIME crime a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree
- 8 M more than one response
- 9 no response

VANDAL vandalism a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree
- 8 M more than one response
- 9 no response

TRANS transportation a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree
- 8 M more than one response
- 9 no response

ALCOHOL alcohol/drug abuse a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree
- 8 M more than one response
- 9 no response

DAYCARE daycare a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree
- 8 M more than one response
- 9 no response

SENIOR services for senior citizens a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree
- 8 M more than one response
- 9 no response

DISABLED services for disabled a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree
- 8 M more than one response
- 9 no response

RECREAT recreation for young people a problem

Value Label

- 1 strongly disagree
- 2 disagree
- 3 no opinion
- 4 agree
- 5 strongly agree
- 8 M more than one response
- 9 no response

AGE age

EDUC highest level of education

Value Label

- 1 grade 9 or less
- 2 grade 10
- 3 High School
- 4 Trades/community college
- 5 Fisheries/Marine Institute
- 6 University Degree
- 7 Some University
- 8 Other Post-secondary

HOWLONG how long lived in community

Value Label

- 1 2 years or less
- 2 3 to 5 years
- 3 6 to 9 years
- 4 10 years or longer

EMPLSTAT employment status

Value Label

- 1 employed
- 2 unemployed
- 3 retired
- 4 housewife
- 5 student
- 6 other

OCCUPAT usual occupation

Value Label

- 11 Managerial, Administrative
- 21 Natural Sciences, Engineering
- 23 Social Sciences
- 25 Religion
- 27 Teaching
- 31 Medicine and Health
- 33 Artistic, Literary
- 37 Sport and Recreation
- 41 Clerical
- 51 Sales
- 61 Service
- 71 Farming, Horticulture
- 73 Fishing, Trapping
- 75 Forestry and Logging
- 77 Mining, Oil and Gas
- 81 Processing (Petroleum)
- 82 Processing (Food)

- 83 Machining
- 85 Fabricating, Assembling and Repairing
- 87 Construction Trades
- 91 Transport Equipment Operating
- 93 Material-Handling
- 95 Other Crafts and Equipment Operating
- 96 M Housewife
- 97 Student
- 98 Retired
- 99 Labourer

BUSINESS type of business employed by

Value Label

- 3 Fishing and Trapping
- 10 Food Industries
- 25 Wood Industries
- 36 Refined Petroleum
- 41 Industrial and Heavy Construction
- 45 Transportation Industries
- 60 Food, Beverage and Drug (Retail)
- 61 Shoe, Apparel (Retail)
- 64 General Retail
- 65 Other Retail
- 77 Business Service
- 81 Federal Government
- 83 Local Government
- 85 Educational Service
- 86 Health and Social Service
- 88 ??
- 92 Food and Beverage Service
- 97 Personal and Household Services
- 98 Membership Organization (Religion)

LOCATION location of employer

Value Label

- 1 in home community
- 2 elsewhere in study area
- 3 Clarenville
- 4 St. John's
- 5 other Newfoundland
- 6 other Canada

1996 ONLY:

FAIRWORK people given fair opportunity to work

Value Label

- 1 Yes
- 2 No
- 3 Don't know

FAIR_NO If not fair, why?

Value Label

- 1 Outsiders brought in
- 2 Had to be in union
- 3 those trained didn't get jobs
- 4 young people didn't get jobs
- 5 No one/hardly anyone got jobs
- 6 It's who you know
- 7 Other communities benefitted more
- 98 Don't know
- 99 Other

FAIRBUS businesses given fair opportunity to participate

Value Label

- 1 Yes
- 2 No
- 3 Don't know

ADEQUATE people adequately informed

Value Label

- 1 Yes
- 2 No
- 3 Don't know

DIFFER should have done differently

Value Label

- 1 had own interests first
- 2 not enough support for locals
- 3 no spin-offs
- 4 didn't seek local needs
- 5 not enough involvement
- 6 few local jobs
- 7 lack of information
- 8 just out to make money
- 9 environment damaged
- 10 not enough pressure
- 98 don't know
- 99 other

LOCAL local groups represent best interests

Value Label

- 1 Yes
- 2 No
- 3 Don't know

LOCAL_NO

Value Label

- 1 had own interests first
- 2 not enough support for locals
- 3 no spin-offs
- 4 didn't seek local needs
- 5 not enough involvement
- 6 few local jobs
- 7 lack of information
- 8 just out to make money
- 9 environment damaged
- 10 not enough pressure
- 98 don't know
- 99 other

GOVERN gov't represent best interests

Value Label

- 1 Yes
- 2 No
- 3 Don't know

GOV_NO

Value Label

- 1 had own interests first
- 2 not enough support for locals
- 3 no spin-offs
- 4 didn't seek local needs
- 5 not enough involvement
- 6 few local jobs
- 7 lack of information
- 8 just out to make money
- 9 environment damaged
- 10 not enough pressure
- 98 don't know
- 99 other

INDUSTRY industry represent best interests

Value Label

- 1 Yes
- 2 No
- 3 Don't know

IND_NO

Value Label

- 1 had own interests first
- 2 not enough support for locals
- 3 no spin-offs
- 4 didn't seek local needs
- 5 not enough involvement
- 6 few local jobs
- 7 lack of information
- 8 just out to make money
- 9 environment damaged
- 10 not enough pressure
- 98 don't know
- 99 other

APPENDIX E

Phase III (1996) Research Instrument

1. Have you worked on the project at Bull Arm?
 Yes [1] No [2]
If Yes, Type of job _____
 Length of employment _____
 Union [1] Non-union [2]
- If No, did you apply for work on the project?
 Yes [1] No [2]
2. Has any other member of your household worked on the project?
 Yes [1] No [2]
If Yes, Type of job _____
 Length of employment _____
 Union [1] Non-union [2]
- If No, did any other member of your household apply for work on the project?
 Yes [1] No [2]
3. Did you or any other member of your household return from elsewhere in Newfoundland or outside the province, to look for work on the project?
 Yes [1] No [2]
If Yes, from where? _____
4. Do you feel that people in your community were given a fair opportunity to work on the project?
 Yes [1] No [2] Don't know [3]
If No, why not? _____

5. Have you done anything to take advantage of the economic opportunities resulting from this project?
 Yes [1] No [2]
If Yes, what have you done? _____
6. Do you feel that local businesses were given a fair opportunity to participate in this project?
 Yes [1] No [2] Don't know [3]
7. Do you feel that you have had enough information about this project to make a judgement on the advantages and disadvantages it has had for people living in this area?
 Yes [1] No [2] Uncertain [3]
8. What has been your main source of information about the project?
 [1] public meetings [5] radio
 [2] newsletters [6] newspapers
 [3] television [7] other _____
 [4] BAACC
9. Do you feel that there have been any benefits to you or your community as a result of the project?
 Yes [1] No [2] Don't know [3]
If Yes, what are they?
 a) _____
 b) _____

10. Do you feel that there will be any future benefits to you or your community as a result of the project?
 Yes [1] No [2] Don't know [3]
If Yes, what are they?
 a) _____
 b) _____
 c) _____
11. Do you feel that there have been any negative effects on you or your community as a result of the project?
 Yes [1] No [2] Don't Know [3]
If Yes, what are they?
 a) _____
 b) _____
 c) _____
12. Do you feel that there will be any future negative effects on you or your community as a result of the project?
 Yes [1] No [2] Don't Know [3]
If Yes, what are they?
 a) _____
 b) _____
 c) _____
13. All things considered, do you think that it was a good idea for an oil-related construction project to be located in this area?
 Yes [1] No [2] Don't know [3]
14. Based on your knowledge and experience with this project, would you welcome similar projects to the area in the future?
 Yes [1] No [2] Don't know [3]
15. Are you a member of any community groups or organizations?
 Yes [1] No [2]
If Yes, which ones? _____
16. What group or individual would you contact if you had a question or concern about the project at Bull Arm?

17. Are you aware of any groups that have been formed in this area to address oil-related issues?
 Yes [1] No [2]
If Yes, which ones? _____

18. Do you feel that local people were adequately informed about the possible effects of this project?
 Yes [1] No [2] Don't know [3]
If No, what should have been done differently?

19. Do you feel that your community's best interests were well represented by:

(a) Local groups: Yes [1] No [2]

If No, why not? _____

(b) Government: Yes [1] No [2]

If No, why not? _____

(c) Industry: Yes [1] No [2]

If No, why not? _____

Now I'd like to ask you a few questions about life in your community...

20. Overall, what do you like most about living in this community?

(a) _____

(b) _____

(c) _____

21. Overall, what do you dislike most about living in this community?

(a) _____

(b) _____

(c) _____

22. During the past year, have you been the victim of any type of crime in this area?

Yes [1] No [2]

If Yes, what type of crime? _____

23. Please indicate the extent to which you agree or disagree with the following statements. Indicate your opinion by telling me whether you (1) Strongly agree (2) Agree (3) Have No Opinion (4) Disagree or (5) Strongly disagree with each of the following statements.

	SA	A	NO	D	SD
• People living in this community are friendly and cooperative.	1	2	3	4	5
• I take precautions to prevent having personal property stolen.	1	2	3	4	5
• I am satisfied with my current standard of living.	1	2	3	4	5
• There is a strong sense of belonging in this community.	1	2	3	4	5
• I worry about having enough income to meet my living expenses.	1	2	3	4	5
• Local people have a lot of say over economic decisions affecting this area.	1	2	3	4	5
• If I had a chance I'd move from this community.	1	2	3	4	5
• I know few of the people in this community.	1	2	3	4	5
• It's necessary to lock your doors at night in this community.	1	2	3	4	5
• This is a good place to raise children.	1	2	3	4	5
• People in this community are	1	2	3	4	5

SA A NO D SD

- in this community there's no sense expressing opinions because they won't be listened to anyway. 1 2 3 4 5
- I seldom visit with my neighbours. 1 2 3 4 5
- I think the next five years are full of promise for this area. 1 2 3 4 5

24. Please tell me whether you think that the following issues are "problems" in this area. As in the previous question, indicate your opinion by telling me whether you (1) Strongly agree (2) Agree (3) Have No Opinion (4) Disagree or (5) Strongly disagree that the following are problems in this area.

	SA	A	NO	D	SD
• Unemployment	1	2	3	4	5
• Cost of living	1	2	3	4	5
• Housing	1	2	3	4	5
• Health Services	1	2	3	4	5
• Education services	1	2	3	4	5
• Crime	1	2	3	4	5
• Vandalism	1	2	3	4	5
• Transportation	1	2	3	4	5
• Alcohol/drug abuse	1	2	3	4	5
• Day care services	1	2	3	4	5
• Services for senior citizens	1	2	3	4	5
• Services for the disabled	1	2	3	4	5
• Recreation for young people	1	2	3	4	5

Finally we would like some basic information

25. Sex: Male [1] Female [2]

26. In what year were you born? _____

27. What is the highest level of education you have completed?

28. How long have you lived in (community name)? _____ yrs

29. What is your present employment status? (Check only one)
[1] Employed [4] Homemaker
[2] Unemployed [5] Student
[3] Retired [6] Other

30. What is your usual occupation? _____

31. If employed, what type of business/organization do you work for?

Location: _____

COMMENTS:

APPENDIX F

Analysis of Social and Economic Problem Issues by Year and Region

Recreation for young people is a problem

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (5)	Agree (4)	Indifferent (3)	Disagree (2)	Strongly Disagree (1)			
Phase I (1985)	32.1	57.8	4.9	5.2	-	4.17	35.7503	<0.0001
Phase II (1992)	21.7	46.5	3.1	27.9	0.8	3.61		
Phase III (1996)	32.5	32.8	3.8	27.8	3.0	3.64		

Unemployment is a problem

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (5)	Agree (4)	Indifferent (3)	Disagree (2)	Strongly Disagree (1)			
Phase I (1985)	41.0	42.0	2.6	14.4	-	4.10	9.9671	0.0001
Phase II (1992)	20.9	64.3	1.6	13.2	-	3.93		
Phase III (1996)	20.1	58.4	3.2	17.7	0.6	3.80		

Cost of living is a problem

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (5)	Agree (4)	Indifferent (3)	Disagree (2)	Strongly Disagree (1)			
Phase I (1985)	20.9	62.2	6.3	10.4	0.2	3.93	34.1631	<0.0001
Phase II (1992)	6.2	66.2	3.8	23.8	-	3.55		
Phase III (1996)	7.4	58.6	3.8	29.9	0.3	3.43		

Services for the disabled are a problem

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (5)	Agree (4)	Indifferent (3)	Disagree (2)	Strongly Disagree (1)			
Phase I (1985)	3.0	55.4	16.6	25.0	-	3.36	2.0468	0.1297
Phase II (1992)	6.9	55.4	14.6	23.1	-	3.46		
Phase III (1996)	20.7	37.6	12.7	28.7	0.3	3.50		

Services for senior citizens are a problem

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (5)	Agree (4)	Indifferent (3)	Disagree (2)	Strongly Disagree (1)			
Phase I (1985)	3.5	45.0	12.3	39.0	0.2	3.13	2.2947	0.1013
Phase II (1992)	5.4	46.5	6.2	40.3	1.6	3.14		
Phase III (1996)	18.7	35.0	5.9	36.8	3.6	3.29		

Daycare services are a problem

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (5)	Agree (4)	Indifferent (3)	Disagree (2)	Strongly Disagree (1)			
Phase I (1985)	3.6	49.9	15.9	30.3	0.4	3.26	12.8676	<0.0001
Phase II (1992)	4.6	46.9	18.5	28.5	1.5	3.25		
Phase III (1996)	24.0	36.7	14.5	24.9	-	3.60		

Alcohol/drug abuse is a problem

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (5)	Agree (4)	Indifferent (3)	Disagree (2)	Strongly Disagree (1)			
Phase I (1985)	8.6	34.8	24.7	31.8	0.2	3.20	11.4547	<0.0001
Phase II (1992)	5.4	32.3	17.7	44.6	-	2.99		
Phase III (1996)	4.5	30.0	16.0	47.5	2.1	2.87		

Housing is a problem

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (5)	Agree (4)	Indifferent (3)	Disagree (2)	Strongly Disagree (1)			
Phase I (1985)	2.4	33.7	14.5	48.8	0.6	2.89	5.5815	0.0039
Phase II (1992)	5.4	33.1	7.7	53.1	0.8	2.89		
Phase III (1996)	1.5	29.8	4.4	62.8	1.5	2.67		

Health services are a problem

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (5)	Agree (4)	Indifferent (3)	Disagree (2)	Strongly Disagree (1)			
Phase I (1985)	4.9	32.7	5.6	56.4	0.4	2.85	2.4910	0.8330
Phase II (1992)	9.2	34.6	5.4	50.8	-	3.02		
Phase III (1996)	7.4	36.7	4.4	50.9	0.6	2.99		

Education services are a problem

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (5)	Agree (4)	Indifferent (3)	Disagree (2)	Strongly Disagree (1)			
Phase I (1985)	4.8	22.9	12.5	58.7	1.1	2.72	7.9575	0.0004
Phase II (1992)	1.5	37.7	7.7	50.8	2.3	2.85		
Phase III (1996)	8.6	35.4	5.0	49.9	1.2	3.00		

Transportation is a problem

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (5)	Agree (4)	Indifferent (3)	Disagree (2)	Strongly Disagree (1)			
Phase I (1985)	4.5	24.6	4.7	65.7	0.6	2.67	1.3357	0.2634
Phase II (1992)	3.1	20.0	2.3	74.6	-	2.52		
Phase III (1996)	3.0	25.1	4.4	65.1	2.4	2.61		

Vandalism is a problem

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (5)	Agree (4)	Indifferent (3)	Disagree (2)	Strongly Disagree (1)			
Phase I (1985)	2.8	20.9	6.5	68.5	1.3	2.55	17.5270	<0.0001
Phase II (1992)	3.1	23.3	2.3	67.4	3.9	2.54		
Phase III (1996)	-	14.5	3.6	68.6	13.3	2.19		

Crime is a problem

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (5)	Agree (4)	Indifferent (3)	Disagree (2)	Strongly Disagree (1)			
Phase I (1985)	2.0	13.8	7.8	74.9	1.5	2.40	25.5153	<0.0001
Phase II (1992)	1.5	13.8	4.6	74.6	5.4	2.32		
Phase III (1996)	-	8.3	3.2	69.6	18.9	2.01		

Means - Phase I (1985)

Report

COMUNITY community		UNEMPLOY unemployment a problem	COST cost of living a problem	HOUSING housing a problem	HEALTH health services a problem	EDUCAT education services a problem	CRIME crime a problem	VANDAL vandalism a problem
Adjacent	Mean	3.88	3.97	2.95	2.52	2.52	2.53	2.83
	N	309	310	310	310	310	310	309
	Std. Deviation	1.15	.85	.96	.92	.87	.89	1.03
Northwest	Mean	4.39	3.88	2.81	3.31	2.99	2.22	2.18
	N	227	227	227	225	227	227	227
	Std. Deviation	.65	.82	.97	1.02	1.07	.67	.58
Total	Mean	4.10	3.93	2.89	2.85	2.72	2.40	2.55
	N	536	537	537	535	537	537	536
	Std. Deviation	1.00	.84	.97	1.04	.99	.82	.93

Report

COMUNITY community		TRANS transportation a problem	ALCOHOL alcohol/drug abuse a problem	DAYCARE daycare a problem	SENIOR services for senior citizens a problem	DISABLED services for disabled a problem	RECREAT recreation for young people a problem
Adjacent	Mean	2.58	3.26	3.17	2.85	3.23	4.19
	N	310	310	310	310	310	310
	Std. Deviation	.98	1.01	.96	1.01	.92	.83
Northwest	Mean	2.79	3.11	3.38	3.51	3.54	4.14
	N	226	225	225	226	226	226
	Std. Deviation	1.01	.95	.91	.82	.82	.61
Total	Mean	2.67	3.20	3.26	3.13	3.36	4.17
	N	536	535	535	536	536	536
	Std. Deviation	1.00	.99	.95	.99	.89	.74

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
UNEMPLOY unemployment a problem * COMUNITY community	Between	(Combined)	34.280	1	34.280	36.416	.000
	Within Groups		502.675	534	.941		
	Total		536.955	535			
COST cost of living a problem * COMUNITY community	Between	(Combined)	1.166	1	1.166	1.662	.198
	Within Groups		375.285	535	.701		
	Total		376.451	536			
HOUSING housing a problem * COMUNITY community	Between	(Combined)	2.532	1	2.532	2.722	.100
	Within Groups		497.539	535	.930		
	Total		500.071	536			

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
HEALTH health services a problem * COMUNITY community	Between	(Combined)	81.728	1	81.728	87.895	.000
	Within Groups		495.606	533	.930		
	Total		577.335	534			
EDUCAT education services a problem * COMUNITY community	Between	(Combined)	29.574	1	29.574	32.067	.000
	Within Groups		493.402	535	.922		
	Total		522.976	536			
CRIME crime a problem * COMUNITY community	Between	(Combined)	12.756	1	12.756	19.714	.000
	Within Groups		346.164	535	.647		
	Total		358.920	536			
VANDAL vandalism a problem * COMUNITY community	Between	(Combined)	56.230	1	56.230	74.287	.000
	Within Groups		404.201	534	.757		
	Total		460.431	535			
TRANS transportation a problem * COMUNITY community	Between	(Combined)	5.599	1	5.599	5.670	.018
	Within Groups		527.289	534	.987		
	Total		532.888	535			
ALCOHOL alcohol/drug abuse a problem * COMUNITY community	Between	(Combined)	2.940	1	2.940	3.014	.083
	Within Groups		520.058	533	.976		
	Total		522.998	534			
DAYCARE daycare a problem * COMUNITY community	Between	(Combined)	5.818	1	5.818	6.583	.011
	Within Groups		471.068	533	.884		
	Total		476.886	534			
SENIOR services for senior citizens a problem * COMUNITY community	Between	(Combined)	57.017	1	57.017	65.568	.000
	Within Groups		464.356	534	.870		
	Total		521.373	535			

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
DISABLED services for disabled a problem * COMUNITY community	Between	(Combined)	12.723	1	12.723	16.517	.000
	Within Groups		411.335	534	.770		
	Total		424.058	535			
RECREAT recreation for young people a problem * COMUNITY community	Between	(Combined)	.271	1	.271	.491	.484
	Within Groups		294.617	534	.552		
	Total		294.888	535			

Means - Phase II (1992)

Report

COMUNITY community		UNEMPLOY unemployment a problem	COST cost of living a problem	HOUSING housing a problem	HEALTH health services a problem	EDUCAT education services a problem	CRIME crime a problem	VANDAL vandalism a problem
Southeast	Mean	3.75	3.50	2.89	2.94	3.00	2.50	3.00
	N	36	36	36	36	36	36	36
	Std. Deviation	.94	1.00	1.12	.98	1.07	1.00	1.20
Adjacent	Mean	4.05	3.64	2.89	3.05	2.59	2.41	2.57
	N	60	61	61	61	61	61	60
	Std. Deviation	.72	.88	1.00	1.16	.92	.84	.95
Northwest	Mean	3.91	3.42	2.91	3.06	3.18	1.94	2.00
	N	33	33	33	33	33	33	33
	Std. Deviation	1.01	.94	1.10	1.17	1.01	.43	.43
Total	Mean	3.93	3.55	2.89	3.02	2.85	2.32	2.54
	N	129	130	130	130	130	130	129
	Std. Deviation	.87	.92	1.05	1.11	1.01	.84	.99

Report

COMUNITY community		TRANS transportation a problem	ALCOHOL alcohol/drug abuse a problem	DAYCARE daycare a problem	SENIOR services for senior citizens a problem	DISABLED services for disabled a problem	RECREAT recreation for young people a problem
Southeast	Mean	2.67	3.17	3.33	3.08	3.42	3.14
	N	36	36	36	36	36	36
	Std. Deviation	.99	1.13	1.04	1.02	.91	1.13
Adjacent	Mean	2.46	2.85	3.00	2.80	3.41	3.49
	N	61	61	61	60	61	61
	Std. Deviation	.87	.95	.95	1.01	.86	1.09
Northwest	Mean	2.45	3.03	3.61	3.82	3.61	4.34
	N	33	33	33	33	33	32
	Std. Deviation	.94	.92	.83	.92	1.06	.87
Total	Mean	2.52	2.98	3.25	3.14	3.46	3.60
	N	130	130	130	129	130	129
	Std. Deviation	.92	1.00	.97	1.07	.92	1.13

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
UNEMPLOY unemployment a problem * COMUNITY community	Between	(Combined)	2.045	2	1.022	1.366	.259
	Within Groups		94.327	126	.749		
	Total		96.372	128			
COST cost of living a problem * COMUNITY community	Between	(Combined)	1.097	2	.548	.638	.530
	Within Groups		109.126	127	.859		
	Total		110.223	129			

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
HOUSING housing a problem * COMUNITY community	Between	(Combined)	.013	2	.006	.006	.994
	Within Groups		142.480	127	1.122		
	Total		142.492	129			
HEALTH health services a problem * COMUNITY community	Between	(Combined)	.311	2	.155	.124	.883
	Within Groups		158.620	127	1.249		
	Total		158.931	129			
EDUCAT education services a problem * COMUNITY community	Between	(Combined)	8.560	2	4.280	4.395	.014
	Within Groups		123.663	127	.974		
	Total		132.223	129			
CRIME crime a problem * COMUNITY community	Between	(Combined)	6.436	2	3.218	4.887	.009
	Within Groups		83.633	127	.659		
	Total		90.069	129			
VANDAL vandalism a problem * COMUNITY community	Between	(Combined)	17.282	2	8.641	10.013	.000
	Within Groups		108.733	126	.863		
	Total		126.016	128			
TRANS transportation a problem * COMUNITY community	Between	(Combined)	1.140	2	.570	.674	.511
	Within Groups		107.329	127	.845		
	Total		108.469	129			
ALCOHOL alcohol/drug abuse a problem * COMUNITY community	Between	(Combined)	2.327	2	1.164	1.176	.312
	Within Groups		125.642	127	.989		
	Total		127.969	129			
DAYCARE daycare a problem * COMUNITY community	Between	(Combined)	8.244	2	4.122	4.597	.012
	Within Groups		113.879	127	.897		
	Total		122.123	129			
SENIOR services for senior citizens a problem * COMUNITY community	Between	(Combined)	22.229	2	11.115	11.362	.000
	Within Groups		123.259	126	.978		
	Total		145.488	128			
DISABLED services for	Between	(Combined)	.925	2	.462	.537	.586

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
DISABLED services for disabled a problem * COMUNITY community	Within Groups		109.383	127	.861		
	Total		110.308	129			
RECREAT recreation for young people a problem * COMUNITY community	Between	(Combined)	26.067	2	13.034	11.834	.000
	Within Groups		138.770	126	1.101		
	Total		164.837	128			

Means - Phase III (1996)

Report

ZONE community subgroup		UNEMPLOY unemployment a problem	COST cost of living a problem	HOUSING housing a problem	HEALTH health services a problem	EDUCAT education services a problem	CRIME crime a problem	VANDAL vandalism a problem
Southeast	Mean	4.06	3.54	2.76	3.06	3.38	2.35	2.45
	N	106	105	106	105	106	106	105
	Std. Deviation	.70	.99	.97	1.09	1.06	.81	.84
Adjacent	Mean	3.64	3.54	2.70	2.81	2.57	2.02	2.28
	N	145	145	145	145	145	145	145
	Std. Deviation	.98	.96	.97	1.01	.93	.58	.79
Northwest	Mean	3.74	3.10	2.51	3.23	3.26	1.58	1.75
	N	88	88	88	88	88	88	88
	Std. Deviation	1.18	1.04	.95	1.19	1.24	.69	.78
Total	Mean	3.80	3.43	2.67	2.99	3.00	2.01	2.19
	N	339	338	339	338	339	339	338
	Std. Deviation	.98	1.01	.97	1.09	1.12	.74	.84

Report

ZONE community subgroup		TRANS transportation a problem	ALCOHOL alcohol/drug abuse a problem	DAYCARE daycare a problem	SENIOR services for senior citizens a problem	DISABLED services for disabled a problem	RECREAT recreation for young people a problem
Southeast	Mean	2.62	2.99	3.58	3.31	3.47	3.33
	N	105	105	105	105	105	105
	Std. Deviation	.96	1.00	1.06	1.11	1.10	1.15
Adjacent	Mean	2.52	3.03	3.46	2.88	3.30	3.30
	N	145	145	145	144	145	145
	Std. Deviation	.94	1.02	1.09	1.26	1.09	1.28
Northwest	Mean	2.76	2.47	3.84	3.91	3.85	4.58
	N	88	87	88	88	88	88
	Std. Deviation	1.07	.91	1.15	1.08	1.13	.89
Total	Mean	2.61	2.87	3.60	3.28	3.50	3.64
	N	338	337	338	337	338	338
	Std. Deviation	.98	1.01	1.10	1.24	1.12	1.27

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
UNEMPLOY unemployment a problem * ZONE community subgroup	Between	(Combined)	10.955	2	5.478	5.899	.003
	Within Groups		312.001	336	.929		
	Total		322.956	338			
COST cost of living a problem * ZONE community subgroup	Between	(Combined)	12.701	2	6.350	6.484	.002
	Within Groups		328.095	335	.979		
	Total		340.796	337			

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
HOUSING housing a problem * ZONE community subgroup	Between	(Combined)	3.256	2	1.628	1.744	.176
	Within Groups		313.741	336	.934		
	Total		316.997	338			
HEALTH health services a problem * ZONE community subgroup	Between	(Combined)	10.283	2	5.142	4.375	.013
	Within Groups		393.705	335	1.175		
	Total		403.988	337			
EDUCAT education services a problem * ZONE community subgroup	Between	(Combined)	47.613	2	23.807	21.423	.000
	Within Groups		373.384	336	1.111		
	Total		420.997	338			
CRIME crime a problem * ZONE community subgroup	Between	(Combined)	28.507	2	14.254	30.223	.000
	Within Groups		158.466	336	.472		
	Total		186.973	338			
VANDAL vandalism a problem * ZONE community subgroup	Between	(Combined)	25.073	2	12.536	19.495	.000
	Within Groups		215.427	335	.643		
	Total		240.500	337			
TRANS transportation a problem * ZONE community subgroup	Between	(Combined)	3.270	2	1.635	1.696	.185
	Within Groups		322.957	335	.964		
	Total		326.228	337			
ALCOHOL alcohol/drug abuse a problem * ZONE community subgroup	Between	(Combined)	18.955	2	9.478	9.753	.000
	Within Groups		324.558	334	.972		
	Total		343.513	336			
DAYCARE daycare a problem * ZONE community subgroup	Between	(Combined)	7.902	2	3.951	3.281	.039
	Within Groups		403.376	335	1.204		
	Total		411.278	337			
SENIOR services for senior citizens a problem * ZONE community subgroup	Between	(Combined)	57.758	2	28.879	21.111	.000
	Within Groups		456.894	334	1.368		
	Total		514.653	336			
DISABLED services for	Between	(Combined)	16.636	2	8.318	6.832	.001

ANOVA Table

		Sum of Squares	df	Mean Square	F	Sig.
DISABLED services for disabled a problem * ZONE community	Within Groups	407.861	335	1.217		
	Total	424.497	337			
RECREAT recreation for young people a problem * ZONE community subgroup	Between (Combined)	104.659	2	52.329	39.749	.000
	Within Groups	441.025	335	1.316		
	Total	545.683	337			

APPENDIX G

**Analysis of Quality of Life Indicators
by Year and Region**

“People living in this community are friendly and cooperative”

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (5)	Agree (4)	Indifferent (3)	Disagree (2)	Strongly Disagree (1)			
Phase I (1985)	12.3	73.5	7.5	5.6	1.1	3.90	5.3002	0.0051
Phase II (1992)	10.8	78.5	4.6	6.2	-	3.94		
Phase III (1996)	25.4	64.8	2.1	6.5	1.2	4.07		

“This is a good place to raise children”

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (5)	Agree (4)	Indifferent (3)	Disagree (2)	Strongly Disagree (1)			
Phase I (1985)	2.8	80.2	10.3	6.2	0.6	3.79	15.1540	<0.0001
Phase II (1992)	6.9	78.5	4.6	9.2	0.8	3.82		
Phase III (1996)	23.0	65.5	4.7	6.2	0.6	4.04		

"I know few people in this community"

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (1)	Agree (2)	Indifferent (3)	Disagree (4)	Strongly Disagree (5)			
Phase I (1985)	0.4	9.5	0.6	78.2	11.4	3.91	14.3648	<0.0001
Phase II (1992)	1.5	19.2	-	56.2	23.1	3.80		
Phase III (1996)	1.5	12.1	0.9	36.4	49.1	4.20		

"There is a strong sense of belonging in this community"

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (5)	Agree (4)	Indifferent (3)	Disagree (2)	Strongly Disagree (1)			
Phase I (1985)	5.2	79.4	5.0	9.9	0.4	3.79	2.5287	0.0803
Phase II (1992)	3.8	72.3	7.7	15.4	0.8	3.63		
Phase III (1996)	15.9	62.8	8.3	11.5	1.5	3.8		

"I seldom visit with my neighbours"

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (1)	Agree (2)	Indifferent (3)	Disagree (4)	Strongly Disagree (5)			
Phase I (1985)	1.3	42.6	2.6	52.0	1.5	3.10	29.3494	<0.0001
Phase II (1992)	1.5	35.4	-	58.5	4.6	3.29		
Phase III (1996)	0.9	23.7	1.8	57.1	16.6	3.65		

"I am satisfied with my current standard of living"

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (5)	Agree (4)	Indifferent (3)	Disagree (2)	Strongly Disagree (1)			
Phase I (1985)	1.3	59.0	3.2	34.0	2.6	3.22	11.2589	<0.0001
Phase II (1992)	1.5	77.7	1.5	16.9	2.3	3.59		
Phase III (1996)	5.0	66.7	3.2	21.8	3.2	3.48		

“If I had the chance I’d move from this community”

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (1)	Agree (2)	Indifferent (3)	Disagree (4)	Strongly Disagree (5)			
Phase I (1985)	5.6	24.4	7.8	52.6	9.5	3.36	1.2134	0.2976
Phase II (1992)	5.4	19.2	3.8	61.5	10.0	3.52		
Phase III (1996)	6.5	23.0	5.6	49.6	15.3	3.44		

“I think the next five years are full of promise for this area”

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (5)	Agree (4)	Indifferent (3)	Disagree (2)	Strongly Disagree (1)			
Phase I (1985)	0.9	40.2	40.2	17.6	1.1	3.22	24.6734	<0.0001
Phase II (1992)	0.8	55.8	15.5	24.8	3.1	3.26		
Phase III (1996)	-	34.0	22.2	35.2	8.6	2.82		

“I worry about having enough income to meet my living expenses”

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (1)	Agree (2)	Indifferent (3)	Disagree (4)	Strongly Disagree (5)			
Phase I (1985)	5.2	52.1	3.4	38.4	0.9	2.78	8.1694	0.0003
Phase II (1992)	7.8	58.9	2.3	31.0	-	2.57		
Phase III (1996)	13.0	54.9	3.2	27.7	1.2	2.49		

“In this community there’s no sense expressing opinions because they won’t be listened to anyway”

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (1)	Agree (2)	Indifferent (3)	Disagree (4)	Strongly Disagree (5)			
Phase I (1985)	2.2	30.5	29.3	37.6	0.4	3.03	2.1427	0.1179
Phase II (1992)	4.7	28.1	13.3	51.6	2.3	3.19		
Phase III (1996)	3.5	30.4	17.1	46.3	2.7	3.14		

“Local people have a lot of say over decisions affecting this area”

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (5)	Agree (4)	Indifferent (3)	Disagree (2)	Strongly Disagree (1)			
Phase I (1985)	0.9	35.6	31.1	30.1	2.2	3.03	1.6794	0.1870
Phase II (1992)	1.5	37.7	22.3	30.0	8.5	2.94		
Phase III (1996)	2.1	35.1	20.6	36.3	5.9	2.91		

“People in this community are under a lot of stress”

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (1)	Agree (2)	Indifferent (3)	Disagree (4)	Strongly Disagree (5)			
Phase I (1985)	0.4	27.5	36.3	35.6	0.2	3.08	0.4025	0.6688
Phase II (1992)	0.8	40.8	14.6	43.8	-	3.02		
Phase III (1996)	2.4	34.5	16.2	44.8	2.1	3.10		

“It’s necessary to lock your doors at night in this community”

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (1)	Agree (2)	Indifferent (3)	Disagree (4)	Strongly Disagree (5)			
Phase I (1985)	3.2	59.3	4.7	31.5	1.3	2.69	23.8166	<0.0001
Phase II (1992)	2.3	59.2	1.5	33.1	3.8	2.77		
Phase III (1996)	3.8	37.5	1.8	50.7	6.2	3.18		

“I take precautions to prevent having personal property stolen”

Research Phase	Rating (%)					\bar{x}	F	p
	Strongly Agree (1)	Agree (2)	Indifferent (3)	Disagree (4)	Strongly Disagree (5)			
Phase I (1985)	3.4	70.7	2.4	23.4	0.2	2.46	4.9467	0.0073
Phase II (1992)	4.6	56.9	3.1	35.4	-	2.69		
Phase III (1996)	9.1	54.6	1.8	31.9	2.7	2.64		

Means - Phase I (1985)

Report

COMUNITY community		FRIENDLY people friendly and cooperative	PREVENT precautions to prevent stolen property	SATISFID satisfied with standard of living	BELONG strong sense of belonging	EXPENSES enough income to meet expenses	LOTOFSAY lot of say over decisions	MOVE would move from community
Adjacent	Mean	3.95	2.47	3.29	3.78	2.75	3.10	3.40
	N	310	310	310	310	310	310	310
	Std. Deviation	.66	.92	1.02	.74	1.09	.93	1.21
Northwest	Mean	3.84	2.46	3.13	3.81	2.81	2.93	3.31
	N	226	225	226	225	226	224	226
	Std. Deviation	.78	.85	1.02	.64	1.00	.81	.98
Total	Mean	3.90	2.46	3.22	3.79	2.78	3.03	3.36
	N	536	535	536	535	536	534	536
	Std. Deviation	.72	.89	1.02	.70	1.05	.89	1.12

Report

COMUNITY community		KNOWFEW know few people	LOCKDOOR necessary to lock doors	CHILDREN good place to raise children	OPINIONS no sense expressing opinions	STRESS people under stress	VISIT seldom visit neighbours	PROMISE area full of promise
Adjacent	Mean	3.91	2.71	3.73	3.05	3.08	3.22	3.33
	N	310	310	310	310	310	310	310
	Std. Deviation	.87	1.05	.73	.92	.86	1.03	.84
Northwest	Mean	3.90	2.65	3.86	3.01	3.08	2.92	3.07
	N	226	226	226	225	224	225	225
	Std. Deviation	.46	.91	.41	.83	.73	.99	.66
Total	Mean	3.91	2.68	3.79	3.03	3.08	3.10	3.22
	N	536	536	536	535	534	535	535
	Std. Deviation	.73	1.00	.62	.89	.81	1.02	.78

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
FRIENDLY people friendly and cooperative * COMUNITY community	Between	(Combined)	1.516	1	1.516	2.960	.086
	Within Groups		273.440	534	.512		
	Total		274.955	535			
PREVENT precautions to prevent stolen property * COMUNITY community	Between	(Combined)	.013	1	.013	.016	.899
	Within Groups		425.026	533	.797		
	Total		425.039	534			
SATISFID satisfied with standard of living * COMUNITY community	Between	(Combined)	3.246	1	3.246	3.140	.077
	Within Groups		551.889	534	1.033		
	Total		555.134	535			

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
BELONG strong sense of belonging * COMUNITY community	Between	(Combined)	.168	1	.168	.342	.559
	Within Groups		261.802	533	.491		
	Total		261.970	534			
EXPENSES enough income to meet expenses * COMUNITY community	Between	(Combined)	.394	1	.394	.356	.551
	Within Groups		590.186	534	1.105		
	Total		590.580	535			
LOTOFSAY lot of say over decisions * COMUNITY community	Between	(Combined)	3.486	1	3.486	4.468	.035
	Within Groups		415.092	532	.780		
	Total		418.579	533			
MOVE would move from community * COMUNITY community	Between	(Combined)	1.172	1	1.172	.939	.333
	Within Groups		666.334	534	1.248		
	Total		667.506	535			
KNOWFEW know few people * COMUNITY community	Between	(Combined)	.006	1	.006	.012	.912
	Within Groups		281.329	534	.527		
	Total		281.336	535			
LOCKDOOR necessary to lock doors * COMUNITY community	Between	(Combined)	.585	1	.585	.590	.443
	Within Groups		529.130	534	.991		
	Total		529.715	535			
CHILDREN good place to raise children * COMUNITY community	Between	(Combined)	2.340	1	2.340	6.186	.013
	Within Groups		201.986	534	.378		
	Total		204.326	535			
OPINIONS no sense expressing opinions * COMUNITY community	Between	(Combined)	.238	1	.238	.303	.582
	Within Groups		419.156	533	.786		
	Total		419.394	534			
STRESS people under stress * COMUNITY community	Between	(Combined)	.000	1	.000	.000	.983
	Within Groups		345.852	532	.650		
	Total		345.852	533			
VISIT seldom visit	Between	(Combined)	11.588	1	11.588	11.243	.001
	Within Groups						

ANOVA Table

		Sum of Squares	df	Mean Square	F	Sig.
VISIT seldom visit neighbours * COMUNITY community	Within Groups	549.357	533	1.031		
	Total	560.946	534			
PROMISE area full of promise * COMUNITY community	Between (Combined)	8.891	1	8.891	14.919	.000
	Within Groups	317.640	533	.596		
	Total	326.531	534			

Means - Phase II (1992)

Report

COMUNITY community		FRIENDLY people friendly and cooperative	PREVENT precautions to prevent stolen property	SATISFID satisfied with standard of living	BELONG strong sense of belonging	EXPENSES enough income to meet expenses	LOTOFSAY lot of say over decisions	MOVE would move from community
Southeast	Mean	3.81	2.89	3.64	3.50	2.44	2.94	3.36
	N	36	36	36	36	36	36	36
	Std. Deviation	.71	1.01	.83	.94	.97	1.09	1.10
Adjacent	Mean	4.11	2.66	3.67	3.87	2.53	3.02	3.54
	N	61	61	61	61	60	61	61
	Std. Deviation	.37	1.05	.87	.62	1.05	.99	1.07
Northwest	Mean	3.76	2.55	3.39	3.33	2.76	2.79	3.64
	N	33	33	33	33	33	33	33
	Std. Deviation	.83	.94	.90	.89	1.00	1.08	1.08
Total	Mean	3.94	2.69	3.59	3.63	2.57	2.94	3.52
	N	130	130	130	130	129	130	130
	Std. Deviation	.63	1.01	.87	.82	1.01	1.04	1.08

Report

COMUNITY community		KNOWFEW know few people	LOCKDOOR necessary to lock doors	CHILDREN good place to raise children	OPINIONS no sense expressing opinions	STRESS people under stress	VISIT seldom visit neighbours	PROMISE area full of promise
Southeast	Mean	3.81	2.92	3.58	3.00	3.11	3.22	3.11
	N	36	36	36	35	36	36	36
	Std. Deviation	.98	1.13	.91	1.06	1.01	1.07	1.01
Adjacent	Mean	3.38	2.51	3.95	3.36	2.77	3.34	3.48
	N	61	61	61	61	61	61	60
	Std. Deviation	.99	.91	.46	.97	.94	1.05	.85
Northwest	Mean	4.58	3.09	3.82	3.06	3.36	3.27	3.03
	N	33	33	33	32	33	33	33
	Std. Deviation	.79	1.16	.85	1.08	.74	1.07	.98
Total	Mean	3.80	2.77	3.82	3.19	3.02	3.29	3.26
	N	130	130	130	128	130	130	129
	Std. Deviation	1.05	1.06	.72	1.03	.94	1.05	.95

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
FRIENDLY people friendly and cooperative * COMUNITY community	Between	(Combined)	3.611	2	1.806	4.788	.010
	Within Groups		47.896	127	.377		
	Total		51.508	129			
PREVENT precautions to prevent stolen property * COMUNITY community	Between	(Combined)	2.184	2	1.092	1.071	.346
	Within Groups		129.508	127	1.020		
	Total		131.692	129			

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
SATISFID satisfied with standard of living * COMUNITY community	Between	(Combined)	1.765	2	.883	1.172	.313
	Within Groups		95.627	127	.753		
	Total		97.392	129			
BELONG strong sense of belonging * COMUNITY community	Between	(Combined)	6.993	2	3.496	5.601	.005
	Within Groups		79.284	127	.624		
	Total		86.277	129			
EXPENSES enough income to meet expenses * COMUNITY community	Between	(Combined)	1.807	2	.904	.877	.419
	Within Groups		129.883	126	1.031		
	Total		131.690	128			
LOTOFSAY lot of say over decisions * COMUNITY community	Between	(Combined)	1.120	2	.560	.514	.599
	Within Groups		138.388	127	1.090		
	Total		139.508	129			
MOVE would move from community * COMUNITY community	Between	(Combined)	1.380	2	.690	.588	.557
	Within Groups		149.089	127	1.174		
	Total		150.469	129			
KNOWFEW know few people * COMUNITY community	Between	(Combined)	30.773	2	15.386	17.443	.000
	Within Groups		112.027	127	.882		
	Total		142.800	129			
LOCKDOOR necessary to lock doors * COMUNITY community	Between	(Combined)	8.354	2	4.177	3.880	.023
	Within Groups		136.723	127	1.077		
	Total		145.077	129			
CHILDREN good place to raise children * COMUNITY community	Between	(Combined)	3.058	2	1.529	3.010	.053
	Within Groups		64.512	127	.508		
	Total		67.569	129			
OPINIONS no sense expressing opinions * COMUNITY community	Between	(Combined)	3.559	2	1.780	1.712	.185
	Within Groups		129.941	125	1.040		
	Total		133.500	127			
STRESS people under	Between	(Combined)	7.990	2	3.995	4.788	.010
	Within Groups						
	Total						

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
STRESS people under stress * COMUNITY community	Within Groups		105.979	127	.834		
	Total		113.969	129			
VISIT seldom visit neighbours * COMUNITY community	Between	(Combined)	.354	2	.177	.158	.854
	Within Groups		142.538	127	1.122		
	Total		142.892	129			
PROMISE area full of promise * COMUNITY community	Between	(Combined)	5.530	2	2.765	3.181	.045
	Within Groups		109.509	126	.869		
	Total		115.039	128			

Means - Phase III (1996)

Report

ZONE community subgroup		FRIENDLY people friendly and cooperative	PREVENT precautions to prevent stolen property	SATISFID satisfied with standard of living	BELONG strong sense of belonging	EXPENSES enough income to meet expenses	LOTOFSAY lot of say over decisions	MOVE would move from community
Southeast	Mean	3.91	2.67	3.13	3.64	2.22	2.98	3.34
	N	105	106	106	106	106	106	106
	Std. Deviation	.76	1.06	1.09	.91	.92	1.09	1.08
Adjacent	Mean	4.09	2.51	3.74	3.88	2.55	3.00	3.50
	N	145	145	145	145	145	145	145
	Std. Deviation	.77	1.09	.81	.82	1.10	.97	1.19
Northwest	Mean	4.22	2.83	3.48	3.88	2.73	2.68	3.47
	N	88	88	88	88	88	88	88
	Std. Deviation	.86	1.16	1.02	.97	1.12	.97	1.30
Total	Mean	4.07	2.64	3.48	3.80	2.49	2.91	3.44
	N	338	339	339	339	339	339	339
	Std. Deviation	.80	1.10	.99	.89	1.07	1.01	1.19

Report

ZONE community subgroup		KNOWFEW know few people	LOCKDOOR necessary to lock doors	CHILDREN good place to raise children	STRESS people under stress	OPINIONS no sense expressing opinions	VISIT seldom visit neighbours	PROMISE area full of promise
Southeast	Mean	4.10	3.32	3.80	2.78	2.92	3.54	2.66
	N	105	106	106	106	106	106	106
	Std. Deviation	.94	1.07	.79	.95	1.03	.98	.93
Adjacent	Mean	3.99	2.98	4.17	3.17	3.30	3.64	3.08
	N	145	145	145	145	145	144	144
	Std. Deviation	1.18	1.10	.55	.90	.88	1.04	.93
Northwest	Mean	4.64	3.34	4.12	3.35	3.15	3.80	2.58
	N	88	88	88	88	88	88	88
	Std. Deviation	.76	1.18	.94	1.06	1.10	1.12	1.10
Total	Mean	4.20	3.18	4.04	3.10	3.14	3.65	2.82
	N	338	339	339	339	339	338	338
	Std. Deviation	1.04	1.12	.76	.98	1.00	1.04	1.00

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
FRIENDLY people friendly and cooperative * ZONE community subgroup	Between	(Combined)	4.474	2	2.237	3.552	.030
	Within Groups		210.961	335	.630		
	Total		215.435	337			
PREVENT precautions to prevent stolen property * ZONE community subgroup	Between	(Combined)	5.690	2	2.845	2.365	.095
	Within Groups		404.121	336	1.203		
	Total		409.811	338			

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
SATISFID satisfied with standard of living * ZONE community subgroup	Between	(Combined)	22.997	2	11.498	12.476	.000
	Within Groups		309.664	336	.922		
	Total		332.661	338			
BELONG strong sense of belonging * ZONE community subgroup	Between	(Combined)	3.990	2	1.995	2.522	.082
	Within Groups		265.768	336	.791		
	Total		269.758	338			
EXPENSES enough income to meet expenses * ZONE community subgroup	Between	(Combined)	13.406	2	6.703	6.065	.003
	Within Groups		371.326	336	1.105		
	Total		384.732	338			
LOTOFSAY lot of say over decisions * ZONE community subgroup	Between	(Combined)	6.292	2	3.146	3.099	.046
	Within Groups		341.053	336	1.015		
	Total		347.345	338			
MOVE would move from community * ZONE community subgroup	Between	(Combined)	1.709	2	.854	.606	.546
	Within Groups		473.920	336	1.410		
	Total		475.628	338			
KNOWFEW know few people * ZONE community subgroup	Between	(Combined)	23.908	2	11.954	11.737	.000
	Within Groups		341.204	335	1.019		
	Total		365.112	337			
LOCKDOOR necessary to lock doors * ZONE community subgroup	Between	(Combined)	10.219	2	5.109	4.149	.017
	Within Groups		413.805	336	1.232		
	Total		424.024	338			
CHILDREN good place to raise children * ZONE community subgroup	Between	(Combined)	8.930	2	4.465	8.044	.000
	Within Groups		186.492	336	.555		
	Total		195.422	338			
STRESS people under stress * ZONE community subgroup	Between	(Combined)	17.009	2	8.504	9.254	.000
	Within Groups		308.779	336	.919		
	Total		325.788	338			
OPINIONS no sense	Between	(Combined)	9.240	2	4.620	4.733	.009

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
OPINIONS no sense expressing opinions * ZONE community	Within Groups		327.964	336	.976		
	Total		337.204	338			
VISIT seldom visit neighbours * ZONE community subgroup	Between	(Combined)	3.214	2	1.607	1.479	.229
	Within Groups		363.889	335	1.086		
	Total		367.104	337			
PROMISE area full of promise * ZONE community subgroup	Between	(Combined)	17.251	2	8.625	8.991	.000
	Within Groups		321.376	335	.959		
	Total		338.627	337			

