HUMAN SYSTEM
ALBERTA OIL SANDS
ENVIRONMENTAL RESEARCH PROGRAM
1975-1980:
AN INTEGRATION AND SYNTHESIS OF RESEARCH RESULTS

FORT McMURRAY: 1961 - 1980

by

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for
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ALBERTA ENVIRONMENT
June 1983

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ABSTRACT

Commercial exploitation of the Athabasca Oil Sands deposit had transformed Fort McMurray between 1961 and 1980, from a small and remote northern community of 1200 people into Alberta's eighth largest city with 27 000 residents. This research project was to describe, analyse, and interpret the socio-economic changes which had occurred in Fort McMurray as a result of development of the Great Canadian Oil Sands (GCOS, now Suncor Inc.) in the 1960s, and of Syncrude Canada Ltd. in the 1970s, and to assess these changes in relation to the stages of construction and operation of the two oil sands projects.

The major data sources consisted of research reports prepared between 1975 and 1980, for the Human System of the Alberta Oil Sands Environmental Research Program (AOSERP). The Human System research program covered various aspects of socio-economic changes in the Athabasca Oil Sands region, and specifically in Fort McMurray, which were associated with the past and current efforts to exploit the oil sands.

Results of AOSERP Human System studies have been integrated and synthesized in this report, focussing on five major research areas: (1) population, (2) employment and labour force, (3) housing, (4) services and facilities, and (5) community responses to changes in the foregoing areas and to life in Fort McMurray in general. The report is organized into sections dealing with the historical background, local administration, pre-construction phase from 1961 to 1963, construction of Suncor from 1964 to 1967, operations of Suncor alone from 1968 to 1973, construction of Syncrude from 1974 to 1978, and operations of both Suncor and Syncrude from 1979 to 1980. The report closes with a synthesis of the research results.

ACKNOWLEDGEMENTS

I wish to express sincere gratitude for the direction and patient assistance given to me in the course of writing this report, by Dr. Dennis W. Stokes, Senior Research Manager of the Research Management Division, Alberta Environment.

Many individuals and organizations made this study possible. The office of former Alberta Oil Sands Environmental Research Program (AOSERP), and especially its first two directors, Mr. M.G. Pahl and Dr. S.B. Smith, as well as its members: M. Falk, S. Grant, D. Hadler, W. Hume, R. Hursey, A. Mann, M. Rehn, and R. Seidner helped to initiate, plan, and implement the Human System research.

Representatives of government agencies, the oil sands industry, and administration in Fort McMurray, who were members of the AOSERP Human Environment Committee and later, of the Human System Scientific Advisory Committee, gave generously of their time in designing the Human System research program. Special appreciation is due for the contribution made also to this study by R. Piepenburg, R.F. Robertson, J. Sagan, and G.M. Young.

Many persons in the Athabasca Oil Sands region gave valuable information and advice which had helped this research project. I wish to thank in particular, for the assistance received from R. Cheecham, R.E. Duncan, R. Fraser, D.G. Jones, C. Knight, E. Mason, A. Strassbourg, P. Van Belle, R. Woodward, and Howard Wylie.

I would like to acknowledge the reviewers whose comments proved invaluable in writing this report, and who included Dr. J. Frideres, Dr. H. Hiller, Mr. J.M. Parker, and Mrs. M.E. Russell-Brown. My special gratitude goes to Mrs. M.E.Rous and Miss J. Leger, for typing and editing this manuscript.

Appreciation is extended to the consultants and social scientists retained by the Human System of AOSERP. Results of their research have been integrated in this report, and the sources acknowledged as appropriate.

This study was funded by the Research Management Division, Department of Environment, Government of Alberta.

SUMMARY OF FINDINGS

Historical as well as contemporary factors had played a role in the emergence of Fort McMurray as the eighth largest city in Alberta. Since the very beginning, the development of the community was linked with the exploitation of northern natural resources.

Fort McMurray was established at the confluence of the Clearwater and Athabasca rivers in 1870, to sustain the Athabasca country transportation routes which were required to commercially exploit the natural resources of the North. After the Hudson's Bay Company had opened the Mackenzie River Basin for northern transportation in 1883, Fort McMurray became its southern terminus and a service and trading centre. With the completion of the Alberta and Great Waterways Railway in the 1920s, the community began to function as an intermodal terminal between railway and water transportation along the Mackenzie River Basin. In contrast to the predominantly Native communities of Fort Chipewyan, Fort MacKay and Anzac, the residents of Fort McMurray were mostly in-migrant to the area and English speaking. Fort McMurray's socio-economic structure reflected its role as an outpost of the industrial frontier of southern Canadian metropolis attempting to develop the natural resources of northern hinterland, including the oil sands.

Existence of the Athabasca "tar sands" had been known since the days of Alexander Mackenzie in the eighteenth century, but as a subject of commercial interest the sands emerged at the end of the nineteenth century. As early as 1882, a suggestion was made that hot water might be used to extract oil from the sands. Subsequent failures to discover the extraction techniques indicated that successful exploitation of the oil sands would depend on government support for technical research, on inexpensive transportation, and on increasing demand for oil from external markets. Despite the long history of private, federal, and provincial exploration efforts, only in the 1960s, improvements in technology, increasing oil prices, and the desire to lessen a growing Canadian dependence on imported energy combined to result in commercial development of the oil sands. Commercial exploitation of the Athabasca Oil Sands deposit had become first,

the major source of economic growth in the region, and subsequently, its only significant economic base.

Fort McMurray was designated as a domicile for the oil sands industry. Development of the Suncor project in the 1960s, and of the Syncrude project in the 1970s, had opened employment opportunities which brought thousands of new residents to Fort McMurray, necessitating its rapid urban expansion. Moreover, the community was to operate increasingly as the centre for the provision of government services and the distribution of goods to the rest of the Athabasca Oil Sands Region. The Province was also committed to ensure that essential services were in place to accommodate the resource development. The interaction of those factors led the Government of Alberta to become directly involved in the planning and managing of Fort McMurray's rapid urban growth.

Between 1948 and 1964, the community had an elected council and a mayor. In 1962, in anticipation of the oil sands development and associated urban expansion, the local Town Council applied for the New Town status for Fort McMurray, provided for by the New Towns Act of 1955. When Fort McMurray became a New Town in 1964, its elected council was replaced under the Act, by a Board of Administrators appointed by the Minister of Municipal Affairs. Although the Board was converted to an elected body in 1971, it reported to two regulatory boards administered by the Department of Municipal Affairs (DMA) in all matters related to the planning, development, and financing of Fort McMurray's growth and operations. As a consequence, the rapid urbanization of Fort McMurray was planned and managed by a configuration of forces including the local Board of Administrators, the DMA, and during the construction of Syncrude, also the Northeast Alberta Regional Commission. An autonomous local government had emerged in the community in 1980, when Fort McMurray was designated officially as a city.

The rate of growth of Fort McMurray between 1961 and 1980, was without precedent in Alberta or northern Canada. The community's rapid urban development was shaped by the stages of commercial exploitation of the resource, and by the characteristics of the oil sands industry. The stages of construction and operation of Suncor and Syncrude affected

the magnitude and pace of growth of the community. Each stage had resulted in new employment opportunities and related labour force requirements, which induced rapid growth of the population in Fort McMurray. Each stage called therefore, for appropriate measures in the provision of additional housing and community amenities. However, the quality of urbanization of Fort McMurray was affected by the nature of technology and employment policy of the oil sands industry.

Both Suncor and Syncrude have relied on strip-mining of the oil sands and extracting the oil from the bitumen on-site, at a processing plant. The complex technology involved in the operation and maintenance of the processing plants and mining equipment necessitated the hiring of relatively large, highly skilled, and educated permanent labour force. In addition, Syncrude preferred to hire married workers thus hoping to reduce the population and labour turnover. These factors had shaped the characteristics of the new residents arriving in Fort McMurray, most of whom were educated young adults with young families. Their demographic characteristics affected in turn, the nature of requirements related to housing and community services and facilities; the quality of urbanization of Fort McMurray had to be compatible with the needs of the new residents.

Following is a summary of socio-economic changes which have occurred in Fort McMurray between 1961 and 1980. The socio-economic conditions have been summarized for each stage of development of the oil sands industry.

1. Pre-Construction Stage: 1961 - 1963

Fort McMurray experienced little change during this period. In 1961, with a population of 1200 residents, of whom 51% was younger than 20, and only about 28% was in the prime years of working life, the town resembled other small communities of northeastern Alberta. The level of education of the residents was considerably lower than the average in Alberta. The labour force participation (LFP) rate was 10% lower in Fort McMurray than in the rest of the Province, as were the local wages.

Despite the approaching development of the oil sands, no effective plans were in evidence to accommodate the community's future

urban growth. Housing was limited to 301 units and there were few building proposals. Except for the well developed health care and hospital facilities, the community lacked many services and amenities due as much to the lack of effective demand as the lack of planning. The only response to the anticipated urban expansion was the 1962 application of the local Town Council for the New Town status of Fort McMurray.

2. Construction of Suncor: 1964 - 1967

This period changed completely the socio-economic structure of Fort McMurray, transforming it from a small northern community into a resource town. The Suncor construction activities peaked in 1966, when the construction labour force had reached 2300 workers who resided in camp at the industrial site, 32 km north of Fort McMurray. At that time, the population in Fort McMurray grew to 2614 residents, and then to 3169 by 1967. The new arrivals were predominantly young adult males, but many of the residents were married. Although the rate of growth of the population in Fort McMurray averaged 18% per annum, the rate of growth of employment, much of which was generated by town construction, was about 23% per annum. This imbalance resulted in the shortage of labour and local inflation. Thus income levels in Fort McMurray were 13% higher than the provincial average.

Considerable efforts were made by Suncor, the government, and construction industry to house the in-coming population. Nonetheless, a significant share of local housing began to consist of mobile homes and apartment units which were absent from Fort McMurray until then. Life in the community was quite difficult as many of the services and facilities lagged behind the growing demand. The limited local retail outlets appeared to barely keep pace with the growth. The level of health care services declined rapidly, even though the number of hospital beds had increased by two and a half times. The police force was overworked as 5 constables and 2 cruisers had to deal with the crime rate which was nearly double the rate for Alberta. The construction activities accelerated also the demand for physical infrastructure and transportation access, the provision of which was paramount during

this period. In 1966, Highway 63 linking Fort McMurray with Edmonton was completed; in 1967, a natural gas pipeline was brought into service, and public thoroughfares in Fort McMurray had doubled.

3. Suncor Operational: 1968 - 1973

With the commencement of production by Suncor, the population in Fort McMurray grew to 6847 by 1971, and then to 9475 by 1973. The rate of growth of the population oscilated between 47% in 1967-68, when the plant operating staff had arrived, and 3% in 1969-70. Some of the characteristics of the population in Fort McMurray, such as the large proportion of families with children and the high level of skills and education, corresponded more closely to those found in southern urban Canada, than to those associated usually with northern resource communities. By 1971, the overall LFP rate grew to nearly 68% (compared to 48.5% in 1961), and was 5% higher than in Alberta. Over 37% of the residents was in the labour force, only 3% less than in the Province. The income level was 24% higher than the provincial average.

There was a steady expansion of Fort McMurray's urban infrastructure, housing, and community amenities. But the growth of demand for most services and facilities continued to outpace the ability of the planners and administrators to provide them. Among the community features most in need of improvement, the residents of Fort McMurray gave priority in 1969, to the access to cities in the south, communications, medical facilities, and entertainment and recreation. By 1973, improved road and air service had reduced the problem of difficult access, while the introduction of local radio and television had dealt with the communications problems. Many other problems were yet to be solved, when in December 1973, site clearing for construction of the Syncrude project had begun.

4. Construction of Syncrude 1974 - 1978

Fort McMurray was only beginning to settle down, when the economic, demographic, and social conditions coincident with the operational stage of Suncor were submerged by those coincident with the construction of Syncrude. The pace of changes in the community was more rapid now than ever before. The population began to grow very

quickly from 9475 in 1973 to 15 424 in 1976, and then to 24 580 in 1978. The rate of population growth was highest during the last year of the construction period, reflecting the policy of Syncrude which favoured early hiring of the plant operating employees. The level of education of the residents was higher in Fort McMurray than in any comparable town in the Province.

At the peak of the construction activities in 1977, about 6600 construction workers resided in camp at the industrial site, 40 km north of Fort McMurray. The local employment opportunities attracted also a large "shadow" population composed of semi-transients and/or squatters who, like the construction workers at the Syncrude site, were not included in the town's population statistics. All these people however, had used some services and facilities in the community.

Employment opportunities were growing faster though, than the population. Almost 80% of the increase in local labour force occurred two year prior to and during the construction phase. The overall LFP rate grew in Fort McMurray to over 69%, and was nearly 3% higher than in Alberta. The overall unemployment rate was also higher in Fort McMurray than in the Province, because the construction of Syncrude attracted large numbers of young people who were less skilled and more transient than before. The average income level was 25% higher in Fort McMurray than in Edomonton or the rest of the Province, but the cost of living was between 8% and 13% higher than in Edmonton.

During this period, the provision of housing became of paramount importance to Syncrude, the government, and community. Despite rapid increase in the housing stock which by 1976 grew to nearly 4200 units or by 195% of its 1971 level, the prices of houses and of rental accommodation escalated at a rate of 15% per annum. As a result, housing subsidies and special cost-of-living allowances which were provided by the oil sands corporations and government, became an important aspect of life in Fort McMurray, and a factor in attracting new residents to the town.

In 1976, the inhabitants of Fort McMurray expressed little satisfaction with community amenities. The underdeveloped commercial services prompted many people to shop in Edmonton. Medical and dental

care were considered to be inadequate. Complaints were heard about overcrowded schools and the lack of day care centres. The shortage of leisure facilities and the predominance of "booze" oriented socializing were feared as detrimental to the upbringing of children and youths. But the residents appeared to be satisfied with the performance of the local police force. Because of the extended geographical layout of the community, the lack of public transit in Fort McMurray made it difficult for many families to use the services and facilities which were located mainly in the downtown core. After 1976, the expansion of existing services and facilities and the provision of new ones coincided with the gradual departure of the construction labour force and of the "shadow" population. The community services were beginning now to meet the demand of the residents in Fort McMurray.

5. Suncor and Syncrude Operational: 1979 - 1980

On 1 September 1978, the Syncrude project entered officially into production stage. After the turmoil of construction activities, Fort McMurray started to settle down. The rate of growth of the population fell to only 5% between 1978 and 1979, when the community grew from 24 580 to 25 802 residents. The current low rate of growth of the population was comparable to that in the second year of production of the Suncor project, after the plant operating personnel had arrived. The easing of demographic pressures enabled Fort McMuuray to become more stable as a community.

A relative lull in the local economy followed. While the LFP rate continued to increase for both men and women, the unemployment rate continued to grow as well. Apparently, young males with rather unstable employment histories and without post-secondary education continued to be attracted to Fort McMurray. Many of them were transient. On the average, the income levels continued to be over 25% higher in Fort McMurray than in Edomonton. However, people living in the community prior to the last construction "boom", and those over 44 years old had somewhat lower incomes than younger, more recent arrivals. Lower incomes were also reported by the Native people.

After a limited availability of housing throughout the 1970s, a reasonable balance between the supply and demand was reached when the housing stock grew to nearly 8600 units. The housing prices which peaked in 1978, began to stabilize and were comparable to the Edmonton levels. Although the proportion of mobile homes had declined, composition of the housing mix changed little, with apartments, semi-detached dwellings, and townhouses dominating the scenario. By 1979, only less than one half of the dwellings in Fort McMurray was privately owned.

Local services and facilities continued to adjust to the new condition and meet the demand in a more satisfactory manner. Their development was somewhat uneven though, because of the prospect of imminent construction of the now aborted Alsands project. Since Fort McMurray was designated to function as the regional service centre, some of the facilities had been planned to accommodate future growth and might have been overbuilt.

During this period, the residents of Fort McMurray were fairly satisfied with the community amenities. The most highly rated services included telephone, police protection, fire protection, shopping, and schools. Health and social services were considered to be relatively satisfactory. The residents evaluated most negatively the design and maintenance of streets and sidewalks, and flood control and animal control. Evidently, although much room was still left for further improvements, the level of provision of community amenities had increased remarkably.

6. Summary

The small northern community of Fort McMurray was transformed first, into a resource town by the construction of Suncor, and subsequently, into a regional urban centre by the construction of Syncrude. Unlike Suncor which pioneered commercial exploitation of the Athabasca Oil Sands, the Syncrude project could benefit from the experience of its predecessor. It could also use some of the facilities, such as the regional and urban physical infrastructure, which were already in place. However massive, the development of Syncrude

had also intensified the already existing urban features of Fort McMurray, which had been established by the construction and early production of Suncor. With both Suncor and Syncrude operational, when Fort McMurray acquired the status of a city in 1980, little trace could be found of the community that had existed two decades ago.

1. INTRODUCTION

1.1 BACKGROUND

Since the early 1960s and until 1980, Fort McMurray, a community located in the Athabasca Oil Sands region of northeastern Alberta, experienced rapid urban growth. This growth was induced by commercial exploitation of the Athabasca Oil Sands deposit (Figure 1), which had culminated in the development of two oil sands operations. First, in the 1960s, the Great Canadian Oil Sands (GCOS, now Suncor Inc.) had built a strip-mine and a processing plant 32 km north of Fort McMurray. Subsequently, in the 1970s, Syncrude Canada Ltd. had built an oil sands project including a strip-mine and a processing plant at Mildred Lake, 40 km north of Fort McMurray. Both the developments gave jobs and high wages to thousands of construction workers, and later, employed large permanent personnel whose incomes were also relatively high. Masses of new population arrived in Fort McMurray, resulting in a growth of demand for housing, and community services and facilities. These changes necessitated a very rapid expansion of the urban infrastructure, as well as construction of additional amenities in the town. Within less than two decades, Fort McMurray was transformed from a small and remote northern community of 1200 people into a regional urban centre. The periods of most rapid development of the town coincided with the construction of Suncor between 1964 and 1967, and with the construction of Syncrude between 1974 and 1978. By 1980, with a population of 27,000 residents, Fort McMurray became the eighth largest urban settlement in Alberta, and had been designated officially as a city.

Situated approximately 445 km northeast of Edmonton, Fort McMurray is built where the Clearwater River intersects the Athabasca River. The city now includes the once separate settlement of Waterways, and a number of newly developed neighbourhoods on the west bank of the Clearwater River and on both sides of the Athabasca River.

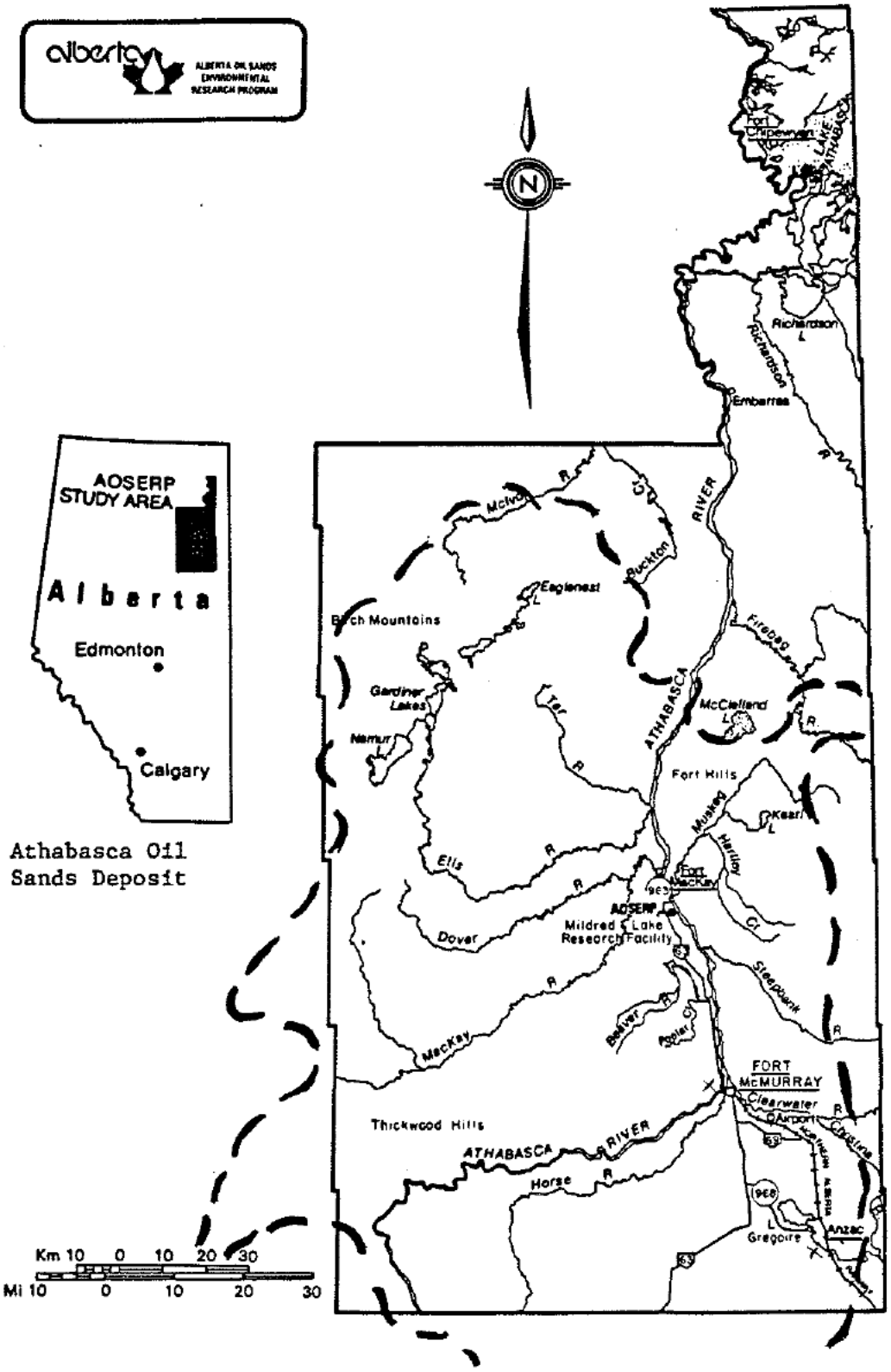

Figure 1. Extent of the Athabasca Oil Sands Deposit in Relation to the Alberta Oil Sands Environmental Research Program Study Area.

The community's rapid growth has covered all developable land on the Clearwater floodplain in the valley formed by the confluence of the two rivers, where the downtown core is located. The new residential areas have been constructed on the adjacent plateaus along the west side of the valley, some 60 m to 75 m higher than the valley floor. These upland plateaus are separated from each other by deeply cut river valleys which contribute to an unusually attractive physical setting of the community, but also create problems for urban planning and growth.

Each of the residential areas situated on one of the plateaus is connected with the downtown core only by a single roadway entering the main transportation artery, Highway 63. The river valleys prevent any road links to be built between the respective plateaus. This feature of the urban development has resulted in a "ribbon effect" as illustrated by the map of Fort McMurray (Figure 2). The topographic characteristics of the terrain have also increased the cost of construction of many of the basic elements of the municipal infrastructure.

Fort McMurray's initial core, the Lower Townsite, is located on the floodplain, and accommodates most retail and community services. Banks, realty, finance, insurance, and other offices are generally found close to retailing activities. Hotels are located near the major roads. South of Fort McMurray on Highway 63, Mackenzie Industrial Park has been developed to house more than sixty industrial tenants and nearly twenty commercial tenants. Relying on the assumption that new oil sands projects will be developed in the region, at the rate of approximately one every five years, and that the population of Fort McMurray will reach 59 000 by 1990, the city's municipal planners have also provided for the physical capacity to accommodate future population growth (Northeast Alberta Regional Commission, February 1978).

An overview of the main stages in the development of Suncor and Syncrude and of concomitant changes in Fort McMurray, is presented in Table 1. This report examines changes in the community during construction and operations of the two oil sands projects between 1961 and 1980.

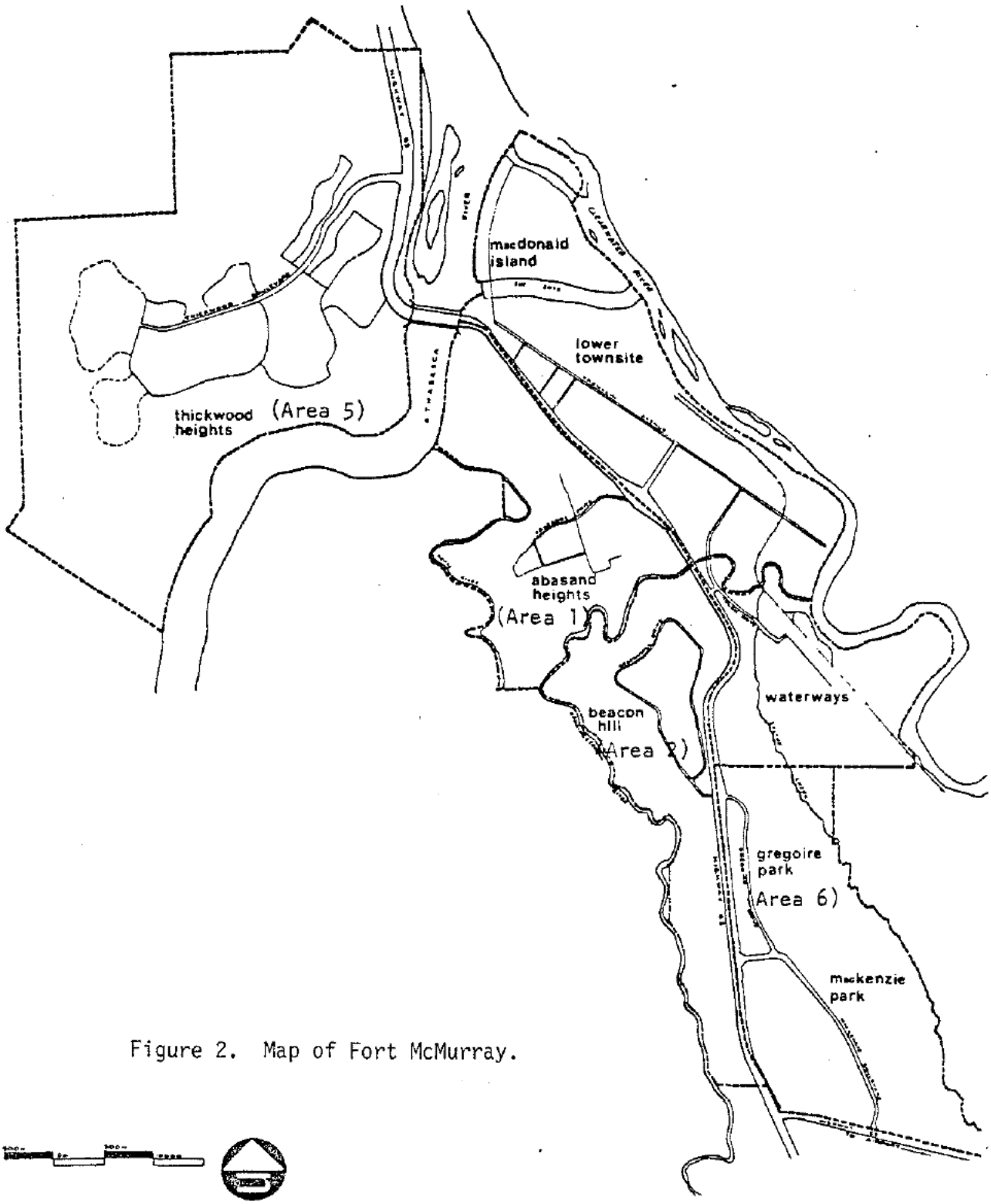

Figure 2. Map of Fort McMurray.

Table 1. An Overview of the Main Features of the Stages in the Development of Fort McMurray: 1961 to 1980.

Stage	Characteristics
1961-1963: Pre-construction period.	- Stable population of 1200 to 1300. - Economy based on transportation and local trade. - Renewed interest in oil sands culminating in 1963, in the approval of Suncor project.
1964-1967: Suncor construction phase.	- In 1964, Fort McMurray classified as a "New Town". - Population grows to 1800 by 1964; and to 5000 by mid 1967. - In late 1967, Suncor project becomes operational.
1968-1973: Suncor alone operational	- Population grows to 5900 by 1968; to 8100 by 1972, and to 9400 by 1973. - Community stabilizes following the population influx. - Infrastructure mostly in place to meet current demand; some overcapacity to service future expansion. - In 1973, Syncrude project approved. Site clearing starts in December 1973.
1974-1978: Syncrude construction phase	- Rapid population growth: 11 000 by 1974; 13 400 by 1975; 24 600 by 1978. - Following substantial increases in cost estimates for Syncrude project, Atlantic Richfield withdraws from consortium in 1974. - Construction stops, but some project preparation continues. - In 1975, reactivation of construction and major development activities. - Major urban development in Fort McMurray. - Heavy concentration of construction workers living in camps at project site; the labour force peaks at 8000 in 1977. - Build-up in plant operating and service industry employment. - Pressures to provide urban infrastructure and services in Fort McMurray commensurate with rapid population growth. - Difficulties in attracting employees and high turnover in all sectors of the local economy.

continued ...

Table 1. Concluded.

Stage	Characteristics
1974-1978: Syncrude construction phase concluded	- Existence of mobile "shadow" population, not included in published statistics, exacerbates planning difficulties. - Frequent changes in demographic projections for the community. - In late 1978, Syncrude project (first phase) becomes operational.
1979-1980: Suncor and Syncrude projects operational.	- Population grows to 25 800 by 1979; and to 27 000 by 1980. - Urban population continues to stabilize as the Syncrude construction and start-up labour force declines. - In 1980, Fort McMurray designated as a city.

Source: Adapted from Nichols 1980:3-4.

1.2 STUDY OBJECTIVES

The purpose of this research project is to describe, analyse, and interpret the socio-economic changes which have occurred in Fort McMurray as a result of commercial exploitation of the Athabasca Oil Sands deposit, and to assess these changes in relation to the different stages of development of the Suncor and Syncrude operations. This report represents therefore, a study of the changes induced in Fort McMurray between 1961 and 1980, by commercial development of the oil sands.

Data, on which the report is based, consist of results of studies conducted between 1975 and 1980, by the Human System of the Alberta Oil Sands Environmental Research Program (AOSERP). The AOSERP Human System research considered different aspects of social change in the part of the Athabasca Oil Sands region designated as AOSERP study area (Figure 1), and specifically in Fort McMurray between 1961 and 1980.

Following the Terms of Reference for this study, results of research of AOSERP Human System have been integrated and synthesized in the report, to meet four general objectives:

1. To select on the basis of Human System reports, the major research areas which are relevant to government agencies and oil sands industry involved in the Athabasca Oil Sands region, and which pertain to the following five broad factors:
   - i) population
   - ii) employment and labour force
   - iii) housing
   - iv) social services, and
   - v) physical services and regional infrastructures;
2. To consolidate and synthesize the information contained in Human System research reports, on changes which have occurred in Fort McMurray between 1961 and 1979, within each major research area selected in 1 above, in terms of their size and magnitude, their characteristics, and human responses to these;

3. To relate the information on changes in each selected major research area and on human responses to these changes to the different stages of the oil sands development process: baseline, exploration, construction, and operation of the Suncor Inc. and Syncrude Canada Ltd. plants; and
4. To determine the major stages in the development of Fort McMurray and to describe their charactertistics in terms of the selected research areas, in relation to the different stages of the oil sands development process.

Before presenting research methods which have been applied to meet the objectives of the Term of Reference, it is necessary to review the AOSERP Human System data base and to discuss its limitations.

1.3 AOSERP HUMAN SYSTEM DATA BASE

Numerous factors were influential in shaping the nature and quality of information which was generated by the AOSERP Human System. Among these factors, the overall mandate of AOSERP, and mandate and objectives of the Human System were most important. In addition, the development of Human System research strategy and program was constrained occasionally, by aspects of the organizational environment and practical considerations. Because of such constraints, research decisions which might have been appropriate from the point of view of social sciences, could not always be implemented. Characteristics, quality, and limitations of the AOSERP Human System data base will be presented and assessed therefore, in the light of factors which had shaped the research decisions and implementation of the research program.

1.3.1 The Mandate and Organization of AOSERP

The Alberta Oil Sands Environmental Research Program was established in 1975, by an agreement between the governments of Canada and Alberta, in response to the prospect of massive and

rapid development of the Athabasca Oil Sands deposit. The need for an extensive research effort was perceived initially in 1973, after scientists in Alberta Environment and Environment Canada had anticipated that immense environmental impacts would accompany commercial exploitation of the resource (Smith 1981:14). Preliminary outlines of the Agreement for AOSERP ommitted however, the impacts of oil sands development on people. The decision to add research on the socio-economic impacts of oil sands extraction was made in the Winter of 1974, as a result of an initiative taken by the Northern Development Branch (Conway 1976), which had served as an executive arm of the Northern Alberta Development Council. After an exchange of correspondence between the Hon. A. Adair, Alberta's Minister for Northern Development, and the Hon. W.J.Yurko, Alberta's Minister for Environment, the Canada-Alberta Agreement for AOSERP of February 1975, directed the Program towards research on socio-economic as well as on environmental effects of commercial development of the resource.

The mandate of AOSERP was to provide information which would help formulate government policies that allow for orderly development of the Athabasca Oil Sands deposit with a minimum of environmental damage. The Program was restricted to investigation of renewable resources only, including people; the possibility of research into any aspects of oil sands technology rested outside its jurisdiction. The Program was also restricted to a study area with legally defined boundaries (Smith 1981:14).

The original recommendations for AOSERP indicated a 10-year life for the Program, with the Canada-Alberta Agreement covering the first five-year period, which had commenced on 1 April 1975. The two governments agreed to provide funding of $2.0 million annually each, and Alberta Government accepted administrative responsibility for the Program. After the withdrawal of the Federal Government from the Program in 1979, AOSERP was combined on 1 April 1980, with the Research Secretariat of Alberta Environment to form the Research Management Division. This amalgamation led to the termination of AOSERP as an integral research organization.

Authority to plan and implement AOSERP research activities was vested originally in eight technical research committees:

1. Air quality and meteorology
2. Aquatic fauna
3. Hydrology
4. Hydrogeology
5. Vegetation
6. Terrestial fauna
7. Land use, and
8. Human environment

In 1977, to overcome fragmentation of the research program, AOSERP was consolidated into four systems: Air, Water, Land, and Human. Management was now centralized under AOSERP.

The research management of each system was assisted by a Scientific Advisory Committee in identifying information needs and evaluating research results. To ensure policy relevance of Human System research, the Human System Scientific Advisory Committee included representatives of government agencies, the oil sands industry, and the administration of Fort McMurray.

1.3.2 Human System Research Objectives

Information provided by AOSERP Human System was to facilitate the planning of strategies which would ameliorate any negative consequences and enhance the positive effects of commercial extraction of oil sands on local communities. Under the policy set forth in the Canada-Alberta Agreement, no AOSERP research results could be held confidential. Therefore, information generated by the Human System could be used by government agencies and the oil sands industry as well as by communities in the region.

Although communities of the Athabasca Oil Sands region were not represented on the Human System Scientific Advisory Committee, they were frequently involved in the planning of Human System research. Advice and opinion of significant members of the local communities were often sought in the course of designing and implementation of specific studies.

Research objectives of AOSERP Human System included:

1. Establishment of baseline states of economic, demographic, and social conditions in the region, so that changes in these conditions between 1961 and 1979, could be observed and understood;

2. Identification and quantification where possible of changes in economic, demographic, and social conditions which were associated with development of the Athabasca Oil Sands;

3. Interpretation of patterns of change in the historical, regional, and community context, and assessment of their desirability and of implications for future developments in the study area; and

4. Identification of alternative means which might be considered by government and the oil sands industry to ameliorate any negative changes and their consequences and to enhance the positive changes associated with the development activities.

These objectives directed the Human System to conduct social impact research.

1.3.3 Social Impact Research

Social impact research involves a study of the consequences of any significant intervention into a community's life. Such research should consist of three distinguishable activities: (1) post-impact analyses which establish empirical propositions about the consequences of previous or exisiting interventions, such as construction of a resource project; (2) pre-impact assessment which predicts the consequences of impacting projects being considered or planned; and (3) policy decisions regarding strategies necessary to ameloriate unwanted consequences of existing or planned interventions. When combined, these three activities constitute an integrated process of social impact assessment (Bowles 1979:3).

The value of post-impact analyses rests in their ability to identify the types of social impacts likely to result from the development of specific kinds of projects, such as oil

sands plants, in a particular type of environment, such as the Athabasca Oil Sands region. Thus post-impact analyses constitute "basic research" aimed at delineating empirical propositions about the consequences of known events. Such propositions should lead to "the development of substantive principles which can be used in anticipating social impacts" in the pre-impact assessment and in the planning of responses to future projects (Bowles 1979:15).

The social impact research of AOSERP Human System was governed by its objectives. First, the Human System research constituted post-impact analyses of the consequences of oil sands development which occurred between 1961 and 1979. It had to consider the development of Suncor in the 1960s, as well as the development of Syncrude concurrent with the existence of AOSERP. Secondly, the Human System research program was directed toward "basic research" which was to identify the patterns of change associated with commercial extraction of the oil sands. It was not within the objectives of AOSERP Human System to predict the consequences of new oil sands projects which, such as Alsands, were being planned in the region at that time. Thirdly, AOSERP was not a regulatory agency, and it had no decision-making powers. However, co-operation of the regulatory and management agencies was secured through their representation on AOSERP Human System Scientific Advisory Committee, to help the Program generate policy-relevant information.

1.3.4 Human System Research Strategy

The Human System research was to identify what was taking place in communities of the oil sands region; to analyse the effects of resource development on the communities; to determine if the consequences were desirable or undesirable; and to suggest what public policy measures might be needed to optimize social benefits of development. It was necessary therefore, to devise a research strategy to assess fairly the social changes in the region.

Different research strategies embody different implicit approaches to the question of value judgment. Some strategies rest on the assumption that "objective" evaluations of social changes can be made, providing that suitable expertise is involved in the research. This type of approach has been somewhat discredited in the field of social impact research, largely because it has led often to development of policy responses which are insensitive to the opinions and feelings of the social groups affected. Such responses have frequently exacerbated rather than ameliorated the problems (Harvey 1977).

An alternative approach to social impact research is more relativistic. A greater effort is made to indentify the social impacts from the point of view of the people affected. Reports by the Berger Commission (1975) and the Lysyk Commission (1976) are examples of this approach. Similarly, the Human System of AOSERP has sought data on human responses to various changes in the region. These data have been required to facilitate a balanced assessment of social impacts resulting from development of the oil sands.

Quite possibly, some social groups in the Athabasca Oil Sands region, such as the indigenous people, might have been affected more than the in-migrant groups by the resource extraction activities. However, the principle of social equity in public policy development required the Human System research to be concerned with all social groups. Since the most rapid growth in the region occurred in Fort McMurray, particular attention was paid to that community in the course of the research program.

1.3.5 The Research Program

Research Program of AOSERP Human System consisted of four major components: (1) exploratory studies; (2) a conceptual framework study; (3) field studies; and (4) a compendium of socio-economic statistics for communities in the AOSERP study area, from 1961 to 1979 (Figure 3). The exploratory studies defined the research problems relevant to resource communities. The conceptual framework study identified policy-relevant research areas, i.e. the

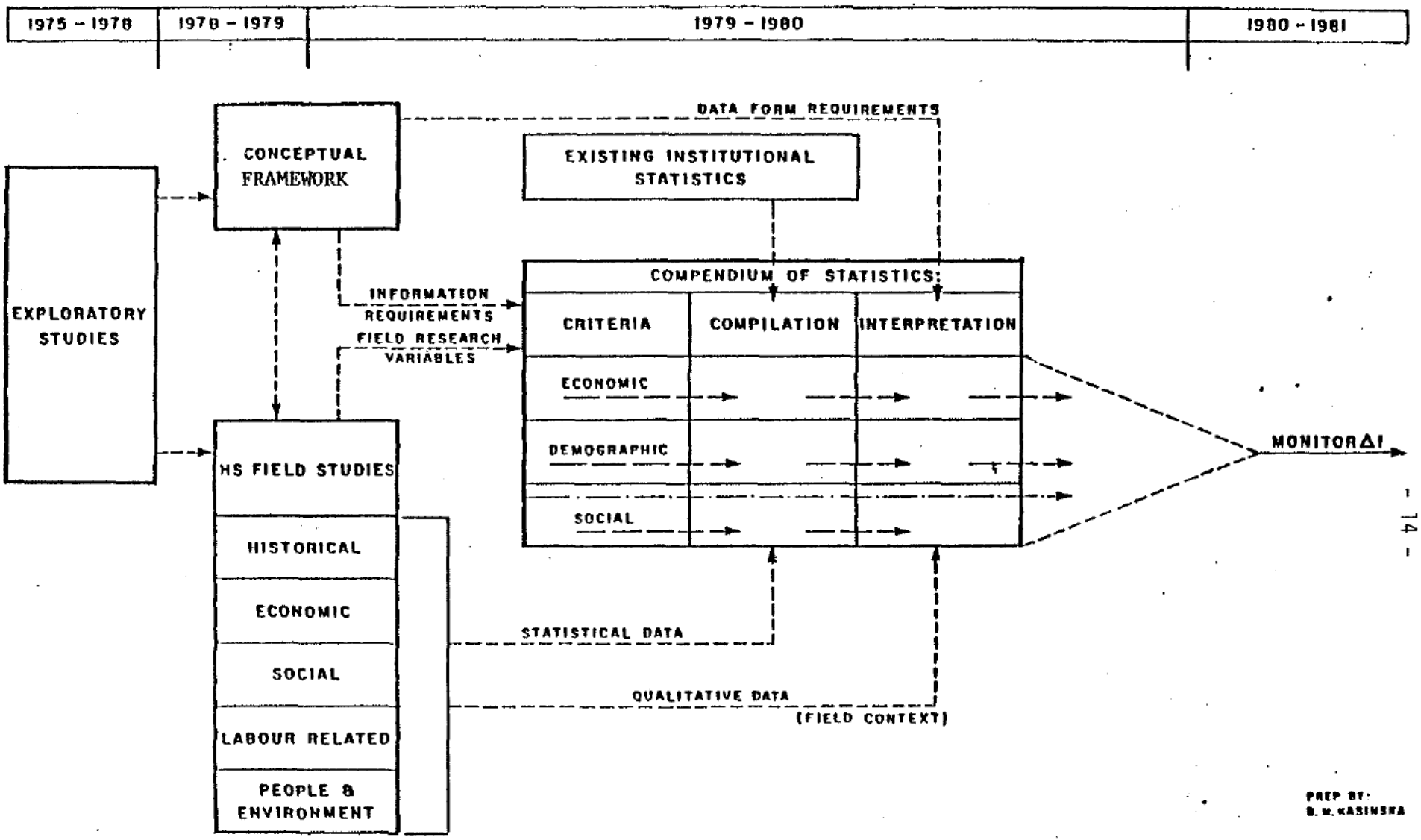

Figure 3. AOSERP Human System Research Components

areas amenable to public policy and management interventions by government departments or the oil sands industry. The field studies and the compendium of statistics generated information in response to the data requirements of decision-making agencies and to the concerns of local communities.

1.3.5.1 Exploratory Studies. These studies were undertaken during the first three years of AOSERP activities. Their purpose was to identify major problems which should be included in the Human System research program. Two tasks were accomplished by the exploratory studies. First, the research problems relevant to social impacts in resource communities were selected on the basis of a review of existing body of knowledge. Secondly, local people were interviewed to express their concerns with problems experienced or perceived in the course of oil sands development.

The exploratory research projects consisted of : (1) a review and assessment of exisiting information on communities in the AOSERP study area (McVey 1976; Millar 1977; Johnson 1979; Larson 1979; Parker 1979); (2) a review of relevant information on other resource communities and the related research problems (Assheton-Smith 1979; Berger 1980; Johnson 1979; Larson 1979; Snider 1979; Van Dyke, Loberg, Bai and Church 1979); and (3) preliminary identification of social impacts in the Athabasca Oil Sands region (Van Dyke and Loberg 1978).

This last exploratory study had obtained data on individual responses to life in Fort McMurray during the construction of Syncrude. The researchers lived in the community for six months, as participant-observers. During this time, they conducted in-depth interviews with 43 persons. Despite the small size of the sample interviewed, the study proved invaluable in developing insights into the current local concerns related to exploitation of the oil sands.

1.3.5.2 Conceptual Framework Study. The main objective of the Conceptual Framework study (Harvey 1980) was to identify policy-relevant research areas. A survey of several levels of government agencies and of the oil sands industry specified ten such research areas:

1. population;
2. employment and labour force;
3. housing;
4. education;
5. health, community, and welfare services;
6. culture and recreation;
7. protection services;
8. criminal justice;
9. municipal administration; and
10. physical services and regional infrastructure.

For each of those areas, relevant statistical variables were selected on the basis of their importance to the surveyed agencies and researchability (e.g. availability of data from institutional sources). The ten research areas and the variables included in each area served as the essential criteria for development of the Compendium of Socio-Economic Statistics for communities in the oil sands region.

In addition, the Conceptual Framework study identified five stages in the process of resource development: (1) pre-development or baseline; (2) exploration; (3) development or construction; (4) operational period; and (5) post-operational period. Possible changes in a resource community were discussed in terms of the policy-relevant research areas, in relation to the first four stages of the resource development process. The post-operational phase was not discussed by the study, because of the paucity of theory and data. That discussion provided the conceptual input necessary to develop a more systematic research on the demographic, economic, and social impacts of exploitation of the Athabasca Oil Sands.

1.3.5.3 Field Studies. This component was divided into five study sectors: (1) historical; (2) economic; (3) social; (4) labour related; and (5) the relationship between the natural

environment and people. In response to research problems identified by the Exploratory Studies, and to requests from members of the Human System Scientific Advisory Committee, different projects were implemented within each sector. Since some of the field studies had to commence before the Conceptual Framework was completed, issues covered by these studies did not always correspond directly to the policy-relevant research areas. Following is an outline of the field study sectors.

1. The Historical Sector focussed on socio-economic developments in the Athabasca Oil Sands region between the 1890s and 1960s. Two reports were prepared: Volume I based on research of primary sources in the National Archives in Ottawa (Parker and Tingley 1980), and Volume II based on an Oral History project (Parker 1980). Both the reports developed the historical context in which patterns of current changes in the region could be interpreted.

2. The Economic Sector involved a study of Local Economic Development since 1961 (Nichols 1979), and a study of Service Delivery in the region (Nichols 1980). These reports provided information on changes in the local economy, and on the relationship between demand for and supply of community services and facilities during the development of the oil sands.

3. The Social Sector consisted of a study of Human Adjustment in Fort McMurray (Gartrell, Krahn and Sunahara 1980). The study was based on a survey of a representative sample of 430 adults in the town, and was conducted in June 1979, after Syncrude had been operational for nearly a year. Analyses of the survey results furnished the information on human responses to living in a resource community such as Fort McMurray. The study covered various aspects of social and personal adjustment to local conditions of life. For comparison, the historical attitudinal data

obtained in 1969 by Matthiasson (1970;1971) were used, as well as results of the Edmonton Area Study (Population Research Laboratory 1979).

4. The Labour Related Sector included two studies pertaining to the employment of Native people in the region; Native Employment Patterns (Deines, Littlejohn and Hunt 1979), and a Study of Native Integration into the Fort McMurray Labour Force (Littlejohn and Powell 1981). These research projects attempted to identify methods which would facilitate better adjustment of Native people to work in the local industry. Also included in this Sector was a study of Impacts of Construction Camps on the People in Northeast Alberta (Parkinson, Montgomery and Humphreys 1980). The report reviewed the impacts of camp life on resident workers, and the major impacting factors in the relationship between local communities and the camps.

5. Research on the Relationship between the Natural Environment and People featured a literature based study of Human Perception of the Natural Environment (Marino, Collins and Brawn 1980); a research design for a study of environmental health in the oil sands region (Dennis incomplete); and a study of cultural and recreational Leisure Delivery System (MTB Consultants 1980). These studies were to furnish a conceptual base for future research on the effects on people of changes in the natural environment, which resulted from strip-mining of the oil sands deposit. The 1980 termination of AOSERP precluded further work in this direction.

Each of the field studies was designed to address a particular aspect of local conditions of life, and to identify any changes in these conditions. Most field studies helped to determine the magnitude of various changes and their characteristics, as well as the human responses related to these changes.

1.3.5.4 Compendium of Statistics. Early in AOSERP social impact research, a project was implemented to assess feasibility of a baseline data system for the oil sands region (McVey 1976). The term data system implied that all the data included should be compatible and amenable to computer manipulations. Deficiencies in the existing data sources and budgetary considerations prevented the Human System from establishing such a uniform data base. The decision was made subsequently, to develop a compendium of economic, demographic, and social statistics. The term compendium (i.e. summary) allowed for the inclusion of statistical time series which might not be compatible with the other data, but which would be necessary to illustrate specific changes in the region. The Compendium of Socio-Economic Statistics for the AOSERP Study Area (Harvey 1981) covered the period from 1961 to 1979, in some instances, including also earlier data.

Criteria for statistics compiled in the Compendium were provided by the Conceptual Framework study. The data came mostly from Statistics Canada census and non-census sources, and were enriched by pertinent information from the Exploratory and Field Studies. Statistics from the institutional sources were standardized whenever possible, so that changes in individual variables could be indentified. This procedure had also allowed to specify the general data requirements for monitoring any future socio-economic changes in the region. Should the regulatory and management agencies, the oil sands corporations, or local communities require the statistical information, it will always be possible to update the Compendium periodically.

1.3.6 Limitations of the Data Base

Information developed by AOSERP Human System about the process of social change in the Athabasca Oil Sands region between 1961 and 1980, was not comprehensive and uniform. Several major factors hampered the attempts to generate systematic and compatible data on changes which were induced by commercial exploitation of the oil sands.

The development and implementation of an integrated research program were inhibited by the budgetary constraints during the first three years of AOSERP activities, when the social impact research did not enjoy a very high priority. Many of the Human System studies were implemented only in 1978-79. Moreover, the need to reconcile divergent views of numerous agencies, on whose approval the implementation of some studies depended, contributed further to a lack of integration between the different research projects.

Finally, attempts to implement systematic (e.g. longitudinal) field studies were frustrated by the need to adopt a strategy which would minimize impacts of the research on local people, and especially the survey response burden. In the early 1960s, northeastern Alberta was designated as a special target area for economic development, because a significant number of people had lived there below the poverty line. As a result, the region was subjected to a series of populations surveys many of which were undertaken by university students. The local residents came to resent those surveys, more so because results of the studies never appeared to have reached communities in the region. To the detriment of AOSERP Human System, results of most of these studies seemed to have vanished together with the researchers.

Combined influence of the factors named above, as well as other difficulties, had resulted in the implementation of a research program which suffered from numerous limitations. Information on some of the topics had to be generated only on the basis of accessible existing data sources which were often inadequate. Some studies were approved too late to capture the phenomena they were to analyse. While other delays caused a lack of logical progression in the research process. These limitations led to various deficiencies in the information developed by Human System. The major inadequacies of the Human System data base were data gaps, a lack of substantive inter-relationships between data sets developed by the respective research projects, and the ensuing lack of data compatibility.

1.3.6.1 Data Gaps. Establishment of the baseline conditions which had existed prior to development of the oil sands was not always possible. Though some quantitative baseline data were obtained by the Compendium of Statistics (Harvey 1981), information was required to interpret these data in terms of values of the social groups affected by the development. An historical understanding of the baseline states was developed by asking the long-time residents to recollect the past events in the region (Parker 1980). In general however, the rapid pace of oil sands development made difficult the reconstruction of previously existing socio-economic conditions.

The Compendium study (Harvey 1981) standardized quantitative data and developed statistical time-series for most variables pertaining to the policy-relevant economic, demographic, and social conditions in the region, between 1961 and 1979. Some data gaps were found however, in the Compendium. The project relied mainly on the institutional data sources, of which Statistics Canada was the most important. The statistical time-series that had been developed, usually covered only the period from 1961 to 1976. A few statistical time-series covering a later period were generated on the basis of data from the Fort McMurray Municipal Census. The census had commenced in 1976, and was conducted annually thereafter. Since the Municipal Census did not collect information on all statistical categories required for the Compendium, the data gaps had resulted.

Apart from statistical data, little other information was found about the social conditions during the construction and early operations of the Suncor project. The most reliable information available pertained to the construction and early operations of the Syncrude project. As a result, both the amount and the quality of data obtained by Human System on the different stages of development of the two oil sands projects were uneven.

Some field studies were implemented too late to generate reliable information on their respective topics of enquiry.

For instance, a study of Impacts of Construction Camps in the region (Parkinson et al 1980) had to battle with the consequences of such late implementation. Although initially designed in 1976, the study was not approved for commencement until 1979, i.e. one year after the construction of Syncrude had ended, and nearly two years after the construction labour force housed at the Syncrude camp had peaked at 6600 people. In the absence of any statistics kept by camp operators, the researchers had to depend on the memories and impressions of people who were in the camp that still existed, housing 1000 workers, and on the newspaper and periodical reports material. As in some other instances, research began too late to produce rigorous data.

Equally difficult to obtain was reliable information about human responses to social changes in the region during all stages of the resource development process. The Oral History project (Parker 1980) generated some data on human responses to the early exploratory efforts to develop the oil sands. Virtually no information was found to assess responses of local residents to the construction of Suncor. The only existing survey data reflected attitudes of the residents to life in Fort McMurray in 1969, during the second year of Suncor's operations (Matthiasson 1970; 1971).

An impressionistic attitudinal information was generated in the course of Exploratory Studies, on responses of people to the changes associated with the construction of Syncrude (Van Dyke and Loberg 1978; Johnson 1979; Larson 1979). Attempts had failed to implement at that time, a longitudinal study which would monitor changes in human responses in relation to different stages of the development of Syncrude. It was not until 1979, that the Study of Human Adjustment (Gartrell et al 1980) had generated rigorous data on human responses to local conditions of life, including individual evaluations of the effects of oil sands development on the community of Fort McMurray. Although statistically reliable, results of this study pertained to the period when both Suncor and Syncrude were already operational.

The lack of any statistically reliable data on responses of the Fort McMurray residents to changes which were associated with the construction of Suncor and Syncrude, constituted a vital information gap. This information was required to interpret the impacts of exploitation of the oil sands in terms of values of the people affected by the development. Moreover, the attitudinal data which had been obtained reflected only individual human responses. Data on responses of the social groups and formal organizations in Fort McMurray had not been generated by AOSERP Human System.

1.3.6.2 Data Compatibility. Many Human System studies faced difficulties in attempting to develop compatible data sets pertaining to their subjects of enquiry, especially when the research was restricted to the existing information sources. Most of these data source documents suffered from major inadequacies and deficiencies. As noted by Nichols (1979:1-3), most data sources covered only a recent period, from 1975; many government studies were directed to specific and isolated fields of enquiry and were of limited usefulness; and overlapping and inconsistent data collection boundaries caused difficulties in interpreting the statistics. As a result, compatibility of statistical data developed by some Human System research projects was inadequate.

Another problem involved compatibility between the data bases developed by different studies. For instance, the Compendium study (Harvey 1981) computed the intercensal data prior to 1976, by means of logarithmic scaling, using the 1961, 1966, and 1971 Population Census statistics. Occasionally, serious data discrepancies were found between the statistical time-series contained in the Compendium study, and the data presented in the other Human System research reports. Such discrepancies were particularly significant when the information in those reports was based on data furnished by the Alberta Department of Municipal Affairs which, presumably, had developed reliable statistics

pertaining to the growth of Fort McMurray.

One of the most important deficiencies in AOSERP Human System data base stemmed from the lack of logical timing and progression in the implementation of different studies. The Conceptual Framework study (Harvey 1980), which should have been undertaken concurrently with the Exploratory Studies, was approved for implementation only in January 1979. At that time, work on research design for the Study of Human Adjustment (Gartrell et al 1980) had already begun, and some of the other Field Studies were also in progress. This situation precluded the use of results of the Conceptual Framework study in planning the scope of Field Studies and in developing research designs for most of these studies.

Similarly, the Compendium study (Harvey 1981), which identified changes in the socio-economic conditions in communities of the oil sands region, should have been implemented and completed prior to commencement of the Study of Human Adjustment. Such timing would have made the information on changes in the socio-economic conditions in Fort McMurray, available for designing the study which was to assess human adjustment to these conditions. Simultaneous implementation of these projects resulted in a lack of compatibility between the conceptual criteria relied upon, in relation to the policy-relevant research areas, by the Adjustment study and the Compendium study.

The lack of logical timing in the implementation of major components of the Human System research program resulted in few substantive inter-relationships between individual studies. An overall conceptual relationship between Human System research projects was forged in the course of planning of the research program. However, compatibility between the criteria used and the information produced by these projects was usually limited to those areas, for which Statistics Canada data sources were used. Consequently, the data base generated by AOSERP Human System was not as compatible and uniform as it should have been.

1.3.7 Summary

By 1980, two objectives of the Human System research program were met: (1) establishment of the baseline states; and (2) identification of changes in the economic, demographic, and social conditions in the region, with the special focus on Fort McMurray. Objective 3, i.e. interpretation of the patterns of these changes in the historical, regional, and community context, and assessment of their implications for future resource development, had not been met. To meet the third objective, it would be necessary to integrate and synthesize results of Human System studies on all communities in the Athabasca Oil Sands region. This research project was directed however, to consolidate results of the studies pertaining specifically to Fort McMurray alone. Hence, the present report will fulfill partially the third objective of AOSERP Human System.

Objective 4, which was to identify means to minimize any negative effects and to maximize positive effects of oil sands development on local communities, would have been contingent upon completion of the third objective. But the third objective will be met only partially, and AOSERP had been terminated. It might be expected though, that the regulatory and management agencies responsible for aspects of development of communities in the oil sands region, will pursue this last objective of the Human System of AOSERP.

1.4 RESEARCH METHODS

The main methodological question facing this study was, how to minimize the lack of uniformity and compatibility in the AOSERP Human System data base. If changes were to be identified in one socio-economic area, and assessed in relation to changes in the other areas, as well as in relation to different stages of the oil sands development, the information had to be compatibile. To overcome data deficiencies, and to meet the objectives of the Terms of Reference for this study, the following research strategy was applied:

1. After the research problem and the concept of social impact were defined more precisely, a conceptual approach was developed to the analysis of social changes in Fort McMurray between 1961 and 1980. An assumption was made that these changes should be analysed in terms of two related processes: that of resource community development and that of rapid industrialization and urbanization. Stages in the development of Fort McMurray as a resource community were considered to be simultaneous with and determined by the following five resource exploitation stages: (1) pre-construction phase; (2) construction of Suncor; (3) operations of Suncor alone; (4) construction of Syncrude while Suncor operational; and (5) both Suncor and Syncrude operational. Subsequently, a typology of social impacts characteristics of the process of industrialization and urbanization was postulated.

To meet Objective 1 of the Terms of Reference, four policy relevant research areas were selected for the integration of results of the Human System studies: (1) population; (2) employment and labour force; (3) housing; and (4) services and facilities. In each of these areas, several pertinent specific variables were included. The fifth research area which was selected, consisted of human responses to changes in the policy relevant areas. A conceptual relationship between the selected research areas and the postulated typology of social impacts was then delineated.

2. A strict and rigid interpretation of the Terms of Reference could have limited this study to the examination of changes in Fort McMurray within the defined time-frame from 1961 to 1980. An analysis of the process of social change should be set however, within an historical context. The last century of history of the Athabasca Oil Sands region was thus reviewed, including its economic, social, and political aspects. To emphasize the scale and magnitude of Suncor and Syncrude projects, development of both these operations was described in some detail.

3. Data on each policy relevant major research area were then consolidated for each stage of development of Suncor

and Syncrude, to meet Objective 2 of the Terms of Reference. Since the first four stages of the development featured one of the following Population Census years: 1961, 1966, 1971, 1976 (Table 1), these years were considered as focal points for the integration of data from the Compendium. The statistics for the census years had been standardized by the Compendium study, and were therefore, compatible. For the last stage of development, information generated by the Study of Human Adjustment on the basis of the 1979 survey of Fort McMurray, was related to data provided by the 1979 Fort McMurray Municipal Census, and was then integrated in this report.

Neither the Compendium nor the Adjustment study had developed information on all the issues which were pertinent to the selected major research areas. Generally, data not collected by the institutional sources were not included in the Compendium, and events which had occurred prior to 1979, were not covered by the Adjustment study. Information on some of those issues came from the remaining Human System research reports. This information was consolidated, regardless of whether it was quantified and analytical or qualitiative and descriptive. Such approach allowed to fill some information gaps, and to assess the changes identified by means of statistical analysis, from the point of view of the people affected by these changes.

4. Both the statistical and the qualitative information was integrated into four 'working' chapters, each pertaining to one of the four policy-relevant research areas. Variables included in these chapters were grouped into three categories necessary to identify any changes: (1) the size and magnitude; (2) the characteristics; and (3) the human responses related to these. This method was followed for each of the five stages of development of the oil sands projects.

5. To relate the information on conditions in all four policy-relevant research areas to different stages of development of the oil sands operations, the 'working' chapters were dissected. From each chapter, information pertaining to the

specific stage of resource exploitation was extracted. This information was then integrated into five chapters, each dealing with the respective stage of development of Suncor and Syncrude. The foregoing procedure had met Objectives 3 and 4 of the Terms of Reference.

This study assumed that the stages of commercial exploitation of the oil sands determined the stages of development in Fort McMurray. The consolidated information on socio-economic conditions in Fort McMurray during each stage of development of Suncor and Syncrude provided therefore, the information about the process of social change which was associated with the development of the resource. The patterns of socio-economic changes in the community were then identified and summarized.

1.5 ORGANIZATION OF THE REPORT

Following this Introduction, the conceptual approach adopted to the integration and synthesis of results of AOSERP Human System studies is presented in Chapter 2. The Athabasca Oil Sands region, its geographical setting and history, and the attempts to commercially exploit the "tar sands", which have culminated in the development of Suncor and Syncrude, are described in Chapter 3. Chapter 4 discusses policy responses of the Government of Alberta to commercial exploitation of the oil sands, including the developmental strategy and public administration in Fort McMurray.

Each of the next five chapters, i.e. Chapter 5 to 9, deals with one of the stages in the development of Suncor and Syncrude oil sands projects. These chapters contain information about the four policy-relevant research areas: population, employment and labour force, housing, and services and facilities. Conditions prevailing in each area are described and analysed. Any changes in these conditions are assessed in terms of their magnitude and characteristics, and the human responses related to these.

In Chapter 10, which concludes this report, patterns of social change in Fort McMurray are identified and summarized for the study period from 1961 to 1980. The report closes with a bibliography of the sources used.

2. CONCEPTUAL APPROACH

As a continuation of AOSERP Human System post-impacts analyses, this research project constitutes a study of social change induced in Fort McMurray by commercial exploitation of the Athabasca Oil Sands deposit. The present chapter introduces the conceptual approach adopted by this study. It is argued that socio-economic changes in Fort McMurray between 1961 and 1980, have been rooted in the process of rapid industrialization and urbanization. First, however, the research problem should be defined more precisely, and the concept of social impact discussed in some detail.

2.1 RESEARCH PROBLEM

To understand the process of rapid social change and its consequences for Fort McMurray, it is necessary to analyse social impacts exerted upon the community by commercial exploitation of the oil sands. The assumption of this study is that major stages in the development of Suncor and Syncrude have determined the stages in the development of Fort McMurray, including the types of changes which have occurred in the community during each of these stages. The main research problem involves an analysis of the relationship between stages of development of the two oil sands projects and the resulting demographic, economic, and social impacts in Fort McMurray.

A causal interpretation of social impacts in relation to the process of oil sands development will pose difficulties. It may not always be possible to distinguish the changes which have occurred as a result of the resource extraction activities from those which have occurred as a result of other socio-economic or political processes. For instance, involvement of the provincial government in the development of Fort McMurray has constituted an intervening "other" process.

In real social situations, the establishment of "cause" and "effect" relationships is always difficult. Even if AOSERP Human System implemented systematic longitudinal studies, these studies may not have isolated the specific elements of resource development process to which certain outcomes can be attributed. By monitoring the changes, merely the outcomes can be determined; the exact cause of these outcomes may not be identified. Although some trends in socio-economic changes in the community can be established, a casual interpretation of these trends may have to remain within the realm of educated guesses and conceptual extrapolations.

However, a conceptual understanding of the causality of social impact process should be developed. Such a conceptual understanding may help to anticipate the types of social impacts likely to result from any future oil sands projects. It may also help to develop strategies for the planning of communities which could be associated with future resource extraction activities in the Athabasca Oil Sands region.

2.2 SOCIAL IMPACT CONCEPT

The concept of social impact on a community implies that: (1) there is a defined community with relatively stable patterns of social behaviour, social relationships, and way of life; (2) some identifiable intervention (e.g. construction of a resource project) takes place; (3) this intervention has consequences which result in changes in the patterns of social behaviour, the social relationships, and the way of life; and (4) these changes are different from or in addition to those which would have occurred as a result of processes operating already in the community (Bowles 1979:10). In the most basic terms, the intervention can be seen as a stimulus and the changes as a response by means of which the community adapts to altered conditions and, in time, achieves a new level of relative stability.

In reality, the situation is more complex. Neither the impacted community nor the impacting project exist in isolation. Each is a product of the broader socio-economic and political processes rooted in the respective historical contexts. Historically, the community of Fort McMurray has been shaped by its geographical role as an important transportation terminus connecting the south with the far north; by its regional role as a local trading and supply centre; and by its national role as an agent of the industrial economy of southern Canada. The development of Suncor and Syncrude projects, while constituting the localized event in the exploitation of global petroleum supplies, has been determined by the geographical location of the deposit, and stimulated by improved technology, favourable oil prices, and the desire to lessen Canada's dependence on imported oil.

Since a community is a part of a region, resource development activities which may be centered in one community, will affect the remaining communities of the region. Moreover, each region has patterned economic, social, and political relationships with other regions. Historically, the relationship of northeastern Alberta with central Alberta has been influenced by the status of the former as a hinterland, and the status of the latter as a metropolis which has exploited the natural resources of the Athabasca country. This relationship has also shaped the patterns of relationships between Fort McMurray and Edmonton. Such patterns of inter-regional relationships may have conditioned the responses in Fort McMurray and in other communities of the region to commercial development of the oil sands. Therefore, an analysis of social impacts in one community,

> "...while a localized study of social change, must well take into account the more general processes of change which are occurring in the society at that time" (Bowles 1979:12).

Given these considerations, social changes induced in Fort McMurray by the development of Suncor and Syncrude should be viewed in the context of two related processes. The first is the

process of resource extraction activities which, during the recent years, has dominated the economic life in most parts of Alberta. This process has also led to the development of new resource towns in the Province. Although the history of Fort McMurray as an outpost of the European expansion into the North has set it apart from these new resource towns, the community's rapid urban growth has resulted from the development of the oil sands. For the purpose of this study, Fort McMurray is considered to be a resource community, and the social impacts it has experienced will be analysed in the context of a resource community development. This context is discussed in section 2.3 of this chapter.

The second process is that of industrialization and urbanization which has accompanied some of the current resource exploitation endeavours in Alberta, and which has also shaped the development of Fort McMurray. Extraction of synthetic crude oil from the oil-bearing sands is not limited to mining the raw material and shipping it to an industrial centre. The bitumen is mined and oil is then extracted from the sand with a hot water wash-flotation process to prepare synthetic crude for shipment. The mining combined with the on-site complex industrial processing requires a relatively large permanent labour force. As a consequence, the in-migration of mine and processing plant workers with their families has necessitated the construction of new housing and the provision of additional commercial and other services and facilities in Fort McMurray.

While the process of production of synthetic crude from the oil sands has culminated in the construction of two industrial complexes in the region, the accommodation of the permanent labour force involved in that production has generated a population rise which has led to rapid urbanization of Fort McMurray. The development of Fort McMurray as a resource community will be analysed within the context of the types of socio-economic changes which are characteristic of the process of industrialization and urbanization. This aspect is discussed in section 2.4 of this chapter.

2.3 RESOURCE COMMUNITY DEVELOPMENT

Development of a resource community involves usually two major dimensions: exploitation of the local resource base, and the provision of a habitable living environment accompanying that exploitation. In the experience of most resource towns, emphasis is placed first on building the means to extract the resource, and on the associated economic concerns. Some of the ensuing economic concerns however, such as the high cost of labour turnover, cannot be alleviated unless social concerns related to the local conditions of life are also alleviated. A gradual shift occurs therefore, from economic concerns involving resource extraction activities, towards concerns involving the quality of life in a resource town. Whether priority is given to the economic or to the social concerns depends generally, on a particular stage of resource exploitation process.

Two typologies of the different stages in resource community development are discussed in this section. The first typology has been postulated by Riffel (1975; 1977). The second typology, which represents a modification of Riffel's typology, has been conceptualized by Harvey (1981). Following the discussion of these two typologies, stages in the development of Fort McMurray between 1961 and 1980, are identified.

2.3.1 Typology of Stages in Resource Town Development

The first systematic typology of stages or levels of maturation in the evolution of resource communities has been developed by Riffel (1975;1977). According to Riffel, the shift from concerns with resource extraction alone towards concerns with the quality of life occurs through the following seven phases: (1) natural or pre-discovery; (2) prospecting to survey; (3) industrial and town construction; (4) industrial operation and community improvement; (5) industrial and community operation; (6) community diversification; and (7) community maturity. Each of these stages features different economic, demographic, and social characteristics, which are presented in Figure 4.

Stage	Economic characteristics	Demographic characteristics	Social characteristics
Natural or prediscovery	No economic activity or only hunting and fishing by native peoples.	No population or only small bands of native peoples.	Unpopulated or small, isolated native communities in limited contact with white society.
Prospecting to survey	Short term activity. Money spent "outside". Traditional native economy persists, with some trade with whites.	Short term, summer residents Young men, no women. If there originally, native people in the majority.	Isolated. Usually, access by air only. Shack towns without amenities. Some contact with native peoples.
Industrial and town construction	The first boom period. Mushrooming economic activity. Natives may be employed.	Mostly single men. Some young workers with families. Very high turnover rates. Native in minority; only stable group in population.	Isolated, but easier access to outside. Trailer towns with basic amenities, and "pub". Signs of social problems among native peoples.
Industrial operation and community improvement	Shift in construction from industrial to residential and commercial. More money spent in town. Falling off in employment of natives.	Slowing rate of turnover. Increasing number of married workers. Native peoples a small minority.	Improvement of housing and community facilities. Completion of roads and communications services. Reduced social problems among whites; increased among natives.
Industrial and community operation	Construction over. Services established. Much of labour skilled. Few natives employed.	Turnover rates reduced to 60%. Young married workers in majority.	Amenities well developed. Few social problems among whites, but boredom among wives. Natives on welfare. Marked stratification.
Community diversification	Stabilization of industry. Expansion of other services, especially government. Small manufacturing.	Labour turnover stabilizes at 35%. Young marrieds in majority.	Employment for wives available. Special programs created, largely for native people.
Community maturity	Diversified economic base. Limited opportunities for expansion.	Balanced population structure in terms of age and sex. Low rates of turnover.	Sense of community and belongingness. Whites and natives on welfare. Less racial tension.

Figure 4. Stages and Characteristics of Resource Town Development
(Riffel 1977)

The typology postulated by Riffel, describes the characteristics of stages in resource town development, but provides no explanation of the process by which the social impacts occur. Moveover, it separates the process of development of a resource community into much too detailed stages to be generally applicable to the analysis of that process. Harvey (1981:227-9) notes three additional reasons why the application of Riffel's typology would pose analytical problems. First, the "natural or pre-discovery" stage assumes the existence of a social system virtually untouched by modern society. Fort McMurray however, has been established as an outpost of that society over one hundred years ago, and has experienced a first economic "boom" as a result of oil speculation as early as 1907. Since most remote localities in Canada have been impacted already through trading, government services, or earlier resource development, it may be difficult to find a community which could be classified as that in a "natural or pre-discovery" stage.

Secondly, it is difficult to identify clearly Riffel's stages of development in Fort McMurray. The community has experienced previous development as a result of resource exploitation by Suncor; the introduction of Syncrude project has led to a renewed community development. Since the construction of Syncrude has been superimposed upon the operations of Suncor, the economic, demographic, and social characteristics coincident with the operational stage of Suncor have been impacted by those coincident with the construction stage of Syncrude.

Finally, different industries tend to affect a given community in different ways. An analysis of energy development impacts in the western United States has identified several socio-economic factors which vary with the type of resource industry. One of the more important among these factors is the educational and skill level required of the labour force involved. Even a small overall difference in the skill levels may affect the distribution of other demographic characteristics of the in-migrating

population, the nature of the family structure, the housing needs, and the type of social services and community infrastructure required (Murdoch and Leistritz 1979, cited in Harvey 1981:229). Since the oil sands industry relies on a new and very complex technology, it may be expected that the educational level of its labour force would be higher than that found in coal mining or oil rig operations. But Riffel's typology makes no provision for such differences between the impacting projects.

2.3.2 Modified Typology

To shift the emphasis from the description of effects of resource development on a community to the analysis of processes by which the impacts occur, Harvey has modified Riffel's typology by collapsing the seven stages into five: (1) baseline state; (2) exploration by the industry or company; (3) construction of a project; (4) operation of a project; and (5) maturity and/or decline of a community. The relationship between stages of resource town development identified by Riffel and the modified typology proposed by Harvey (1981:227) is illustrated in Table 2.

This modified typology assumes that the development of a resource town is shaped by different stages and specific characteristics of the resource development process. Particular stages of resource exploitation will determine the stages of development of the community involved. These stages will depend on the activities of an individual company or industry, if the activities of the respective companies are concurrent. Since the nature of resource extraction activities will vary with different industries and projects, specific characteristics of a resource industry may affect the community in different ways, resulting in different kinds of social impacts (Harvey 1981:228-9).

The modified typology proposed by Harvey, allows us to focus on the process which affects the development of a resource town; it is also sufficiently broad to be applicable to social impact analysis in various situations. Thus the baseline state can

Table 2. Relationship Between Stages of Resource Community Development According to Riffel and the Stages of Resource Community Development Modified by Harvey (1981:228).

	Riffel's Typology	Modified Typology
1.	Natural or pre-discovery	Baseline.
2.	Prospecting to survey	Exploration.
3.	Industrial and town construction	Construction (of company/s).
4.	Industrial operation and community improvement	
5.	Industrial and community operation	Operational (of company/s).
6.	Community diversification	
7.	Community maturity	Maturity and/or decline

be considered to represent any state of a defined community prior to the introduction of an intervening project. Exploration by an industry or a company may take different forms; depending on its location and magnitude, it may or may not affect the community in perceptible ways. Construction of a project constitutes the identifiable intervention, while its operational stage results usually in additional interventions in the community life. Both these stages are likely to have consequences which may change the prevalent patterns of social interaction and the way of life.

The operational stage may be followed by community maturity, community decline, or community maturity followed by decline. Community maturity is reached when the economic base of the community diversifies beyond the resource industry, resulting in an economic development. Community decline occurs when there is no diversification of the economic base, and the resource industry closes its operation (e.g. Uranium City).

Community maturity followed by decline can be found in those instances where the economic base has diversified sufficiently to sustain the community for a period of time after the closure of the resource operation, but not sufficiently to sustain the community in the long run (Harvey 1981:232).

2.3.3 Stages of Development in Fort McMurray

This study has assumed that stages in the development of Suncor and Syncrude oil sands projects have determined the stages and shaped the nature of socio-economic changes in Fort McMurray. Table 3 identifies the major stages in the development of Suncor and Syncrude, and the related general stages of urban development in Fort McMurray. This Table is based on the typology of resource town development proposed by Harvey, and on an overview of the main features in the development of Fort McMurray, presented in Table 1 (Chapter 1).

Table 3. Stages in the Development of Suncor and Syncrude Projects Between 1961 and 1980, and the Related Stages of Development in Fort McMurray.

Time-frame	Stages of Development
1961-1963	Pre-construction period (including Baseline state and Explorations).
1964-1967	Construction of Suncor; related urban development in Fort McMurray.
1968-1973	Suncor project operational; related urban development and community stabilization.
1974-1978	Construction of Syncrude, while the Suncor project operational; massive renewed urban development in Fort McMurray.
1979-1980	Both Suncor and Syncrude projects operational; related urban development and community stabilization.

Application of any conceptual framework to reality inevitably leads to some arbitrary decisions. The identification of different stages in the evolution of Fort McMurray has required such decisions. First, there is an arbitrary definition of the pre-construction period, which includes baseline state and oil sands explorations. The time-frame of this study calls for an analysis of social changes in Fort McMurray since 1961, i.e. long after the baseline conditions existing prior to development of the oil sands have been altered. The geological and technological explorations have influenced the community since the end of the nineteenth century. These have culminated in the late 1950s, in a wave of experimental oil sands projects. It is not certain to what extent these early experimental plants have initially impacted Fort McMurray, but by 1961, the pilot plants have become a permanent feature of life in the region. It is safe to assume that the town has adapted to their continuous presence, because at the time, Fort McMurray has constituted a relatively stable community.

Secondly, arbitrary are also the dates denoting different stages of the resource exploitation process. For no construction of the two oil sands projects has begun without such preparations as cutting access roads or site clearing. Similarly, no production has commenced without some involvement of the construction labour force. Since the activities related to one stage of resource exploitation have carried over into the next stage, the cut-off dates should be viewed mainly as guidelines in the chronology of stages of development of the oil sands industry.

Each of these stages has exerted impacts which have resulted in different kinds of changes in Fort McMurray, shaping the pace and characteristics of its urbanization. To analyse the relationship between specific stages of development of the oil sands industry and their impacts on the community, it is necessary to identify the nature of socio-economic changes which tend to be associated with the process of industrialization and urbanization.

2.4 INDUSTRIALIZATION AND URBANIZATION

Throughout the process of industrialization and urbanization, changes usually occur in the socio-economic structure of a

community, i.e. in such variables as employment, population, and income. These changes affect the local conditions of life which, such as housing and community amenities, tend to depend on the structural variables, as well as the established patterns of social behaviour, and the way of life. It is a part of the art of planning that some of those changes can be anticipated in advance of their occurrence. Both the anticipated and the actual changes may result in a variety of human responses. Such responses can come from individuals, social groups, and formal organizations, and may be either proactive or reactive. The human responses may alter various aspects of life in the community. Among the responses of formal organizations, those of public administration can play particularly significant role in affecting changes in the local conditions of life or even in the structural variables. The administrative programs and policy measures may define the conditions which must be met before permission is granted to develop an industrial project, and may impose regulations which must be observed in the course of construction and operations of a particular industry.

Impacts experienced by Fort McMurray between 1961 and 1980, were rooted in the process of rapid industrialization and urbanization. The requirement for a processing plant to produce synthetic crude oil from the bitumen had culminated in the construction of massive industrial complexes at the Suncor and Syncrude sites. Both the industrial projects were built within a relatively short time-span. Even though the plants had been located between 32 km and 40 km north of Fort McMurray, roughly one-half of the employed residents of the town worked in 1979, directly for either Suncor or Syncrude. In addition, some secondary industries necessary to service the oil sands projects had been established locally. The production of synthetic crude oil had become the region's main industrial and economic base.

Urban expansion of Fort McMurray proceeded at the most rapid pace during the respective industrial construction stages, and also during the early years of operations of the oil sands plants.

The associated socio-economic changes were related directly to the process of industrialization and urbanization which had stemmed from commercial exploitation of the resource. The employment generated by the oil sands industry and urban expansion of Fort McMurray had induced a population growth which was without precedent in Alberta or northern Canada (Figure 5). The changes which occurred in the population, employment, income, local conditions and the way of life, resulted in various human responses in the community. Apart from the individual and social group responses, both proactive and reactive policy responses of the Government of Alberta and of public administration in Fort McMurray were especially important to the development of the town.

2.4.1 A Typology of Impacts

Conceptually, impacts which would be associated with the process of industrialization and urbanization, can be perceived in terms of the primary, secondary, and tertiary levels. The primary impacts would consist of changes in the structural variables; the secondary impacts would consist of changes in the second order socio-economic conditions, which are generally determined by the structural variables; and the tertiary impacts would consist of proactive and reactive human responses to changes in the structural variables, second order socio-economic conditions, established patterns of social behaviour, and the way of life. The human responses can result in a feedback effect which may affect the nature of all the three levels of impacts, by inducing changes in the structural variables and local conditions of life.

The three levels of impacts and the feedback effect have existed in varying intensity during each stage of development of the oil sands industry. Before ascertaining whether the proposed conceptual typology of impacts is analytically feasible, the selected major research areas which pertain to socio-economic changes in Fort McMurray, will be presented.

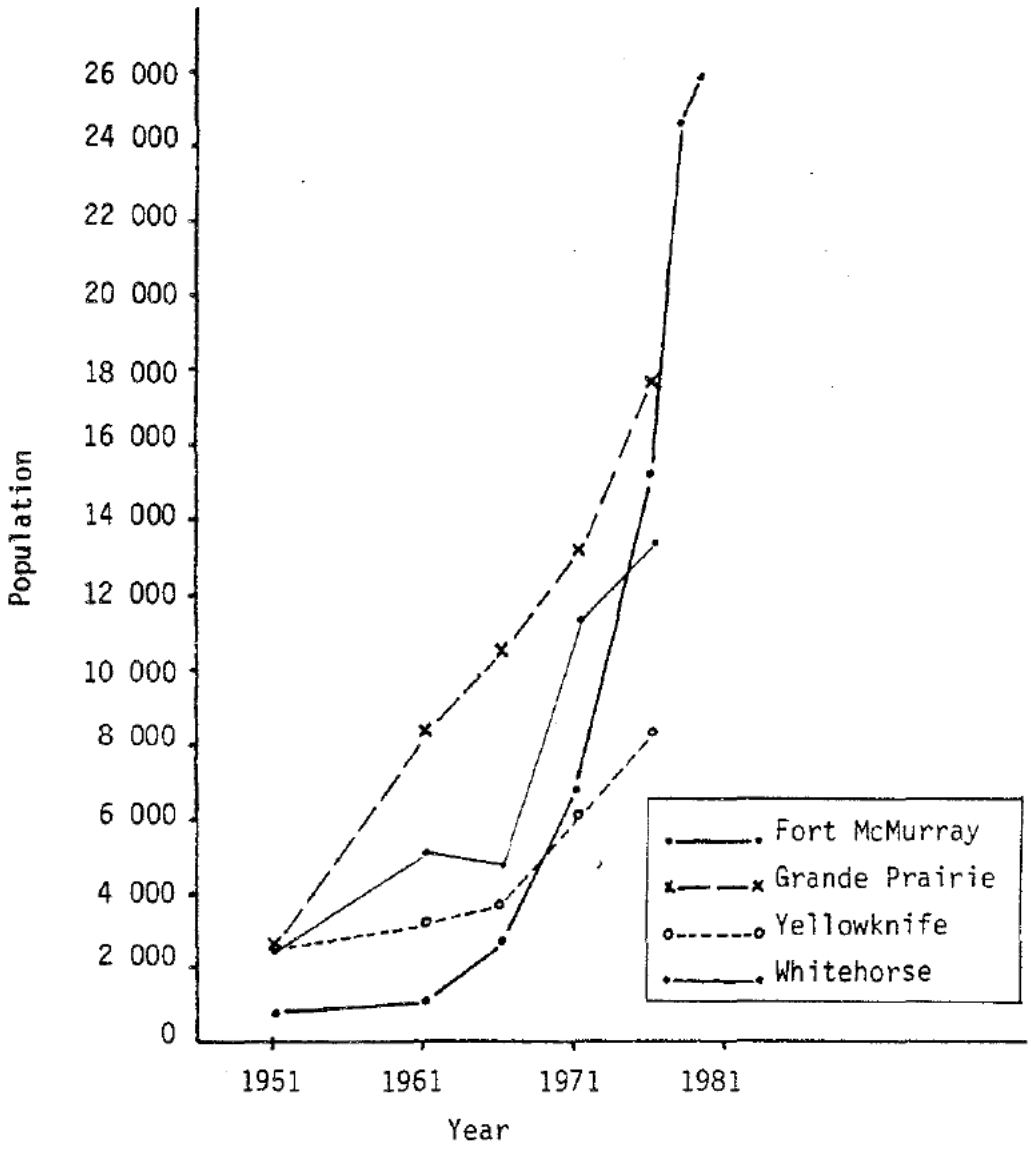

Figure 5. Population growth in northern communities: 1951-1978 (Gartrell et al 1980:41).

2.4.2 Relevant Research Areas

Several criteria were important in deciding which areas to include for purposes of the integration and synthesis of results of AOSERP Human System studies. First, the Terms of Reference required this report to focus on research areas which would be relevant to government agencies and oil sands industry. The relevance of a given research area would depend on the ability of an agency to influence in practice, appropriate variables within that area, i.e. on the amenability of an area to public policy or management interventions. Secondly, the areas had to reflect concerns of the residents in Fort McMurray. Although some of those concerns could be related to conditions which might not be alleviated by means of public policy, the community responses were viewed as an integral element of social impact research. Thirdly, whether the integration of data on a particular research area was possible, had been determined by the amount and quality of information contained in the Human System reports.

Finally, consultations with members of some agencies which had been represented on the Human System Scientific Advisory Committee, and with significant members of the community of Fort McMurray indicated that the scope of this report should be as broad as possible. In their opinion, an integrative study which would focus on a few specific variables would be less useful than a study which would include most aspects covered by the Human System research. The selection of areas for the integration and synthesis of results of AOSERP Human System research reports was influenced by all of the foregoing considerations.

To analyse the socio-economic changes in Fort McMurray between 1961 and 1980, the ten policy-relevant areas identified by the Conceptual Framework study (Harvey 1980) were grouped into four major research areas: (1) population; (2) employment and labour force; (3) housing; and (4) services and facilities. The fifth research area, entitled Community Responses, was selected to illustrate the responses of local residents to changes in the four major

research areas. Within each of the five research areas, the following variables were identified for the integration and analyses of results of the Human System studies:

1. Population: its size and the rate of growth; and its characteristics including age and sex composition, marital status, ethnicity, language, religion, education, geographical mobility, and family and household characteristics.

2. Employment and Labour Force: its size and the rate of employment and unemployment; and its characteristics including sex, education, occupational distribution, and income.

3. Housing: its amount including total value of construction; and its characteristics including types of dwellings, ownership patterns, water supply, bath and toilet facilities, rooms per dwelling, and density of persons per room.

4. Services and Facilities: their amount including an overview of the supply and demand situation, and of the characteristics of:
   - retail, business service, and manufacturing,
   - health, community, and welfare services,
   - education,
   - culture and recreation,
   - protection and criminal justice, and
   - physical services and regional infrastructure.

5. Community Responses: including individual, group, and administrative responses to the changes in:
   - population,
   - employment and labour force,
   - housing, and
   - services and facilities.

The five research areas selected for the study of socio-economic changes in Fort McMurray, correspond to the three levels of impacts which tend to accompany the process of industrialization and urbanization. Since Population, and Employment and Labour Force constitute structural variables, any changes in these variables would belong to the primary impacts. Housing, and Services and Facilities represent the second order socio-economic conditions; any changes in these conditions would belong to the secondary level of impacts. Finally, Community Responses would belong to the tertiary level of impacts. A conceptual relationship exists therefore, between the selected research areas and the postulated typology of impacts.

2.5 ANALYTICAL IMPLICATIONS

Each of the selected research areas is of particular significance in the development of an industrial resource community. This section will discuss possible implications of changes in these areas to the evolution of Fort McMurray. The discussion will focus on the structural variables, local conditions of life, and community responses. In conclusion, analytical feasibility of the postulated conceptual typology of impacts will be ascertained.

2.5.1 Structural Variables

Demographic changes are especially important in assessing the primary socio-economic impacts of resource development on a community. These changes affect the demands made on local economy, and on community services and facilities. Consequently, they affect the operations of private and government agencies responsible for the delivery of various services. Changes in the size and characteristics of the population may also disrupt community stability and increase the incidence of all kinds of social problems. For instance, a sudden influx of the transient construction labour force composed mainly of young single males, who "work hard but also drink hard", may lead to a housing shortage, increase the occurrence of alcohol related

offences, strain the community services, and result in a high population turnover. In fact, such is the frequently encountered stereotype of a northern resource community in Canada (Gartrell et al 1980:41-2).

In most resource communities, the rate of growth of the population depends on the labour force requirements of the resource industry and on the associated rate of growth of local employment opportunities. Work is central in the lives of most adults, and while it is useful in bringing order and meaning to life, it contributes to the sense of identity and self-esteem of an individual. Work offers economic self-sufficiency, status, family stability, and an opportunity to interact with others in one of the most basic activities of society. It is the opportunity to work that brings most people to resource towns.

If the opportunity to work is absent or if the nature of work is unsatisfactory, severe social problems may emerge in the community. Dull, repetitive, and seemingly meaningless jobs which offer little challenge or autonomy, would cause discontent among workers at all occupational levels. The dissatisfaction with employment and the related increasing work problems may lead to a decline in physical and mental health, family stability, and community participation and cohesiveness. These phenomena could be accompanied by an increase in alcohol and drug abuse, aggression, and delinquency (W.E. Upjohn Institute for Employment Research 1973:1-28).

A growing body of research indicates that for workers with higher education and greater life aspirations, to have an interesting job will be as important as to have a job that pays well. Pay is extremely important to most people as it must support an "adequate" standard of living, but pay alone will not lead to job and life satisfaction. However, one of the main attractions of resource towns seems to be their image as a "place to make money". Issues surrounding the structure of employment, compositions of the labour force, level of income, and work satisfaction would constitute therefore, the second most important component of the primary impacts in Fort McMurray.

2.5.2 Conditions of Life

All communities would experience some difficulties in developing and maintaining sufficient amount of good quality housing, and comprehensive and efficient services and amenities. These difficulties may become quite severe in rapidly growing and relatively isolated resource towns (Gartrell et al 1980:125; Lucas 1971; Riffel 1975). In such towns, the demand for housing and for community services usually outstrips the ability of planners and administrators to provide them. For changes in the structural variables, including rapid growth of the population and income per capita, would increase the demand for housing, community amenities, and different goods and services, causing imbalances between their limited supply and the growing demand.

As noted previously, the development of means to extract the resource and of such aspects of the regional physical infrastructure as roads and airports, usually precedes the provision of housing and community facilities. In addition, the provision of physical social amenities, including housing and urban infrastructure, tends to precede the provision of "soft" social services. Consequently, in most resource towns, conditions of life would improve only gradually, and considerable secondary impacts may be associated with the lack of adequate housing and comprehensive amenities.

Historically, there has been conclusive evidence that housing plays an important role in the development of a community, and that provision of housing is fundamental to the needs of a growing population. In northern resource communities in particular, stability of residence is an important facet of community stability, and the quality of housing an important factor in the quality of life. The lack of satisfactory housing may constitute in fact, "a critical part of a 'negative feedback loop' which sees growth create dissatisfaction and instability in the community" (Gartrell et al 1980:76). The amount, type, and quality of housing, as well as the housing costs,

and the quality of neighbourhood environment would be vital to the assessment of secondary impacts in Fort McMurray.

The level of provision of community facilities and social services would also affect to a significant degree the local conditions of life. That the development of "soft" social services takes place usually after the demand for economic and physical social amenities has declined (Brawn 1975; Riffel 1975), may lead to severe over-taxing of the existing service agencies. The ensuing over-extension of their staff and facilities would be due to three major factors. First, rapid growth of the population would induce the growth of demand for all community services and amenities, increasing also the work-load of social service agencies. Secondly, since some social service agencies are often absent from the community in the early stages of the development, the existing agencies would have to deal with cases normally handled by other jurisdictions. Thirdly, the "boom town" conditions which tend to prevail during the resource construction stages, can result in higher levels of social and personal stress. In response to the stress, various social and personal problems may occur in the community, increasing further the case-load of local service agencies (Nichols 1980). As a consequence, the effectiveness of existing social services would deteriorate, magnifying the secondary impacts being experienced by the community, especially during the periods of rapid industrial and urban growth.

Finally, imbalances between the limited supply of such amenities as serviced urban land, housing, and retail and trade services and the growing demand for these amenities would result in local inflation. The inflation would be particularly noticeable in the cost of labour, urban land prices, housing costs, and in the cost of various commodities and business services. Depending on the people affected, such secondary impacts may result either in new opportunities for economic and social advancement or in economic and social deprivations. For example, because of the shortage and high cost of skilled labour, young educated people may be able to obtain a satisfactory and well paid employment in the resource town. But the

people with low level of education and skills may remain unemployed, while those on fixed income may find that they are no longer able to live in the community above the poverty line. Although oil sands development would constitute an economic opportunity for some people, it may also result in economic and social deprivations for others. These types of disparities tend to accompany many economic development efforts and have been observed elsewhere in northern Alberta (Mellor and Ironside 1978).

2.5.3 Community Responses

Resource exploitation process featuring rapid changes in the socio-economic structure and local conditions of life would disturb the community's existing social equilibrium. As the importance of traditional economic activities diminishes, new norms and patterns of social behaviour appropriate to an industrial urban society have to emerge. The abrupt socio-economic transformations may induce individuals, social groups, and formal organizations to respond in various ways, resulting in numerous tertiary impacts.

In general, rapid changes tend to increase the propensity for personal stress and social conflict, leading to a higher incidence of social and personal problems. Rapid industrial and urban development of a small northern community can constitute a major imposition upon the indigenous residents. For the newcomers, the move to a resource town may be an equally shocking experience, but would depend on their background and on the conditions found upon arrival. Other social implications of rapid changes in a resource community have been indicated in the preceding sections, dealing with specific structural variables and second order socio-economic conditions.

The nature of human responses and thus of the tertiary impacts would depend on such factors as whether the changes have resulted in new socio-economic opportunities or in disadvantages, and whether they are perceived to be beneficial or detrimental. The reactive and proactive human responses can be both attitudinal

and behavioural. These responses can be socially desirable, for example, when efforts are made to optimize the opportunities offered or to alleviate stress and conflict by improving local conditions of life; and socially undesirable, when such efforts lead to high labour and population turnover, delinquent behaviour or other forms of alienation, affecting stability of the community involved.

Although through the feedback effect, the individual, societal, and organizational responses can affect changes in the structural variables and local conditions of life, no feedback effect can result in restoration of pre-development social equilibrium. Instead, the community may stabilize at a new level of equilibrium. This new equilibrium would depend on the degree of industrial and urban development required to sustain the desired level of resource production. Once the desired resource output is obtained, the situation may remain unchanged until the next industrial project intervenes in the community life.

2.5.4 Analytical Feasibility

There are several reasons why the postulated conceptual typology of the three levels of impacts is not analytically feasible. The preceding discussion of different research areas has demonstrated the inter-dependence between the structural variables, second order socio-economic conditions, and the human responses to socio-economic changes. No sequential relationships can be established therefore, between the three levels of impacts. For the changes in one variable may lead to changes in all of the variables affected by resource development, and the changes in one level of impacts may alter the nature of all the three levels of impacts. For instance, rapid growth in the employment available would escalate the rate of growth of the population, which could result in housing shortage, overtaxing of community services, increased personal and social stress, and growing personal and social problems. Yet each of the foregoing factors can independently lead to a higher

incidence of social problems, adding further to the case-load of social service agencies. Such factors contribute often to a high population turnover. The high population turnover, while decreasing community stability, would result in turn, in the shortage of skilled labour. This inter-dependence between the variables involved prevents to establish sequential relationships between the three levels of impacts, and to clearly identify the causality of the process by which resource exploitation results in social impacts.

Furthermore, since the feedback effect can stem not only from reactive but also from proactive human responses, it can constitute an intervening "other" process, the outcomes of which may not be related directly to the outcomes of resource extraction activities. For example, policy responses of the Government of Alberta, which are discussed in Chapter 4, have set the conditions for commercial development of the oil sands. In the case of Syncrude, these conditions have been set first, through the Environmental Impact Assessment process, and subsequently, through various administrative measures designed to accommodate and alleviate the anticipated impacts. In addition, local administration in Fort McMurray has adopted reactive measures to the impacts being experienced by the town. It would be impossible therefore, to always isolate the effects on Fort McMurray of the oil sands development from those which have been generated by policy responses of the public administration.

Despite its analytical limitations, the typology of the three levels of impacts is conceptually useful. It helps to examine in a more systematic manner the process of socio-economic changes induced in Fort McMurray by commercial exploitation of the oil sands. Even though the causal relationships between the resource extraction activities and the socio-economic changes may not always be established, the postulated typology of impacts may facilitate a somewhat better conceptual understanding of these relationships.

3. STUDY AREA

Since Samuel Hearne first described the Athabasca country in 1771, many explorers and travellers added also their accounts. Generally, their descriptions stressed the ruggedness and isolation of this land. John Macoun, who surveyed the region in 1785, predicted however, that some day,

> "The white man would be busy, with his ready instrument, steam, raising the untold wealth which lies buried beneath the surface, and converting the present desolation into a bustling mart of trade" (Macoun 1877:170, cited by Parker 1979:16).

Commercial exploitation of the natural resources in the Athabasca Oil Sands region began two hundred years ago with the entry of a sophisticated European fur trade network. The Athabasca Oil Sands deposit emerged as a subject of interest in the nineteenth century. However, only in the 1960s, improvements in technology, increasing oil prices, and the desire to reduce a growing national dependence on imported energy combined to culminate in commercial development of the resource. As a result, commercial extraction of the oil sands had become first, the major source of economic growth in the region, and subsequently, its only significant economic base.

3.1 GEOGRAPHICAL SETTING

The oil sands occur over extensive areas of northern and eastern parts of Alberta. The better known oil sands deposits are the Athabasca, Cold Lake, Peace River, and Wabasca deposits (Figure 6). The Athabasca deposit, which is the largest, is the only deposit partially amenable to strip-mining of the oil bearing sand an extracting the oil from the bitumen with a hot water wash-flotation process. A second technique involves removing the bitumen *in situ*, i.e. in place, without the strip-mining. This technique is still in experimental stages. Given the existing economic constraints, less than 10% of the total oil in the oil

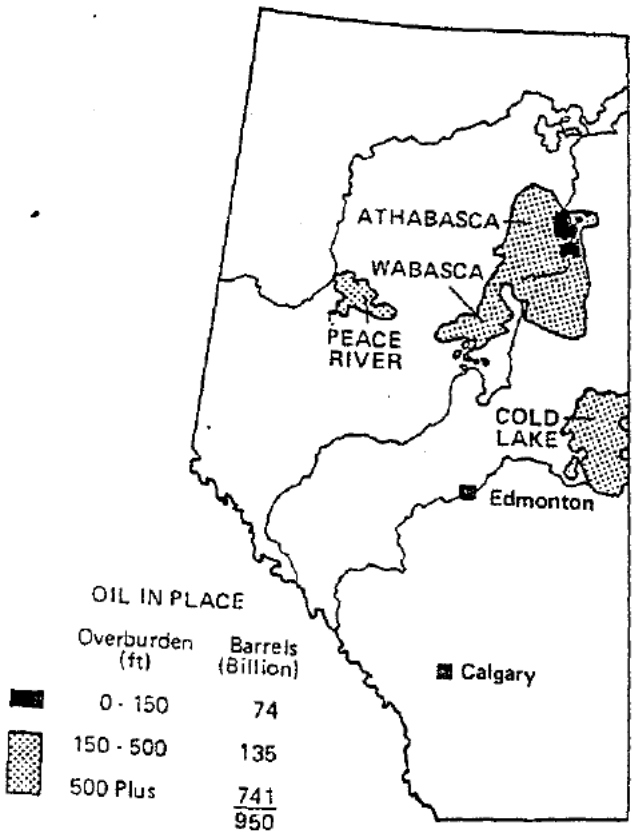

Figure 6. Major Alberta oil sands deposits.

sands deposits can be exploited by the strip-mining technology (Humphreys 1979:1-5).

3.1.1 Location

The Athabasca Oil Sands region is located in north-eastern Alberta. The part of this region designated as AOSERP study area covers the lands within "Townships 84 to 104 in Ranges 60 to 18 West of the Fourth Meridian, and Townships 105 to 115 in Ranges 6 to 9 excluding Wood Buffalo National Park" (Canada-Alberta Agreement 1975). This area contains the larger part of the Athabasca deposit, including most of the mineable area, and the leases currently under surface mining production, experimental development, and in advanced planning stages (Smith ed. 1979:4).

The area encompasses four established communities: Fort McMurray which since 1961 has rapidly become the population centre of industrial activity; Anzac which has had the experimental Amoco in situ plant next door; Fort MacKay which has both Suncor and Syncrude strip-mining oil sands operations for neighbours; and Fort Chipewyan which, because of its remote geographical location, has been relatively isolated from the direct effects of industrial activities. Indian reserves are located at Gregoire Lake, Clearwater River, Fort MacKay, Namur Lake, Mile 96 and Mile 105, Athabasca River (Chart 6301, Canadian Hydrographic Service), and at Old Fort Point on Lake Athabasca (Parker 1979:2). In addition, in the late 1970s, a new town has been planned some 60 km north of Fort McMurray on the east bank of the Athabasca River as the major centre servicing the now aborted Alsands project.

With the exception of Fort Chipewyan, which has only a winter road from Fort Smith, all the remaining established communities are accessible by Highway 63 linking the region to Edmonton. Anzac and Fort McMurray are accessible also by the Northern Alberta Railway. Both Fort McMurray and Fort Chipewyan have airports suitable for jet landing, and are serviced by the Pacific Western

Airlines. The rest of the area can be reached by water and/or small aircraft.

3.1.2 Physiography

The region lies within the Interior Plains of western Canada, and within the Upper Mackenzie River Basin. The Canadian Shield or Precambrian granite and gneiss appear north of Lake Athabasca. South of Lake Athabasca, Devonian deposits of limestone, dolomite, and gypsum are overlain by Cretaceous sandstones and shales. Standing above the level plain are the Birch Mountains to the north and west of Fort McMurray, Muskeg Mountains to the north and east, and the Stony Mountain Uplands to the south. Birch Mountain (823 m) constitutes the highest elevation in the region (Parker 1979:16-17).

The uplift of mountain ranges during the Cretaceous period forced the rivers which flowed west to the Pacific to turn northward to the Arctic Ocean, and brought a lowering of land in northern Alberta. The Arctic Ocean moved inland, while the rivers deposited sand in the area. Two theories had been developed for the origin of the oil sands. Either paleozoic oil was carried by the rivers and deposited in the sands, or the heavy bitumen came from decomposing plants which were deposited in the sands (Parker 1979:17).

The glacial action left deposits varying in depth from a few feet along the Canadian Shield to several hundred feet south of Fort McMurray. As the glaciers retreated, numerous large lakes were formed and drained into the Churchill River-Saskatchewan River basins until the Mackenzie River Basin was free of ice. Some of the lakes filled with organic deposits, giving birth to the large areas of muskeg covering the region today.

The largest river in this area, the Athabasca River, makes its most southerly swing at the town of Fort McMurray, where it is joined by the Clearwater River from the east. The last 145 km south of Fort McMurray are broken by geological faults causing major rapids. North of Fort McMurray, the Athabasca River flows

unimpeded for 220 km until the head of the delta is reached at Lake Athabasca (Parker 1979:17-19).

3.1.3 Climate

The climatic zone of the region is defined in the Köppen classification system as "cold temperate" with "cool short summers". This indicates a mean temperature for the coldest month of below $3^{o}C$, and for the warmest month of above $10^{o}C$, with a mean temperature of at least $10^{o}C$ during the four summer months. It also indicates a continental type of climate with significant daily and seasonal variation in temperature and precipitation (Smith ed. 1979:6). Thus in the winter, temperatures can fall as low as $-50^{o}C$, while summers can bring temperatures as high as $36^{o}C$ (Harper 1976).

Most of the annual precipitation, 285 mm of a total 435 mm, falls in the growing season. Although snowfall is light to moderate, it remains on the ground for a long time. But the length of daylight during early summer compensates "for what seems to have been an incredibly long winter" (Harper 1976).

3.1.4 Vegetation and Wildlife

The region's vegetation is characteristic of the Boreal Forest zone of Canada. The southern section is covered with grey wooded soil which is conducive to boreal mixed woods of white spruce and trembling aspen on the uplands. Poorly drained muskegs contain growth of black spruce and tamarack, while sandy ridges are covered with jackpine. White birch is dispersed throughout the entire region. Boreal sub-arctic alluvial lowlands in the Peace-Athabasca Delta area, which are a result of sedimentary deposits, encourage growth of white spruce interspersed with balsam poplar (Parker 1979:19).

Within this forest cover there is a profusion of grasses and undergrowth which produce fruit such as gooseberries, cranberries, blueberries and rosebush tips. These provide food for

the upland game birds and waterfowl which makes this habitat their home. The Peace-Athabasca Delta is one of the most important staging areas on the four major flyways of migratory birds in North America (Parker 1979:19).

The rivers and lakes are rich in fish. Whitefish, pike, goldeye, and walleye are the species most commonly found. The sluggish streams and small lakes create habitat for beaver and muskrat. The broken drainage areas and the rich grasses attract also larger game to this region. Moose can be seen along ridges and in spruce muskeg. Black bear finds food and shelter in this area. Caribou seek shelter of the boreal forest during the winter. Prior to the nineteenth century, the wood bison has ranged as far south as the Clearwater River (Parker 1979:20).

3.2 HISTORICAL BACKGROUND

3.2.1 The Native Peoples

The earliest recorded human occupation of the general region of northwestern Canada occurred shortly after deglaciation estimated at between 15 000 and 12 000 years ago (Millar 1976:12). Archaeological studies conducted at Fisherman Lake in the southwestern part of the North-West Territories had indicated that the early inhabitants of the region followed seasonal subsistence patterns in hunting caribou, buffalo, and moose, and supplemented this diet by fishing. It would appear that the subsistence nature of their economy remained relatively unchanged until the fur trade entered the Athabasca country (Millar 1976; Parker 1979: 21-2).

The first to encounter the European fur trade and to abandon their hunting culture in favour of trapping were the Crees who, in the 1600s had been situated around Hudson Bay. As their trapping grounds became depleted, the Crees migrated west. Most probably, the fur trade was originally introduced into the Athabasca country, through the migration of Crees from the Hudson Bay region (Parker 1979:24).

In the eighteenth century, having driven out the Beaver Indians, the Crees began to control the Peace River Basin, Lake Claire, and the Athabasca River. To the north of the Crees were the Chipewyans, whom the Crees had pushed north of the Churchill River to the edge of the barrens. As a result of the fur trade, two groups of Chipewyans developed. One group, the fur trappers, gave up the traditional lifestyle, and congregated in the areas around the trading posts like Fort Chipewyan. A second group, the "caribou eaters" withdrew into the barren lands and followed the old culture of fishing and of hunting the caribou (Parker 1979:25).

The fur trade would have been hindered in its development without the assistance of the native Indian tribes in such areas as food, woodcraft, and transportation.

> "Pemmican was an indispensable aid to the travellers of the western plains and the boreal regions. The snowshoe, toboggan, and birchbark canoe made long journeys possible while native knowledge of the woods and trail led many an intrepid explorer into new regions. Inter-marriage with the white men brought a new breed of men, the Metis who, along with the Indian tribes, became the mainstay of the fur trade economy in the eighteenth and nineteenth centuries" (Parker 1979:23).

As the fur trade declined in importance however, the Native people lost not only a viable means of livelihood but also their cultural identity. New developments in the area did not result in a creation of an indigenous regional economy, hence they tended to bypass the Native peoples. Instead, Athabasca country became a hinterland of the industrial economy of southern Canadian metropolis.

3.2.2 Forces of Change

During the last two centuries, the Athabasca Oil Sands region experienced various forms of exploitation of its natural

resources. The major historical forces shaping the region's development were private enterprise, church missions, and government enterprise. Their activities represented but a part of the white man's conquest of the North American continent.

The fur trade, dominated by the Hudson's Bay Company, constituted the region's economic base from 1778 until the 1950s. Its success depended on stable social conditions. To a certain extent, social stability was reinforced by the presence of missionaries, who introduced Christianity, education, and health care to the nomadic peoples of the region (Parker 1979:31). Therefore, the activities of the Company and of the Church complemented each other; the missionaries prepared also the ground for subsequent activities of the Crown in the Athabasca country.

The entry of agencies of the Crown, which represented the third major force in the region's development, had been facilitated by changes in the transportation routes. Separated by muskeg from the south and accessible only by canoe and York boat through the Churchill-Clearwater rivers, the region was relatively isolated. In 1870, Fort McMurray was established at the confluence of the Clearwater and Athabasca rivers, to assist in improving the transportation route over the Portage La Loche. However, the introduction of steamboats on the Saskatchewan River in 1875, and the arrival of the Canadian Pacific Railway in Calgary in 1883, sealed the fate of the old canoe and York boat route. Also in 1883, the Hudson's Bay Company opened the Mackenzie River Basin for northern transporation by cutting a road from Fort Edmonton to Athabasca Landing, and launching the S.S. Grahame at Fort Chipewyan. From that time onwards, Fort McMurray became the southern terminus for northern transportation along the Mackenzie River Basin (MacGregor 1974, cited by Parker 1979:32), and an agent of the expanding industrial frontier of southern Canada.

The North-West Territories Act of 1875 established, with some limitations, an indigenous government in western Canada.

In 1882, four districts were created by order-in-council: Alberta, Assiniboia, Athabasca, and Saskatchewan. Initially, the unorganized, untaxed, and unrepresented district of Athabasca was controlled by the Federal Government, through the Department of the Interior, the Indian Department, and the federal Forestry Branch which imposed regulatory controls over the region's natural resources.

In 1888, the Canadian Senate sponsored a committee to enquire about the resources of the Great Mackenzie Basin. The committee's report focussed attention on the region as rich in furs, agriculture, and minerals including the oil sands. As a result, after 1890, explorations for oil were conducted by the Geological Survey of Canada (GSC) and the federal Mines Branch. Believing that oil was trapped underneath the sands, the GSC had drilled a series of wells in the region. These wells were abandoned with no definite results (Parker 1979:34).

The need to create law and order in a region being promoted for its potential mineral riches and settlement possibilities led to the introduction in 1890, of the North-West Mounted Police, later to become the Royal Nort-West Mounted Police. An extension of the police patrols and posts followed, when Liquor Prohibition Act of 1875 was continued in the Athabasca district after it had been repealed in 1891, in the organized districts of Alberta, Assiniboia, and Saskatchewan. At that time, a fisheries inspector was appointed for the region, and in 1894, a Game Preservation Act had banned the hunting of wood bison until 1900, and imposed closed seasons on big game, fur-bearing animals, and birds (Parker 1979:33).

In 1907, the Canadian Senate conducted a new survey of the country's northwestern resources, which had resulted in another optimistic forecast of potential development. Following the Senate hearings of 1907, private individuals became interested in the oil sands. While the majority of them were speculators, a small number attempted to discover oil extraction techniques. None of these entrepreneurs was successful; their failures emphasized the complexity of exploitation of the resource (Parker 1979:34-5).

During the years following World War I, factors such as railway construction, establishment of the salt industry, commercial fisheries, oil sands speculation, and a buoyant fur market, as well as the arrival of white settlers had increased pressures upon the region's natural resources. The Government responded by creating fire ranging patrols, forest reserves and a proliferation of government bureaucracy. These measures affected the region's Native inhabitants. For instance, the policy of the federal Forestry Branch was to replace the Indian and Metis workers by white settlers (Parker and Tingley 1980:98-103). This policy reflected the currently prevailing negative attitudes of white Canadian society towards Native peoples.

Salt deposits were discovered at the mouth of Horse River between 1907 and 1912, but it was not until 1919 that the Alberta Government drilled a salt well near the lower townsite of Fort McMurray. In 1923, when the Alberta and Great Waterways Railway reached the Clearwater River, the salt industry appeared profitable. The Alberta Salt Company constructed a plant at the mouth of Horse River in 1925. This enterprise employed about 15 men, but prohibitive transportation costs forced its closure in 1926. A second salt mine was established in 1937, and lasted until 1951, when more accessible salt deposits were discovered in Alberta at Elk Point (Parker 1980:xviii, 31).

The completion of the railway to Waterways in 1925 meant that commercial fishing became possible because fish could be shipped to Edmonton in ice cars. In the spring of 1926, McInnes Fish Company began operations on Lake Athabasca. Commercial fishing of trout proved to be a profitable enterprise in the region. From 1942 onwards however, the number of trout in Lake Athabasca began to decline, and the fisheries started to move farther east into Saskatchewan (Parker 1980:21).

The activities of government and new forms of private enterprise initiated the transition of the region's economy from that based on fur trade to one based on industrial resources. A new order, oriented towards efficiency and scientific management, was introduced

to -- if not imposed upon -- the old fur trade society (Parker 1980: xiv). Its influence grew as the relationship between Edmonton as a metropolis and the Athabasca Oil Sands region as a hinterland was becoming stronger.

3.2.3 Social Changes

Composition and structure of the society in the Athabasca Oil Sands region were shaped in conjunction with the development of the natural resources. The social composition changed as various forms of exploitation of the resources brought the associate waves of newcomers into the region. The social structure was influenced by employment opportunities provided in the course of expansion of the southern Canadian economy into the North.

Prior to 1980, the Native peoples were left mostly on their own, although the Indian Department encouraged ranching and farming. During the 1890s, it was discovered that the Native population was half the size reported by the Indian Department. The Native people were suffering as a result of changes in living style, the introduction of such alien ailments as measles, and a decline in game resources. Meat, fur, and fisheries were endangered as white society moved north, especially during the Klondike Gold Rush (Parker 1979:34). The government had thus entered into treaty negotiations for the region, which were concluded in 1899 with Treaty No. 8 (Figure 7).

Between 1890 and the 1960s, the population of the region consisted of four major groups: the Chipewyans who historically occupied the Athabasca country; the Crees who migrated into the region in the eighteenth century; and the Metis and white people who came first, as a result of the expansion of the European fur trade and subsequently, because of the activities of government and new private enterprise. By the 1920s, the Crees dominated the area around Fort McMurray and Anzac. Farther down the Athabasca River at Fort MacKay, in the village there were some white and Metis people, while Chipewyans and Crees occupied

Figure 7. Territory ceded under Treaty No. 8 and the Indian tribes therein.

adjacent territories. Around Fort Chipewyan, the traditional Chipewyan Territory lay southeast of the Fort, in line with Portage La Loche. The Crees who migrated north from the Wabasca-Desmerais-Birch River area, inhabited the the territory southwest of Fort Chipewyan. The village of Fort Chipewyan was inhabited by the Metis and a few white people who were associated with the work of the fur trade, the churches, or the police (Parker 1980:6-10).

The historical relationships between those groups constituted a dynamic mixture of animosity and co-operation. Each successive wave of newcomers into the region encountered an initial hostility of the idigenous population. In time, many newcomers developed strong allegiance to the communities in which they lived, and began to perceive themselves as idigenous residents (Parker 1979:5-6). Moreover, the need to cope effectively with the harsh natural environment of the region necessitated mutual assistance among its inhabitants and fostered co-operation; at stake was human survival. There was also an economic interdependence. While the Native groups depended economically on white man's trade and industry, the white man relied on their services.

Occupational divisions existed however, between the three Native groups. The Crees and the Chipewyans depended for their livelihood on fur trapping. The Metis worked for trading posts and were generally found in the service oriented occupations. In addition to these economic divisions, the three Native groups did not mix socially with each other. In fact, relations among them had been described as hostile (Parker 1980:xxiii), and some of the animosities appeared to have persisted until today (Van Dyke 1978:136).

The socio-economic structure of the four local communities also differed. The communities of Anzac, Fort MacKay, and Fort Chipewyan were inhabited predominantly by the Native peoples, and their economies were based mainly on fur trapping and trading. In contrast, the economy of Fort McMurray was shaped by the community's role as a transportation terminus, and a service and

trading centre for the entire region. Its residents were mostly in-migrant to the area and English speaking (Parker 1980:30).

In 1907, Fort McMurray was smaller than Fort MacKay, and had a population of five or six families. The Senate hearings held after the 1907 survey of the Canadian northwestern resources, sparked the oil sands land speculation which by 1913, had more than doubled the number of families in Fort McMurray. When in 1921, the railroad to Clearwater River was completed, more white and Metis settlers had arrived in the area. The population of Fort McMurray grew from about two hundred in the early 1920s, to nearly four hundred by the late 1930s. According to the 1942 census of the region, there were 1041 residents between Anzac and Lake Athabasca (Parker 1980:29-31).

Most of the increase in Fort McMurray's population in the 1930s was due to the development of the salt industry at Waterways, which employed 55 workers. Other sources of employment were seasonal and included lumber, fishing, and shipyard operations. Additional jobs were provided by a sawmill, and by the Abasand Oils Limited (AOL) plant developed in the 1930s by Max W. Ball. The plant employed about twenty people. However, the skilled labour for AOL was brought from outside the area, and housed at a townsite established on the Horse River. This first "company town" in the region lasted from 1937 until 1945 when fire destroyed the AOL plant (Parker 1980:31).

After 1941, any impacts which previous developments -- including the mostly American AOL personnel -- might have had on Fort McMurray, were dwarfed by the Canol Project. Following the Japanese attack on Pearl Harbour in December 1941, the United States and Canada decided that, in order to defend Alaska and maintain its strategic importance in Pacific operations of World War II, it would be necessary to provide a source of fuel independent of sea lanes. The plan was to build a road to Alaska and a pipeline from Norman Wells on the Mackenzie River to Whitehorse in the Yukon, where a refinery was to be constructed. The

Canol Project was conceived as a military operation under the direction of the U.S. Army (Parker 1980:32).

The impact of the Canol Project on the region was sudden and unprecedented in developments in the Canadian North. Work was begun by the U.S. Army engineers, private contractors, and Imperial Oil Limited, and by June 1942, a military camp and dock facilities had been constructed at Waterways. The communities of Fort McMurray and Waterways were overwhelmed by the presence of over three thousand white and black soldiers, who camped on the Prairie between the two settlements (Parker 1980:33).

With the Army came employment. Men were hired as pilots and deckhands, while women worked laundering clothes and linen. The Army had doubled the local wages. People became more accustomed to a cash economy, and many could leave their traplines and find jobs in town. "It was like a boom and it seemed like the way of life changed from that time on. A lot of people turned to drinking..." (Alvena Strassbourg Interview 1978, in Parker 1980: 34). No economic development followed however.

After this "boom", the community experienced a sudden "bust" when in 1945 the U.S. troops had departed.

> "And then, when they moved out of here, it was just like a ghost town. Everything just died; they just moved out overnight... It seemed to me like you could hear a pin drop when they moved out" (Alvena Strassbourg Interview 1978, in Parker 1980:35).

Fort McMurray reverted to the old seasonal economy of transportation, with no other industries except the salt plant which continued to operate until 1951. More than ten years had passed before commercial exploitation of the oil sands transformed Fort McMurray into a regional urban centre, setting it even further apart from the surrounding and predominantly Native communities.

3.3 DEVELOPMENT OF THE OIL SANDS

3.3.1 The "Tar Sands"

First observations of the "tar sands" were made by Alexander MacKenzie, although this was often erroneously credited to Peter Pond who had explored the region in 1778. Many subsequent explorers, fur traders, and cartographers noted also the "foul smelling black sand". Already in 1882, a suggestion was made that hot water might be used to extract oil from the "tar sands". The subsequent failures to exploit the resource proved that successful development of the oil sands would depend upon extensive support by government in technical research, upon inexpensive or subsidized transportation, and upon increasing demand from markets outside the region (Parker 1980:xvii).

Resource ownership and control were a subject of controversy between federal and provincial jurisdictions from the time the North-West Territories were originally established in 1875, until the time when natural resources were transferred to provincial ownership in 1930. Despite the creation of the Province of Alberta in 1905, the federal government continued to control its resource development until 1930. The issues surrounding exploitation of the Athabasca Oil Sands represented one focal point of this intergovernmental controversy (Parker 1979:34).

Following the Senate hearings of 1907 (see p. 61) both the federal and the provincial government began to consider seriously the oil sands as a source of petroleum and, more important at that time, as a source of asphalt to pave the badly needed roadways in western Canada. Meanwhile, individuals such as J.A. Cote, J.K. Cornwall, Count Alfred von Hammerstein, and Robert C. Fitzsimmons spearheaded the private campaign to develop the oil sands. In 1913, the Federal Government assigned S.C. Ells to survey the extent of the resource. His maps and reports led to a flurry of activities by speculators and promoters. The Province responded by establishing the Research Council of Alberta in 1919, to rationalize the

problems of mineral extraction especially in relation to coal and oil sands. Its efforts notwithstanding, the oil sands remained a subject of the federal preoccupation into the late 1940s.

Between 1925 and 1930, when the transfer of the natural resources was effected, a more co-operative approach evolved through the efforts of the Bituminous Sands Administrative Committee. Within this political context, the Research Council of Alberta and the federal Mines Branch had advanced studies on large scale exploitation of the Athabasca Oil Sands. Significant technical experiments were supervised for the Research Council of Alberta by Dr. Karl A. Clark, who designed and built an experimental plant at Waterways in 1929. This plant succeeded in refining gasoline from the bitumen (Parker 1979:35).

The transfer of controls over natural resources to Alberta in 1930, coincided with the onset of the Great Depression which brought a temporary halt to provincial attempts to develop a technology for mining oil sands. Moreover, the discovery of alternative sources of oil for asphalt and the high cost of transportation made the use of the "tar sands" in road paving programs less profitable. During that time, two private entrepreneurs, Max W. Ball at Abasand, and Robert C. Fitzsimmons at Bitumount developed oil sands plants which had ended in financial failure. The Federal Government then began actively to support the private enterprise attempting to discover oil extraction techniques. The federal involvement came in response to the growing demand for liquid and semi-liquid hydrocarbons associated with the increasing use of automobiles (Parker 1980:xviii).

The outbreak of World War II and the concomitant escalating demand for oil induced the Federal Government to help the financially ailing Abasand Oils Limited. The support for AOL culminated in the government assuming control of AOL in 1943. In addition, in 1942, the Federal Government had launched an extensive drilling program, which facilitated the federal involvement in the Athabasca Oil Sands region until 1947.

The history of AOL might serve to illustrate the dependence of oil sands development on the external markets and government support. Between the 1930s, when the plant was established, and the 1940s, AOL had failed to start sustained production because of the lack of suitable technology to mine the oil sands. The outbreak of World War II brought shortages of skilled labour, a situation which was alleviated when the Federal Government permitted AOL to bring in American personnel. Then, on 21 November 1941, fire destroyed the plant. Although plans were immediately launched for its reconstruction and the lease agreement was extended to 1943, the federal Mines Branch began to consider cancelling the lease. The United States however, required asphalt and fuel for the Canol Project which was to construct a road to Alaska. Consequently, the Federal Government conducted a thorough examination of AOL and decided that, although the plant's capacity was too small, AOL could assist in the war effort. It could serve as a training ground for personnel required in larger scale operations. In order to continue the endeavour, the federal Department of Mines and Resources assumed control on April 1, 1943, of the AOL property, plant and operations for the sum of one dollar. The destruction of the AOL plant by fire at the end of World War II, and the growing provincial involvement in development of the oil sands finally led the federal authorities to doubt "whether the Dominion Government should continue this exploration of purely Provincial resources" (Parker 1980:xix).

Following the destruction of the AOL plant in 1945, the Province announced that a second Alberta Research Council experimental plant, located at Bitumount, would demonstrate that extraction of oil from the sands was possible. Bitumount was selected because it contained a quarry, buildings, and preliminary facilities abandoned after the failure of Robert C. Fitzsimmons' project. By 1949, the Bitumount plant demonstrated that "technically there was no obstacle in the way of separating the oil from the sands" (Parker 1979:35).

Feasibility of the commercial exploitation of oil sands was reported by Sidney Blair at the first Athabasca Oil Sands Conference sponsored by the Government of Alberta in 1951. At the conference, the provincial government announced its policy on oil sands leases and royalties. These leases, available for $1.00 per acre, were for a term of 21 years which was renewable, and provided up to 10% royalty on the raw product (Athabasca Oil Sands Conference Proceedings 1951:169-182).

During the 1950s, a few exploration permits were taken out by companies, but no major developments occurred because Alberta's conventional sources of oil supply were rapidly increasing. The situation changed when Egypt blocked the Suez Canal in 1956, thereby endangering the supply of oil from the Middle East to North America. Companies began to take out exploration permits which in 1958 had reached 93, and several experimental pilot plants became operational in the region (Parker and Tingley 1980:129-130). By the early 1960s, ground was prepared for full-fledged exploitation of the resources.

3.3.2 Commercial Exploitation

The first commercial project for recovery of synthetic crude oil was developed by the Great Canadian Oil Sands (GCOS, now Suncor) 32 km north of Fort McMurray. In 1960, GCOS applied to the Alberta Oil and Gas Conservation Board (OGCB) for permission to extract oil from the Athabasca Oil Sands. It received provincial approval for the construction of its operation in 1963, began construction of the processing plant in 1964, and commenced production late in 1967.

The second commercial oil sands project was developed by Syncrude Canada Ltd. at Mildred Lake, 40 km north of Fort McMurray. In 1962, Cities Services Athabasca Inc. (now Syncrude) filed its application with the OGCB for permission to construct the project. Syncrude development was approved by the Energy Resources Conservation Board (ERCB) only in 1973. Site clearing commenced in December of the same year. The construction lasted

five years. On 1 August 1978, the first synthetic crude oil from the Syncrude plant was piped to Edmonton.

The massiveness of both the Suncor and the Syncrude operation has been unprecedented in the history of the region and in the history of the petroleum industry in Alberta. Both the projects are based on open-pit mining of oil sands to recover bitumen. This technique requires a removal of the overburden, including the muskeg which is then stored for future reconstruction of the disrupted local ecological systems. The bitumen is upgraded on site, at the processing plant, to synthetic crude oil which is subsequently piped to refineries in Edmonton.

The Suncor plant has been initially designed to produce 7380 m^3 (45 000 barrels) per day of synthetic crude oil. Due to a number of technical difficulties which have required operational and facility modifications, production has reached design levels as late as 1971-72. In 1972, the company had applied for approval to increase production to 10 660 m^3 daily, and in late 1973 the Province had approved the application (Nichols 1979:16). In the Winter of 1979 steps had been taken to expand facilities of the operation.

The Syncrude development is even larger. The project has a design capacity of 20 500 m^3 (125 000 barrels) per day of synthetic crude oil, i.e. almost three times the Suncor output. That capacity is to be reached by 1984 in stages, with initial 1978 output at a much lower daily level (Nichols 1979:17). The total area used by the Syncrdue project covers 60 km^2, of which the open-pit mine area is 25 km^2, the processing plant area is 5 km^2, and the tailings pond area is 30 km^2 (Syncrude n.d.).

The development of the two mega-projects has been both capital and labour intensive. The equipment used in the course of construction and operation of these projects has been produced and imported from outside the region and frequently from outside Alberta or Canada. The cost of construction of each project has escalated together with inflation, and has surpassed the original estimates.

Although most of the construction labour force resided in the respective camps on Suncor and Syncrude sites, their impact on Fort McMurray was enormous. By 1966, the Suncor construction work force had reached as many as 2300 workers, and had been equal in size to the population of Fort McMurray at that time. Operating employment at the Suncor plant had totalled about 150 persons in 1966, reaching about 700 in 1967, and ranging from 1500 to 1800 persons between 1967 and 1980. The Syncrude construction had required over three times as many workers. By mid-1977, the Syncrude construction labour force had reached 8000 people, of whom 6600 lived in camp at the industrial construction site. Operating employment had totalled more than 2500 by 1978 (Nichols 1979:17), and had been estimated at 3100 in 1980. Table 4 provides a brief chronology of the development of the two oil sands projects.

In addition to the two mega-projects, several non-commercial and experimental operations have been developed in the region, to test bitumen recovery techniques which do not involve open-pit mining. These in situ operations have been relatively small. Some have been isolated, self-contained and serviced from outside the region; in others the operations have been only seasonal with a few workers; the full-fledged pilot operations may have required about a dozen permanent employees. Construction and development of these plants, although sometimes involving over 100 men, has only extended over a short period of time (Nichols 1979:22). Any impacts these experimental operations may have had on the region, have been overshadowed by the development of Suncor and Syncrude.

Since the late 1970s and until 1981, the region has also lived in anticipation of the imminent development of the Alsands project, which would have been even larger than the Syncrude operation. Although already advanced, the Alsands development has been abandoned, at least for the time being. Moreover, before current economic stagnation, the Preliminary Plan for Regional Development in Northeast Alberta

Table 4. Chronology of development of the Suncor and Syncrude oil sands projects

Time-Frame	Stage of Development	Labour Force Requirement
1956 - 1963	Exploration Phase:	
	Suncor pilot plant operating as Great Canadian Oil Sands	
	Syncrude pilot plant operating as Cities Service Athabasca Inc.	
1960	GCOS (now Suncor) applies to OGCB	
1962	Cities Service Athabasca Inc. (now Syncrude) applies to OGCB	
1963	Suncor development approved by OGCB	
1964 - 1967	Suncor construction	In 1966, 2300 construction and 150 operating workers
1967	Suncor commences production	700 operating employees
1968 - present	Suncor operational	1500 to 1800 employees
1973	Syncrude development approved by ERCB	
1974 - 1978	Syncrude construction phase	In 1977, 8000 construction workers
1978	Syncrude commences production	2500 operating employees
1979 - present	Syncrude operational	3100 employees

Sources: Nichols 1979; 1980; Syncrude "Facts and Figures" n.d.; Knight, Interview 1980.

has foreseen the following developments in the region during the next 25 years: three oil sands projects using strip-mining technology; two full scale in situ oil sands projects; and six experimental or semi-commercial in situ extraction operations. Plans have also existed to utilize the Mountain Rapids as a hydroelectric site to supplement the Provincial power grid; to mine the coal deposit on the Firebag Plain; and to develop two uranium mining operations, and a granite quarry (Northeast Alberta Regional Commission, February 1978.) While none of these planned developments may materialize in the near future, they are indicative of "the untold wealth which lies buried beneath the surface" in the Athabasca Oil Sands region.

4. POLICY RESPONSES

Until the era of commercial exploitation of oil sands had begun, the Government of Alberta practiced a "developmental laissez-faire" policy. This policy meant that economic development was left to free enterprise, and social services were provided only when they were demanded and could be supported by local population. A marked departure from this policy occurred in 1951, at the first Athabasca Oil Sands Conference, when the Alberta Minister of Mines and Minerals, the Hon. N.E. Tanner, stated:

> Whatever company or companies are prepared to put their risk capital into this development are actually partners with the Government and the Government with them in that undertaking (Athabasca Oil Sands Conference Proceedings 1951:178).

Thus the Province indicated its willingness to venture into the sphere of economic investment together with free enterprise. But with regard to the roads, schools, and social services which might be needed as a result of commercial exploitation of the oil sands, the Minister hastened to add that:

> When development goes forward, we deal with any area the same as any present day established area. We would not build the schools; we would assist in building and paying the grants the same as we would in any other area. As far as roads are concerned, we have a policy. For example, getting into the area for exploration work . . . is the responsibility of the company. If development takes place and communities are developed, then we accept the responsibility in connecting them with the rest of the province (Athabasca Oil Sands Conference Proceedings 1951:178-9).

This statement confirmed a continuation of the Crown's "developmental laissez-fair" policy in the sphere of provision of social services and community facilities.

However, massive scale of proposed exploitation of the oil sands heightened public sensitivity and government concern for the need to provide services and facilities within the Athabasca region, which would be commensurate with the anticipated development. Meanwhile, growth of other communities in Alberta, and public expectations of greater government involvement in the provision of social services in general, led to a number of provincial enactments.

These enactments included the New Towns Act (1955), Northland School Division Act (1961), Northern Alberta Development Council Act (1964), Alberta Newstart Act (1968), and Northeast Alberta Regional Commission Act (1974). Through these measures, the Province assumed an increasingly active role in the development of northern Alberta, and in the provision of services and facilities in communities of the Athabasca Oil Sands region. Ultimately, the Government of Alberta became directly involved in the planning and management of urban expansion in Forth McMurray.

4.1 THE DEVELOPMENTAL STRATEGY

An awareness of the need for a comprehensive strategy for development of the oil sands germinated in Alberta in the early 1970s, as a result of concern that issues surrounding exploitation of the resource were being resolved by means of incremental and unco-ordinated government planning. Alberta's oil sands development policy which was initiated in 1951, was amended in 1962, to increase the flexibility of government planning in anticipation of the socio-economic and environmental impacts of the proposed Suncor project. Some elements of a strategy for exploitation of the resource existed also in part 6 of the Mines and Minerals Act, and in various regulatory and operating procedures arising from administrative functions of the Energy Resources Conservation Board (ERCB), which replaced the Oil and Gas Conservation Board, and of the Department of Mines and Minerals (Conservation and Utilization Committee 1972). In addition, the Environment Council of Alberta (now the Environment Conservation Authority) was established in 1970, with the explicit mandate to hold public hearings at which concerns related to any new resource development in the Province could be discussed. But policy responses to the impacts experienced during construction of the Suncor project, consisted of operational planning by the government agencies involved in the oil sands region.

In 1972, in view of the impending construction of Syncrude, the Ministers of Environment, Industry and Commerce, and Municipal Affairs requested the Alberta Conservation and Utilization Committee to suggest a developmental strategy for exploitation of the oil sands.

The Committee's report entitled "Fort McMurray -- Athabasca Tar Sands Development Strategy" was prepared by participants from virtually all the departments of the Government of Alberta, under the chairmanship of H.W. Thiessen, ADM, Alberta Enrironment. As well as being extremely comprehensive, the report focussed on a number of specific objectives and strategies, and included social, economic, environmental, technical, and administrative recommendations (Conservation and Utilization Committee 1972). For the first time, concerns related to possible socio-economic impacts of the development of oil sands were identified together with the environmental concerns.

4.1.1 Environmental Impact Assessment

One outcome of the Committee's report was the establishment of guidelines for the Environmental Impact Assessment (EIA) process. This process was to facilitate the early identification and resolution of potentially significant adverse environmental and socio-economic effects of any proposed resource development. The proponents of anticipated development were required to submit EIA reports "to provide the public and the government with an overview of the proposed development and its implications." Following the review of the EIA reports, public hearings were held. Both public participation and proponent - government liaison were considered to be "integral parts of the environmental impact assessment process" (Alberta Environment February 1977).

In 1973, when the Syncrude project was approved by ERCB not all the guidelines for the EIA reports had been established. The EIA reports prepared by Syncrude were not as comprehensive therefore, as those prepared in 1978 by the Alsands group. In 1974, the construction of Syncrude which had already began, was temporarily stopped when Atlantic Richfield withdrew from the consortium. Meanwhile, an assumption held previously that Alberta was not under any pressure to develop synthetic crude oil, had lost its validity. The Province's conventional sources of oil and gas could no longer meet the equivalent of total requirements for hydrocarbons in Canada. Recognition of this fact had induced the federal and provincial governments to enter in 1975, into the Syncrude consortium. Since

that time, the Province began to play the dual role of protector of the environment and developer. Consequently, the need for a comprehensive provincial strategy for exploitation of the oil sands became even more urgent. In the circumstances, the EIA process constituted an important step towards the development of such a strategy. Furthermore, the inclusion in the EIA process, of socio-economic impacts of oil sands development had placed Alberta in the forefront of the provinces attempting to establish resource exploitation policies.

4.1.2. Co-ordination of Government Planning

In an effort to secure greater co-ordination of government responses to the impacts associated with the Syncrude project, responsibility for socio-economic development of the region was placed in the hands of Northeast Alberta Regional Commission (NARC). Enormously powerful, the Commission was established in 1974, in accordance with recommendations contained in the report prepared by the Conservation and Utilization Committee (1972:22). The mandate of the NARC was to ensure an orderly development of the entire region.

The Commissioner was appointed by and responsible to the Lieutenant Governor-in-Council, i.e. to the Provincial Cabinet. For purposes of liaison with the Cabinet and its Northeast Alberta Services Committee, the Commissioner's direct relationship was to be with the Minister of Municipal Affairs. Responsibilities of the NARC were to initiate or organize plans and programs for the provision of public facilities and services in the region; to co-ordinate the programs and services of Provincial Government departments and agencies, as well as of local authorities; and to administer or supervise the implementation of programs and services which might be assigned to the Commissioner by the Cabinet or a local authority. In order to enable the Commissioner to carry out his functions, any local authority in the region, or the Cabinet, might assign to him any power, duty or right that a local authority had. A committee of the residents of the region was established under the Act, to serve in an advisory capacity to the Commissioner (Nichols 1980:19-20).

Despite the extraordinary and unprecedented powers of the

NARC, its authority was constrained in practice, by the lack of line responsibilities. Moreover, its potential powers had to be requested by a local authority or the Cabinet, but conditions under which such a request would be made were not specified. The mandate of the NARC was implemented more effectively in the region as a whole than it was in Fort McMurray, where local agencies would be reluctant to lose their jurisdictions. Outside Fort McMurray, the NARC was able to fill a void not being covered by other local agencies or provincial departments (Nichols 1980:20-23). Nevertheless, since the growth induced by the construction of Syncrude was concentrated in Fort McMurray, the Commission had become involved in the municipal planning and development matters (Nichols 1980:10).

4.2 PUBLIC ADMINISTRATION IN FORT McMURRAY

Under normal circumstances, the primary responsibility for delivering urban services and for planning and managing urban growth would rest with the local municipal administration. But the rapid growth of Fort McMurray was unprecedented in the history of Alberta. Moreover, the community was designated to expand its function as a domicile for the oil sands industry, and its function as the regional centre for the provision of Government services and the distribution of goods to the rest of the Athabasca Oil Sands region. The Province was also committed to ensure that essential services were in place to accommodate the resource development. The interaction of those factors had led the Government of Alberta to become involved in areas usually of local jurisdiction. As a consequence, Fort McMurray's urban development was planned and managed by a configuration of forces which included the local Board of Administrators, Alberta Department of Municipal Affairs (DMA), and later, also the Northeast Alberta Regional Commission.

4.2.1 Department of Municipal Affairs

The status of Fort McMurray changed from that of a village to that of a town in 1948, and for the next sixteen years the community had an elected council and a mayor. With the growth of interest in commercial exploitation of the oil sands and the expectation for

associated urban expansion, "a pressured Town Council" of Fort McMurray (Harper 1976) applied in 1962 for the New Town status. This status was approved in 1964, with the result that Fort McMurray's elected council was replaced by a Board of Administrators appointed by the Minister of Municipal Affairs. Between 1964 and 1971, there lasted a transition period during which the size of the Board was expanded from three to seven members. At the end of that period, the Board was converted from an appointed to an elected body. However, between 1973 and 1977, the Province appointed one representative to sit on the Board (Nichols 1980:9). In 1980, when Fort McMurray acquired a city status, the Board of Administrators became the City Council.

Involvement of the Department of Municipal Affairs in the development of Fort McMurray had been possible through the provisions of the New Towns Act of 1955. Under the Act, the Minister could appoint the members of the Board of Administrators, except for such members as the Minister decided should be elected locally. The Board of Administrators was responsible to two regulatory agencies: first, to the Alberta Planning Board with regard to all matters related to the planning and development of Fort McMurray; and secondly, to the Local Authorities Board with regard to all matters related to the financing of Fort McMurray's development and operations. The Board of Administrators was also required to carry out any instructions that either of those regulatory Boards might issue, while both the regulatory Boards were administered by the DMA (Nichols 1980:9).

The fact that the Province became involved in the development of Fort McMurray had at least two known effects. First, the lines of responsibility were blurred and the authority of the Board of Administrators was lessened. Since the role of the Board was relegated to that of administration of Fort McMurray, frequent conflicts occurred between its activities and those of the Town Management. Secondly, the autonomy of local administration and the responsibility to the electorate of local politicians were greatly reduced. For the municipal decisions normally handled by the elected officials were now shared with other parties, and specifically with the DMA and its Alberta Planning Board (Nichols 1980:11-16).

The abrogation of responsibilities of locally elected officials and the ensuing lack of an accountable local government could have disturbed the community. The problem was mitigated to some extent by the massive influx of new population. The new residents had not yet developed strong local ties and many had no intention to settle permanently in Fort McMurray (Nichols 1980:26; Gartrell et al 1980:61-2). However, the long-time residents with stronger committment to the community could have resented this intrusion of the senior level of government into their affairs. Since Fort McMurray had functioned as an incorporated village and then town for a long time, some dissatisfaction undoubtedly existed about this reduced level of local responsibilities (Nichols 1980:15).

4.2.2 Urban Developers

Three organizations were involved in Fort McMurray, in the provision of serviced land and housing: Alberta Housing Corporation (AHC), Athabasca Realty Company Ltd. (ARC), and Northward Development Ltd. (NDL). As a provincial crown corporation, the AHC was responsible to the Minister of Housing and Public Works. In 1974, AHC was designated as the only land development agency for the town, and during the early stages of Syncrude construction, it reported to the Minister of Municipal Affairs.

The Athabasca Realty was the land and housing development agency for Suncor, and was particularly active in the late 1960s and early 1970s. Its subsequent activities were relatively modest. The Northward Development was an agency formed by Syncrude in 1975, to provide housing for the company employees and their families. The NDL developed also some land as an agent for the AHC, but it was involved mainly in constructing and managing the residential units. Other private companies were excluded from the development of new subdivisions, though some private firms were active in commercial and high density developments in the downtown core (Nichols 1980: 28-30). Any activities of the AHC, ARC, and NDL had to be carried out within the parameters set forth by plans for urban development, which were decided upon by the public administration in Fort McMurray.

4.2.3 Northeast Alberta Regional Commission

The Northeast Alberta Regional Commission was charged with the responsibility of monitoring and co-ordination of local service delivery in the entire region. The role of the NARC was however, significant in Forth McMurray, because of the rapid population growth. Since the NARC had no direct authority over the agencies involved in the delivery of services, the Commissioner had to rely largely on improving communication flows and information channels to ensure that services were put in place as required (Nichols 1980:21). Given that other local and provincial authorities were sensitive to the potential powers of the NARC, the Commissioner's more informal approach was certainly less controversial and probably, more effective.

An example of this approach was the Program Review and Monitoring Committee (PRMC) established in early 1976, after the NARC had presented a report outlining the inadequate structure of local service delivery. The PRMC was a voluntary forum chaired by the Commissioner. Its role was to improve the liaison between members of local agencies responsible for service delivery, such as the Town, hospital and school boards, the urban developers including AHC, ARC, and NDL, and the Chamber of Commerce. The local Member of the Legislative Assembly, who was a member of the Northeast Alberta Services Committee of the Provincial Cabinet, also attended occasionally the PRMC meetings. Although the PRMC was not empowered to implement any services, it allowed those responsible for local service delivery to review such issues as population and housing projections, subdivision developments and related requirements, and local financial problems (Nichols 1980:22).

In addition, the NARC adopted the role of a facilitator. It provided support services to several local agencies; helped the Town and the school boards to apply for financial assistance from the Provincial Government; aided the formation of the Fort McMurray Regional Task Force; was involved in a study of regional health care and social services; functioned as an arbitrator between the AHC and the Town; and generally acted as a local ombudsman and a "sounding board" (Nichols 1980:23).

The Commissioner was also highly accessible to the local groups and individuals. This accessibility and the informal approach adopted by the Commission, combined with its potential powers might have helped to a degree, to fill the void created by the lack of an accountable local government in Fort McMurray. Because of his direct access to the Cabinet, the Commissioner appeared to have been perceived by some groups and residents in Fort McMurray, as the ultimate recourse in resolving their grievances (Interviews with the residents in Fort McMurray, 1978).

In summary, the role of the NARC was filled with paradoxes. Potentially, the Commission had enormous and extraordinary powers to supervise the socio-economic development induced by the Syncrude project. In practice, the ability of the Commission to monitor and co-ordinate service delivery in Fort McMurray, was constrained by the lack of direct authority over the line jurisdictions of local and provincial agencies. The powers of the NARC both facilitated and hindered its functions. The informal approach which the Commission had to adopt, did not force the agencies to co-operate, but the perceived threat of potential powers of the NARC might have induced their co-operation. Conversely, a resentment of those powers might have prevented local administration from becoming fully involved in efforts of the NARC to enhance the co-ordination of service delivery. Moreover, while some residents of Fort McMurray claimed that the NARC Act had created a "dictator" over the region (Nichols 1980:20), others perceived the Commissioner as a "father figure" whose help they sought in resolving local conflicts and problems. In the circumstances which had reduced the responsibilities to the electorate of local politicians, the powers and the accessibility of the Commissioner appeared to have provided to some extent, a substitute for an accountable local government.

4.3 CONCLUDING REMARKS

To appreciate constraints which were imposed by the exploitation of oil sands upon the local and provincial authorities responsible for urban development of Fort McMurray, it will be necessary to examine the socio-economic conditions associated with construction and operations of Suncor and Syncrude. Because of new employment

opportunities and labour force requirements, each stage of development of these two projects resulted in changes in Fort McMurray's population. Each stage called therefore, for appropriate measures from the town's administration in the provision of housing, and of community services and facilities. Each stage featured also various responses of the residents to local conditions of life; some of these responses might have posed additional problems to be solved by the local administration.

The next five chapters examine changes in Fort McMurray's population, employment and labour force, housing, and services and facilities, as well as some community responses during each stage of development of Suncor and Syncrude. These stages, i.e. (1) pre-construction period; (2) construction of Suncor; (3) operations of Suncor alone; (4) construction of Syncrude; and (5) operations of Suncor and Syncrude, cover the period from 1961 to 1980.

5. PRE-CONSTRUCTION PERIOD: 1961 - 1963

Before construction of the commercial oil sands projects, Fort McMurray constituted a small and relatively stable northern town. The community's socio-economic structure reflected its history as an outpost of the European expansion into the North. Its population was predominantly English speaking, with people of Native Indian and Metis ancestry representing at most, slightly over one-third of the residents (Harvey 1981:46-7). Local employment was mainly seasonal and depended on Fort McMurray's role as an intermodal terminal between water and railway transportation Other employment stemmed from the community's function as a service and trading centre for the Athabasca Oil Sands region.

Despite its apparent geographical isolation, Fort McMurray was by no means a "virgin land". Since its establishment in 1870, the community had experienced several "boom" and "bust" cycles related to exploitation of the natural resources in the Athabasca country. One of the earliest "booms" involving exploitation of the oil sands led to the short-lived land speculation of 1907. One of the latest "booms" occurred as a result of the Canol Project activities during World War II, only to end with a "bust" when the hostilities had ceased (see Chapter 3). The economic slump, which followed, was aggravated by the 1951 closure of the salt plant at Waterways, which provided the year-round employment. Although several experimental oil sands projects became operational in the region in the late 1950s, their impact on Fort McMurray appeared to be minimal. Basically, the community relied on the old seasonal economy of transportation. The impending commercial development of the oil sands was yet to induce changes in the community's socio-economic structure.

The rest of this chapter is addressed to a detailed examination of the population, employment, housing, and services and facilities in Fort McMurray during the pre-construction period. Since most data have been obtained from the 1961 Statistics Canada

Population Census, the information presented pertains mainly to the conditions which have existed at that time.

5.1 POPULATION

Prior to the 1960 application of GCOS for permission to develop the oil sands, the population of Fort McMurray remained relatively static. Between 1951 and 1961, the town grew slowly from 962 to 1186 residents. By 1963, when the GCOS (now Suncor) project was approved by the Province, the population had increased to 1627 residents, indicating a growth rate of 17.1% per annum. In contrast, the population of Alberta grew at that time, at the rate of 2.6% (Harvey 1981:55). The growth of population in Fort McMurray had occurred as a result of preliminary activities related to the imminent construction of Suncor.

5.1.1 Population Characteristics

A striking characteristic of Fort McMurray's population in 1961, was its young age and a shortage of people in the prime years of working life, i.e. between 20 and 44 years old. As many as 51.4% of the residents was less than 20 years old, with those less than 15 years old representing 42.7% of the population. Only 27.9% of the residents was between 20 and 44 years of age. People age 45 and older constituted 20.7% with those over 64 years old accounting for 5.6% of the population. The town resembled a "typical" small northern community, where the age distribution would tend to be bi-modal, with a larger proportion of youths and older people than of individuals in the prime years of working life (Harvey 1981:56,93). Members of the latter age group would be more inclined to leave the community, because of the limited local employment opportunities.

Males were more numerous than females in Fort McMurray, and the average 1961 ratio was 119.2 males per 100 females. As an exception, the ratio was 90.7 in the age group between 15 and 19, reflecting possible departure of young males from the community.

In the age group between 45 and 54, the ratio was 69.4 reflecting the loss of men during World War II. For the remaining age groups, the ratio oscilated from 101.5 males per 100 females among those between 25 and 34 years old, to 251.7 among those 55 years of age and older (Harvey 1981:57).

The proportion of married residents in the community, was relatively high. In 1961, over 63% of the population age 15 and older was married, but the married statistics included separated individuals. Of the total population, 37% was married, 2.7% was widowed, and 0.4% was divorced. While nearly 60% of the total population was single, the majority of these was under the age of 14. Between 1961 and 1963, there were on average, only 2.6 marriages per 1000 population annually in the town, compared to 7.6 in Alberta (Harvey 1981:62; Gartrell et al 1980:46).

During this period, Fort McMurray had lower average birth rate, similar death rate, and much higher rate of infant mortality than Alberta. The average live birth rate was 18.3 per 1000 population in the town, compared to 27.5 in the Province. The average death rate was 6.0 per 1000 population compared to 6.7 in Alberta. However, the average rate of infant mortality was 151.0 per 1000 live births in Fort McMurray, compared to 24.9 in Alberta. Between 1961 and 1964, the rate of natural increase averaged 13.3 per 1000 population in the community, and was lower than the rate of 20.3 in the Province (Harvey 1981: 58-61).

In 1961, Fort McMurray's population was predominantly English speaking and Roman Catholic. Ethnically, the town was divided between British (35.3%), French (23.8%), and Native Indians (11.9%), with other ethnic groups accounting for 29% of the residents. English was a mother tongue to 71.8% and French to 8.6% of the population; 19.6% of the community belonged to other linguistic groups. The proportion of Roman Catholics in Fort McMurray was 60.5%, more than double that in Alberta. Anglicans represented 13.4% of the residents, 13.7% belonged to

the United Church, and 12.4% to other religious denominations (Harvey 1981:64-6). These statistics were not unusual for the small communities in northeastern Alberta.

The level of education in Fort McMurray was generally low. In 1961, of the population 5 years old and over not attending school, 66.3% had less than Grade 9 education, compared to 43% in Alberta. Grades 9 to 13 were completed by 29.1% of the people in town, compared to 50.2% in the Province. Those with university education accounted for 4.6% in Fort McMurray, and for 6.7% in Alberta (Harvey 1971:67). Clearly, there was a desperate shortage of educated and skilled personnel in the community.

5.1.2 Families

Families in Fort McMurray were distinctly larger prior to development of the oil sands than afterwards. In 1961, there were on average, 4.577 persons per family in the community. Of the toal 227 families, 44% was composed of 5 or more persons, 15% consisted of 4 persons, 18.5% of 3 persons, and 21.6% of 2 persons. The average age of family heads was relatively mature, and 23.7% of the family heads was 55 years of age and older. Of the remaining family heads, 18.1% was between 45 and 54 years old, 28.6% was between 35 and 44 years old, 23.8% was between 25 and 34 years of age, and only 5.7% was less than 25 years old (Harvey 1981:86-7).

As might be expected, the average number of children per family in 1961, was rather high (2.63), as was the proportion of families with 4 or more children (31.7%). As many as 20.3% of the families had no children, but 34.8% had between one and two children, 26% of the families had between 3 and 4 children, and those with 5 or more children represented 18.9% of the families. Of the total number of 598 unmarried children less than 25 years old and living at home, 84.7% was less than 15 years old (Harvey 1981:89-90). This contrast between the high proportion of young children and the low proportion of young adults indicated that young people were leaving the community.

5.1.3 Households

It could be assumed that in an isolated northern community, households would be larger than usual because of a larger number of children and a strong committment to the extended family (Harvey 1980:24). This was not the case in Fort McMurray where in 1961, the households consisted on average of 3.85 persons. Of the total 301 households, 73.4% was one-family, 1% was multiple family, and 25.6% was non-family households (Harvey 1981: 109,111). The high proportion of non-family households was probably associated with the presence in the community, of employees of the government and also, of the oil sands industry.

5.2 EMPLOYMENT AND LABOUR FORCE

During the pre-construction period, the economy of the Athabasca Oil Sands region depended mainly on transportation and on traditional resource industries such as hunting, trapping, fishing, and forestry. Consequently, the amount and kind of employment available to the residents of Fort McMurray were determined by the nature of the regional economic activities.

5.2.1 Labour Force Participation

In 1961, the overall labour force participation (LFP) rate in Fort McMurray was 48.5%, compared to 57% in Alberta. Of the population older than 15, which totalled 680 persons, 330 individuals were in the labour force, of whom 267 were males and 63 were females. The male LFP rate was 72% with 70.6% employed and 1.4% unemployed; the female LFP rate was 20.4% with all the females employed. As a proportion of the total population, the 1961 employed labour force was 27.8% in Fort McMurray, compared to 35.9% in Alberta. The lower proportion in the town was due partly, to the large number of residents (42.7%) who were not of working age (Nichols 1979:61; Harvey 1981:132).

5.2.2 Employment Distribution

The residents of Fort McMurray relied for employment on transportation, communications, and utilities, which provided 37% jobs in 1961. The next largest employment was found in community and personal services (21%), and in wholesale and retail trade (10.5%). Public administration employed 9% of the labour force. Only 7.4% of the labour force was employed in the traditional resource industries, such as agriculture, fishing, trapping, and forestry. Similarly insignificant was the proportion of persons employed in construction (6.2%), and manufacturing (5.6%). Mines, quarries, and oil wells employed merely 2.8% of the total labour force.

While no data were found on age and education of the Fort McMurray labour force in 1961, the data on occupational patterns were available. Of the total experienced labour force, 30.3% were craftsmen, 21.5% were in sales and services, 15.5% were in occupations related to transport and communications, 10% were in managerial and administrative occupations, and only 7% were in professional and technical occupations. Those in occupations related to farming, fishing, forestry, and mining accounted for merely 3.3% of the labour force. The overall occupational distribution emphasized the community's role as a regional service and trade centre.

In 1961, of the total labour force, 12.7% were self-employed, 86.1% were wage earners, and 1.2% were unpaid family workers. Among men, there were 14.6% self-employed, 85% wage earners, and 0.4% (1 person) in unpaid family work. Among women, 4.8% were self-employed, 90.5% were wage earners, and 4.8% were in unpaid family work (Harvey 1981:138). However, considering the low female LFP rate and the large number of children in Fort McMurray, the percentage of women in unpaid family work was probably much higher than reported.

5.2.3 Relative Income Levels

During the twelve months prior to 1 June 1961, the average wage and salary income for both males and females was lower in Fort McMurray than in Alberta (Table 5). Moreover, the discrepancy between the average income of males and females in Fort McMurray was larger than the discrepancy in Alberta. In 1961, the average income of males working in Fort McMurray was more than twice the average income of females (Harvey 1981:127). These income differentials were not unusual for an economically underdeveloped community, such as Fort McMurray had been.

Table 5. Fort McMurray and Alberta: Average Wage and Salary Income Based on Earnings During 12 months Prior to 1 June 1961, for Population Age 15 and Over.

Population with Income Only	Fort McMurray	Alberta
	$	$
Males	3207	3733
Females	1585	2001
Both Sexes	2933	3220

Source: Harvey (1981:141)

5.3 HOUSING

Housing stock in Fort McMurray, reflected the community's small size: in 1961, there were 301 dwelling units in the town. Over 60% of those dwellings was built between 1920 and 1945, which would indicate that the quality of local housing was well below the accepted standards. Between 1946 and 1961, only 33.2% private dwellings was built in Fort McMurray, compared to 55.1% in Alberta (Harvey 1981:161). In general, the local housing costs were similar to those found in other communities of comparable size in Alberta. Pressures of high demand for housing were yet to be generated by development of the oil sands.

5.3.1 Housing Characteristics

During this period, Fort McMurray's entire housing stock was dominated by conventional single family detached dwellings. Apartments and mobile homes were completely absent from the town. Most of the dwellings was owner occupied (70%), and the rest was rented. In this respect, the situation in the community did not differ from that in the Province (Harvey 1981:152).

The proportion of single room dwellings (9.5%) and of more than 6 room dwellings (5%) was relatively low in Fort McMurray. In 1961, the average number of rooms per dwelling was 4.1. The average number of persons per room was 1.14, which was considerably higher than the 0.76 persons per room in Alberta (Harvey 1981:165). Utility facilities were not nearly as developed as in most dwellings elsewhere in Alberta. Over two-thirds (68.8%) of Fort McMurray's dwellings had no running water, compared to only 21.4% in Alberta. The same scenario prevailed with respect to bath and toilet facilities which were not available in the majority of houses in the community (Harvey 1981:154).

5.4 SERVICES AND FACILITIES

Similar to other small towns of northeastern Alberta, community services and facilities were limited in Fort McMurray in 1961. Despite the approaching commercial exploitation of the oil sands, most services and facilities did not expand during the pre-construction period.

5.4.1 Commercial Sector

Although it is possible that commercial services began to increase in Fort McMurray in 1963, at the time, there were only seven retail outlets in the town. The number of manufacturing establishments, mainly wood and food industries, had remained virtually unchanged (Nichols 1979:50). In short, no development occurred in the commercial sector of Fort McMurray before the construction of the oil sands projects.

5.4.2 Health and Community Services

The provision of health services appeared to have been relatively better in Fort McMurray prior to the oil sands development than afterwards. The community had one hospital with 25 beds, which admitted about 700 adults and children annually, and which was designed to service the outlying communities as well as the town itself. Consequently, the number of hospital beds per 1000 population was relatively high, and the ratio amounted to 22.5 beds in 1961, and to 19.4 beds in 1963. Despite the slight decline, the 1963 ratio was significantly higher than that observed later, during the oil sands development activities (Harvey 1981: 196).

Other social services provided by the Government were very limited. Only the Department of Transportation, National Defence, and Postal Service were actively in place (Nichols 1979: 52).

No information was available in AOSERP Human System reports on educational, cultural, and recreational services for this period. It would appear though, that no significant changes had occurred in the exisiting school system or in the delivery of recreational and cultural services and facilities in town.

5.4.3 Protection and Criminal Justice

Crime rate in Fort McMurray had been traditionally higher than the Alberta average, and criminal offences were dominated by male offenders. The rate was lower however, prior to the construction of Suncor than afterwards. There were one or two policemen and one police car taking care of about 145 crimes annually, of which only about 30% were criminal code offences, compared to between 40% and 50% for Alberta (Harvey 1981:195, 206-7).

5.4.4 Physical Infrastructure

The physical services and infrastructure facilities had not significantly changed between 1961 and 1963. Fort McMurray's municipal infrastructure remained limited throughout the pre-construction period to only 16 miles of public thoroughfares (Harvey 1981:186). Moreover, the community suffered from the lack of adequate transportation access.

Historically, water and rail transportation systems played a major role in linking Fort McMurray with the outside world. In the early 1960s, Highway 63 which was to link the community with Edmonton, was still under construction. Over the period however, air traffic to and from Fort McMurray acquired importance. In 1963, more than 5000 passengers travelled the Fort Murray - Edmonton air route (Nichols 1979:22-31).

5.5 COMMUNITY RESPONSES

Fort McMurray experienced little change during the pre-construction period; rather, it was relatively stable as a small community of northeastern Alberta. No information was obtained by AOSERP Human System on individual human responses to the impacts which were anticipated in Fort McMurray as a result of impending development of the oil sands. However, the expectation of imminent commercial exploitation of the resource and associated urban expansion induced the local Town Council to apply in 1962, for the New Town status for the community.

Meanwhile, between 1961 and 1963, no effective plans were developed for the community's urban growth. There were few building proposals and there were no land servicing responses in anticipation of the oil sands development. Similarly, the community lacked many services and facilitites due to the lack of effective demand as well as the lack of planning. Of the services available, hospital and public health services appeared to have been used to a significant degree. At the same time, there was inadequate supply of cultural and recreational facilities. The demand for these facilities was reflected indirectly, by higher

than the Alberta average per capita consumption of alcohol (Harvey 1981:204), which provided a common alternative to cultural and recreational entertainment.

The New Town status, which was granted to Fort McMurray in 1964, had transferred the responsibility for planning and financing the town's urban development to the Alberta Department of Municipal Affairs. In addition, the oil sands industry started also to show concern about availability of housing and community services in Fort McMurray. All these factors brought about subsequent radical changes in the community's socio-economic structure and local conditions of life.

6. CONSTRUCTION OF SUNCOR: 1964-1967

The Government of Alberta had approved construction of the Suncor project in 1963. During the construction period, significant changes started to occur in Fort McMurray. The community's population increased rapidly as a result of growing demand for skilled labour force, necessitating the construction of new housing and expansion of the urban infrastructure, services, and facilities. The transition of this small northern community into an urban centre had thus begun.

The construction activities peaked in 1966, which was also the year of Statistics Canada Population Census. Changes which took place in Fort McMurray between 1961 and 1966, have been identified in this chapter.

6.1 POPULATION

Between 1964 and 1967, the population of Fort McMurray had nearly doubled, growing at the rate of 18.1% annually. From 1627 inhabitants in 1963, the population increased to 2614 in 1966, and then to 3169 in 1967 (Harvey 1981:55). These figures did not include the workers employed in plant construction, who lived at a camp on the Suncor site, 32 km north of Fort McMurray. In 1966, at the peak of construction activities, the construction camp housed nearly 2300 workers, which was only about 300 people less than the population of Fort McMurray at that time (Nichols 1979:58). Although the numbers of workers at the construction camp tended to fluctuate, their impact on the community should not be underestimated.

6.1.1 Population Characteristics

With the in-migration of new residents into Fort McMurray, age composition of the population began to change and the proportion of people in the prime years of working life started to grow. Between 1961 and 1966, the proportion of those between 20 and 44 years old grew from 27.9% to 37.6%, while those less than 20 and older

than 44 decreased by about 5% each, to 46.4% and 15.8% respectively. The proportion of children less than 15 years old declined from 42.7% in 1961 to 39.3% in 1966 (Harvey 1981:56). Evidently, the people arriving in the community were predominantly of young working age.

As might be expected, the new arrivals were mostly men. In 1966, there were 128.7 males per 100 females in Fort McMurray, compared to 119.2 males per 100 females in 1961. The largest increase of males occurred in the age group between 25 and 54, where the ratio had jumped to 151.9 males per 100 females in 1966, compared to 99.6 in 1961 (Harvey 1981:57). The predominance of men in the community during the construction period was not unusual for a resource town.

Unlike most resource development communities, Fort McMurray had a higher proportion of married people in 1966 than before the construction of Suncor. Of those age 15 and older, 69.7% was married (compared to 63.3% in 1961). Of the total population, 42.6% was married (compared to 37.4% in 1961), but the married statistics included those who were separated. The proportion of single people was 55.5% (4% less than in 1961), with those widowed and divorced accounting for 1.9% of the residents. On the average, there were 5.3 marriages per 1000 population annually between 1964 and 1967, compared to 2.6 in the pre-construction period; this was still lower though, than the rate of 8.0 in the Province (Harvey 1981:62-3; Gartrell et al 1980:46).

Dramatic changes occurred in Fort McMurray, in the rate of natural increase. Between 1965 and 1968, the average live birth rate jumped to 38.5 per 1000 population (compared to 18.3 in the pre-construction period), and was higher than the rate of 21.0 for Alberta. The average death rate decreased to 4.7 per 1000 population, from 6.0 prior to the construction, and was lower than the Provincial rate of 6.5. The average infant death rate dropped from 151.0 per 1000 live births prior to the construction of Suncor, to 40.4 between 1965 and 1968, though it remained higher than the rate

of 21.3 for Alberta. These changes affected the average annual rate of natural increase in the community, which was 13.3 per 1000 population during the pre-construction period, but which escalated to 33.8 per annum for the period between 1965 and 1968, and was higher than the rate of 14.4 for Alberta (Harvey 1981: 58-61).

No data were found on ethnic origins or religious affiliations of the population in Fort McMurray during this period. Similarly, no information was obtained about the educational level of local residents.

6.1.2 Families

Reflecting changes in other demographic characteristics, the families in Fort McMurray became smaller and younger. In 1966, the majority of families (94.7%) maintained their own household. Of those not maintaining their own household, 2.8% was related to primary family, and 2.4% was lodging. The average number of persons per family decreased from 4.557 in 1961 to 4.182 in 1966. Simultaneously, the proportion of families with 5 or more persons declined from 44% in 1961 to 38.2% in 1966, with a corresponding increase of about 3% each in the proportion of families composed of 4 and 2 persons.

Between 1961 and 1966, the number of families had nearly doubled (from 227 to 532) and predictably, the age of family heads became younger. The proportion of family heads below 25 years of age grew from 5.7% in 1961 to 9.7% in 1966, but the proportion of those between 25 and 34 years of age escalated from 23.8% in 1961 to 31.4% in 1966. Except for a slight increase in the proportion of family heads age 70 and over, the proportion of families headed by people in all the remaining age groups had declined. At the same time, a great majority of the families (95.3%) had both spouses living at home, and only 2.4% had one spouse living at home. The remaining families were headed by widowed (1.5%), divorced (0.4%), and never married (0.4%) individuals (Harvey 1981: 85-8).

The decreasing size of families in Fort McMurray was related to the smaller number of children per family. Between 1961 and 1966, the average number of children per family declined from 2.63 to 2.203. During the same period, the proportion of families without children grew from 20.3% to 23.5%; those with one and 2 children increased from 34.8% to 37.9%; and those with 3 children grew from 13.2% to 16.5%. Meanwhile, the proportion of families with 4 or more children decreased from 31.7% to 22%. In 1966, of the total of 1172 unmarried children less than 25 years old and living at home, 86.3% was less than 15 years old (Harvey 1981:89-90). Evidently, the population migrating to Fort McMurray during the construction of Suncor, was composed not only of young single males but also of families with young children.

6.1.3 Households

Probably as a result of housing shortage, the average size of households was increasing, even though the families were becoming smaller. Between 1961 and 1966, the number of households had doubled from 301 to 610, and the average number of persons per household grew from 3.85 to 3.996. At the same time, the proportion of one-family households increased from 73.4% to 80.3%, and the multiple family households nearly trebled from 1% to 2.8%. However, the non-family households decreased from 25.6% in 1961 to 16.9% in 1966. The proportion of one-family households with additional persons grew from 5.6% in 1961 to 7.2% in 1966, and those with families not of household heads increased from 0.3% in 1961 to 0.7% in 1966 (Harvey 1981:109,111). These figures would indicate that families now were more often renting accommodation to lodgers not related to household heads.

6.2 EMPLOYMENT AND LABOUR FORCE

Scarcity of data on employment and labour force characteristics in Fort McMurray during the period when the Suncor project was built, precluded the presentation of more comprehensive

statistics in this section. The only available information indicated that during the construction of Suncor, the rate of growth of employment was about 23% per annum (Nichols 1979:60), which was higher than the rate of growth of the population in Fort McMurray (18.1%). Much of the growth in local employment was related to construction of the town. Work force involved in construction of the plant lived at camp on the Suncor site. In 1967, income levels in Fort McMurray were 13% higher than the provincial average (Table 6); the high income levels were related to the arrival in Fort McMurray of the permanent employees of Suncor.

6.2.1 Suncor Construction Camp

In most instances, the impact of a construction camp on the surrounding communities would depend on the relative size of the camp to the community. The Suncor camp therefore, might have impacted Fort McMurray quite considerably. The camp was in operation from 1964 to 1967, and housed 2300 men in 1966; at that time, the population of Fort McMurray reached 2614 residents. Despite the New Town status which was granted to Fort McMurray in 1964, the community suffered from a shortage of necessary services, including recreational facilities, the supply of which lagged behind the demand (Parkinson et al 1980:57). Consequently, Fort McMurray's services and amenities, while hardly able to accommodate the demand created by the town's residents, were not prepared for the additional demand created by workers at the construction camp.

Management and administrative personnel involved in the construction of Suncor, stayed in Fort McMurray and were bussed to the site daily. Some of their families also stayed in Fort McMurray. No data were available to determine how many workers involved in the construction of Suncor lived in Fort McMurray. Most of these workers lived at the camp on the construction site. Their work week consisted of 10-hour days, six days a week. Recreational facilities at the camp were limited,

Table 6. Fort McMurray and Alberta: Income and Taxation Statistics for Selected Years

Year	Average Income of Taxable Returns			Percentage of total returns that are non-taxable.	
	Ft. McMurray	Alberta	% of Alberta(1)	Ft. McMurray	Alberta
	$	$	%	%	%
1967	6118	5408	113.1	16.1	20.0
1968	6940	5695	121.9	13.8	19.7
1969	7469	6035	123.8	13.6	19.2
1970	7926	6355	124.7	13.2	19.0
1971	8894	7189	123.7	16.1	24.7
1972	9060	7792	116.3	15.3	22.4
1973	9826	8570	114.7	19.7	20.2
1974	11922	10112	117.9	13.8	19.2
1975	15922	12959	122.9	18.2	28.7
1976	17871	14323	124.8	16.8	27.7

Notes: (1) Ft. McMurray average income divided by Alberta average income.

Source: Adapted from Nichols (1979:120-122) by Harvey (1981:143).

but had improved with the introduction of an arena featuring sport tournaments and film shows. Officially, the camp was dry, i.e. no alcohol was allowed, though bootlegging was fairly common. Vandalism and fights were frequent in the camp. In contrast to some present day camps, women were not permitted to enter the Suncor camp. Since the road from Fort McMurray to Edmonton was yet to be upgraded, most off-duty time would usually be spent in Fort McMurray in local bars (Parkinson et al 1980:57). Given the lack of recreational facilities in town, the impact of the construction labour force on the community was overwhelming.

Not all the construction workers though, were involved in the building of Suncor. Simultaneously with the plant construction, there proceeded the construction of housing and commercial facilities required to accommodate the increasing population of Fort McMurray. Even if it were possible to differentiate the impact on the community of construction workers apart from the impact of the rapidly growing population, it would be impossible to determine which construction workers, the ones building the Suncor plant or the ones building the town, were responsible (Parkinson et al 1980:57).

6.2.2 Native Employment

The participation of Native workers in development of the Suncor project was not well documented and could not be traced during this period. According to Garvin and Robertson (unpublished manuscript cited by Nichols 1979:92), about 26% of the Suncor construction work force was composed of Native persons. This figure would suggest as many as 600 Native workers might have been employed at the peak of construction of Suncor (Nichols 1979: 92).

6.3 HOUSING

Construction of the Suncor project marked the beginning of growth in most sectors of the local economy, including the residential housing construction. Housing, although it did not pose

as yet an acute problem, had undergone significant changes in the whole range of its stock, composition, and market situation. At the same time, the quality of new housing in Fort McMurray was considerably higher now than the quality of housing found in the community in 1961.

6.3.1 Housing Stock

Between 1961 and 1966, i.e. over a period of five years, the Fort McMurray housing stock had grown by 103%, to 610 dwelling units (Harvey 1981:158; Gartrell et al 1980:77). Even then, at the peak of construction of Suncor, the demand for housing was higher than the supply, and this imbalance had an effect on the composition and characteristics of housing in Fort McMurray. No consistent information on the value of housing construction, rents or vacancy rates was found. The total value of building construction increased from $ 2.0 million in 1964 to $ 5.7 million in 1967, and most of the money was expended for constructing the residential followed by the institutional component of housing (Harvey 1981:153). In 1967, the estimated average price of a single detached housing unit was $ 23 000. There were no dwelling vacancies and the rental rates were higher in Fort McMurray compared to some other urban centres of Alberta (Nichols 1979:115).

6.3.2 Housing Characteristics

The composition of Fort McMurray's housing mix changed radically with the introduction of apartment housing and mobile homes during the construction of Suncor. By 1966, the proportion of single detached dwellings had fallen to 61.1%, i.e. by over 30% compared with that in 1961; semi-detached or single-attached housing remained approximately the same (8.9%) in 1966; and mobile homes and apartment units accounted for 23.3% and 6.7% respectively, of the total housing stock (Nichols 1980:101; Harvey 1981:158). Clearly, the mass in-migration of people into this resource town had necessitated the introduction of such temporary housing as mobile homes (Figure 8).

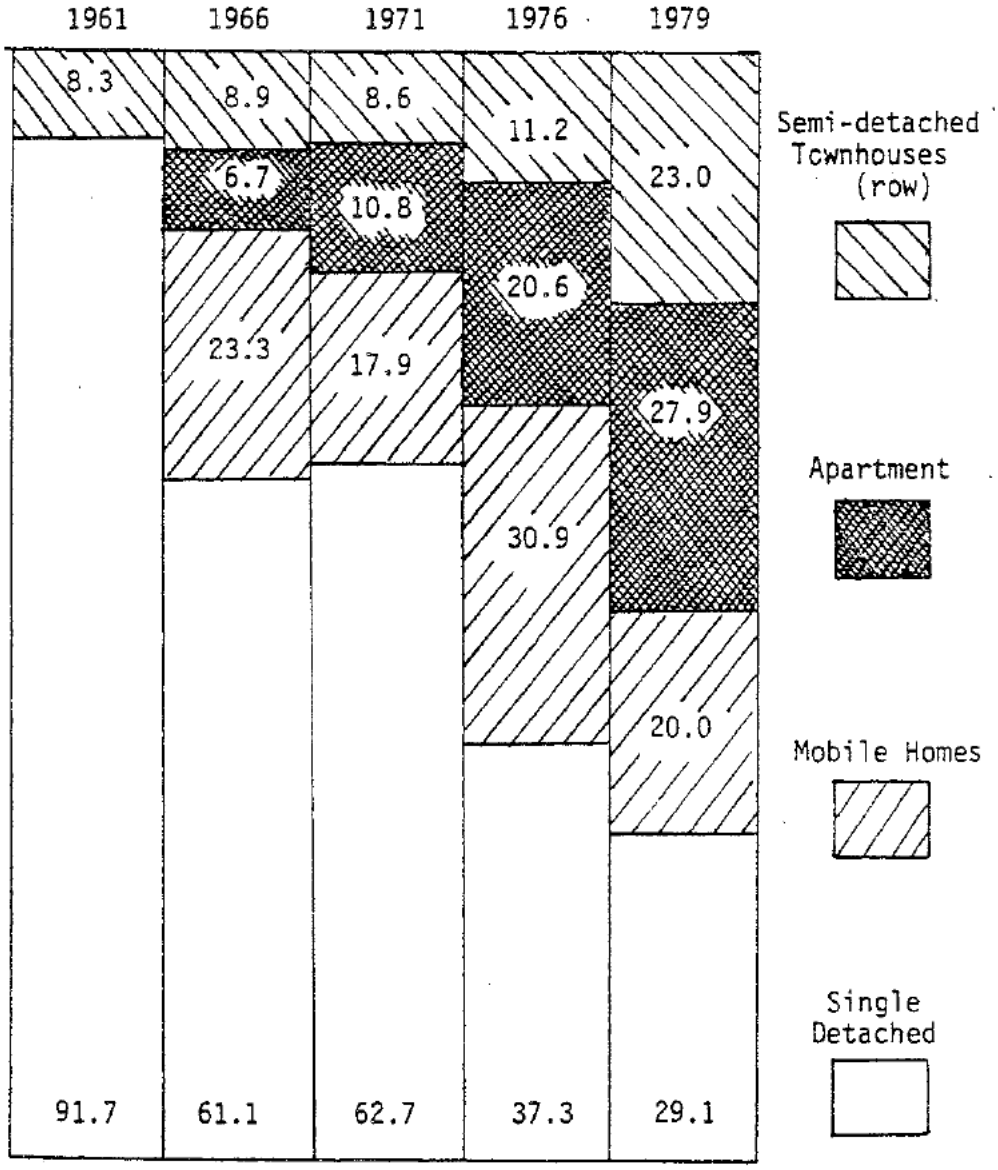

Figure 8. Composition of housing stocks in Fort McMurray, 1961 to 1979. Adapted from Nichols and Associates (1979:103) who use Canadian census results for 1961 to 1976, and New Town of Fort McMurray (1979:7). The category of "other" housing is omitted (Gartrell et al 1980:79).

Together with the diminishing proportion of single detached homes in the community, there was a dramatic decline in the proportion of residents who owned their dwellings (from 70.4% in 1961 to 56.2% in 1966). Meanwhile, the proportion of rental units increased from about 30% to nearly 44% (Harvey 1981:159). Larson (1979) attempted to explain this trend by the apparent economic instability of resource communities and the associated preference of residents to rent rather than to own accommodation. It would appear however, that the suppliers and the costs involved and not the consumer preferences were setting housing trends in Fort McMurray.

No information was available on housing density during this construction period. Relying on census results for 1961 and 1971, it could be extrapolated that the average number of rooms per dwelling was increasing in Fort McMurray, while that of persons per room was declining (Harvey 1981:165-6). Although the 1966 data on utility facilities were also lacking, the 1971 data would indicate that there had to be a considerable improvement in the municipal and residential infrastructure related to water supply, and bath and toilet facilities during the construction of Suncor.

6.4 SERVICES AND FACILITIES

Little information was available on community services and facilities in Fort McMurray during this period. In general however, the supply of services and facilities appeared to have lagged considerably behind the demand created by the rapidly growing population of the town.

6.4.1 Commercial Sector

Commercial sector of Fort McMurray, including retail and business services, grew quickly during the construction of Suncor. By 1966, there were 22 business service locations and 30 retail outlets supplying food, general merchandise, automobiles, apparel and accessories, hardware and home furnishings, and other retail services. With the overall sales in the community ammounting to $ 3.8 million,

the distribution of sales varied. The sales of general merchandise (25.4%) and automobiles (17.7%) constituted the largest proportion of total sales in Fort McMurray in 1966. While the supply of and demand for commercial retail and business services increased significantly, there were no changes in the existing manufacturing establishments (Harvey 1981:173-5,190-3; Nichols 1980:42).

6.4.2 Health and Community Services

Health services in Fort McMurray could not meet adequately the rising demand. In 1966, after the new hospital had opened, the number of hospital beds increased from 25 to 64. This would be the only year when the ratio of hospital beds per 1000 population was higher (25.4) than prior to the construction of Suncor. By 1967, the ratio had dropped to 18.9, and was steadily declining thereafter until 1977. Meanwhile, the annual admission of patients had increased from about 700 prior to 1964 to over 2200 in 1967 (Harvey 1981:176,196).

No significant changes occurred in the organizational or institutional infrastructure in Fort McMurray during the construction period. Limited government services were available in the community, with the Provincial Government being represented by the Alberta Government Telephones, the Department of Lands and Forests, and the Department of Industry and Development (Harvey 1981:178).

The rising population of Fort McMurray exerted considerable pressure on the educational institutions as well as on cultural and recreational services. No data were available on these aspects of community services for the period. It would appear, though, that in spite of the increasing demand, no major changes had occurred in the delivery of these services. In 1965, Keyano College was established in Fort McMurray, as an Alberta Vocational Centre institution. No comparable events were recorded in the elementary and secondary school systems. Instead, there were indications of manifold organizational and financial

difficulties related to developing the school facilities at the time (Nichols 1980:67).

6.4.3 Protection and Criminal Justice

The construction period featured a considerable increase in Fort McMurray's crime rate and a corresponding increase in the demand for protection services. The local average annual crime rate was nearly double the crime rate for Alberta, reaching 1149 crime offences in 1967 (or 36 257.4 per 100,000 population), i.e. over three and a half times the Alberta rate. In the same year, criminal code offences had also increased to a peak of 18 270 per 100 000 population. Although males still represented the majority (201) of criminal code offenders, a considerable number of females (25) was also charged under the criminal code. The federal statutes offences and municipal by-law offences had decreased to a half of those in the earlier period, but the provincial statutory offences had increased significantly. To meet the rising demand for local protection services, the Fort McMurray police force was expanded to 5 policemen and 2 cruisers (Harvey: 1981:180-3, 206-12). No information was found on any changes in the facilities of criminal justice services.

6.4.4 Physical Infrastructure

The oil sands development had stimulated the demand for transportation of materials and goods for plant construction, for urban and regional infrastructure construction, and for urban supplies. In 1965, the Athabasca Bridge was opened, and in 1966, the construction of Highway 63 linking Fort McMurray with Edmonton was completed and the northward extension of the highway was designed. Despite the competition that improved road access subjected the railway to, the latter continued to play an important role in transporting supplies to the region. But the volume of cargo handled by the water transportation system began to decline. A significant improvement in the regional transportation system

occurred in 1967, when a pipeline was brought into service providing natural gas to the Suncor plant, to the Amoco and Texaco experimental plants, and to Fort McMurray.

During this construction phase, air traffic had increased significantly and the passenger movement peaked at 41,000 in 1966, declining thereafter until the construction of Syncrude was underway (Nichols 1979:22-31). At the same time, the total mileage of public thoroughfares had nearly doubled in Fort McMurray, from 16 miles in 1964 to 31 miles by 1967 (Harvey 1981:186).

6.5 COMMUNITY RESPONSES

No data were found on community responses to the demographic changes in Fort McMurray, or to the conditions of employment during the construction of Suncor. Undoubtedly though, considerable efforts were made by Suncor, the government, and construction industry to house the in-coming population. Data on residential building permits for 1966 indicated the increasing volume of building activities, mostly single dwellings (59%) and apartments (21%). Mobile homes for which permits would not be required constituted a significant share of the local housing market (Nichols 1979:99). As a result, more housing options became available; the provision of utility facilities was also advanced compared to other communities of similar size in Alberta.

The simultaneous plant and town construction had considerable impact on the community of Fort McMurray. Life in the community was quite difficult. Many services and facilities were lacking, while those that existed could not meet the steadily rising demand. Some of these inadequacies as well as other frustrations with local life were reflected in the alcohol consumption rate which was over three times the Alberta rate (Harvey 1981:204-5).

Parkinson (et al 1980:58) remarked on the boredom and loneliness of wives whose husbands worked 12 hours a day, seven days a week, at the construction site. Being left alone in Fort McMurray, some of those wives decided to leave for Edmonton. But this had been the response of people who might have had a choice.

Little was known about responses of the general population in Fort McMurray, or about their assessment of the quality of life in the community. Although frequent complaints were heard about the high rate of labour turnover during the construction of Suncor, no systematic data had been collected to substantiate these complaints. In most resource communities, the highest rate of labour turnover would occurr during the construction phase and in the early years of the operational phase (Harvey 1981:237).

7. SUNCOR OPERATIONAL: 1968 - 1973

Most socio-economic trends which had originated in Fort McMurray during the construction of Suncor, persisted after the project had entered into the operational phase. The population continued to grow. Some of its characteristics corresponded more closely though, to those found in urban Canada, than to those associated usually with northern resource communities. There was also a steady expansion of the town's urban infrastructure, and of local services and facilities. Nevertheless, the growth of demand for community services continued to outpace the ability of the planners and administrators to provide them. Fort McMurray was yet to become more stable as a community, when construction of the second oil sands project began to approach.

Data depicting socio-economic conditions in Fort McMurray during the period when Suncor alone was operational, had come mainly from the 1971 Statistics Canada Population Census. At that time, there were approximately 1500 permanent operating employees working for Suncor, and the plant production was close to reaching design levels. Since preparations for the development of Syncrude had not started as yet, the 1971 data could be considered as representative of the local conditions of life during Suncor's operational phase. These data were relied upon in this chapter, to illustrate changes which occurred in Fort McMurray after the construction of Suncor had ended.

7.1 POPULATION

Between 1967 and 1971, the population of Fort McMurray had more than doubled, reaching 6847 inhabitants; it had nearly trebled by 1973, with 9475 residents in the community. The average annual rate of growth of the population was 21.2% between 1966 and 1971, falling to 17.6% after 1971. These average rates could be misleading however. For it would appear that the commencement of production by Suncor in late 1967, led to a massive arrival in Fort McMurray of the plant operating employees, which resulted in

a very sudden increase of the population by 1968.*

7.1.1 Population Characteristics

By 1971, Fort McMurray became an even younger community than it was during the construction of Suncor. The proportion of residents less than 45 years old increased between 1966 and 1971, from 84% to 90.7%, with those between 20 and 44 years of age representing 39.2% of the population. Those less than 20 years old grew from 46.4% in 1966 to 51.5% in 1971, and the proportion of children younger than 15 increased from 39.9% to 43%. The population age 45 and older decreased from 15.8% in 1966 to 9.5% in 1971 (Harvey 1981:56). These data indicated that many of the young adults arriving in the community had young children.

The arrival of more families into Fort McMurray was signalled also by the more balanced sex ratio. After the period of construction, during which there were 128.7 males per 100 females, the ratio had fallen to 109.2 by 1971. The most significant decrease occurred in the age group between 25 and 54, where the ratio had declined from 151.9 in 1966 to 125.5 in 1971. Although the 1971 ratio in Fort McMurray was still high when compared with the urban Canadian ratio of 99, it was lower than the rural Canadian ratio of 116 (Harvey 1981:57; Gartrell et al 1980:43).

Changes occurred during this period, in the marital status of the population. Of those age 15 and older, 75.3% was married in 1971, compared to 69.7% in 1966. However, of the total population, the proportion of those married declined from 42.6% in

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* According to data provided by the DMA, the population of Fort McMurray grew at the rate of 47% between 1967 and 1968; the rate of population growth had subsequently decreased, reaching only 3% in 1970 (Larson 1979:93).

1966 to 41.5% in 1971, with separated persons accounting for 1.3% of the residents. The proportion of single people was similar at 55.6% to that in 1966, and 1.6% was widowed and/or divorced in 1971. On the average, there were 6.6 marriages per 1000 population annually between 1968 and 1973, compared to 5.3 during the construction of Suncor, and to 9.5 for the Province (Harvey 1981: 62-3; Gartrell et al 1980:46).

The average rate of natural increase peaked in Fort McMurray during the first few years immediately following the commencement of production by Suncor, and was decreasing ever since. Between 1967 and 1970, the average birth rate reached an all time high of 42.8 per 1000 population, and was higher than the Provincial rate of 20.2. The average death rate was lower in Fort McMurray, at 3.7 per 1000 population than the death rate of 6.4 for Alberta. The average rate of infant mortality fell to 29.2 per 1000 live births (from 40.4 during the construction stage), but remained higher than the rate of 19.6 in the Province. The rate of infant deaths in Fort McMurray continued to decline however, and between 1971 and 1974, it became lower (15.7) than the average rate for the Province, which was 16.2 per 1000 live births. The changing average birth and death rates escalated the rate of natural increase which, between 1967 and 1970, averaged 39.3 per 1000 population in Fort McMurray, compared to 13.7 in Alberta. Although subsequently, the rate of natural increase started to drop in the community, it remained nearly twice as high as that in Alberta (Harvey 1981:58-61).

Changes in the ethnic and linguistic composition of the population in Fort McMurray, were compatible with those observed in most developing northern resource towns. Between 1961 and 1971, the proportion of residents with British ethnic ancestry grew from 35.3% to 47.9%, and of those with French ancestry declined from 23.8% to 13.1%; that of Native Indian population fell from 11.9% to 6.5%. The remaining ethnic groups decreased also from 29% in 1961 to 22.5% in 1971. The proportion of those whose mother tongue was English grew between 1961 and 1971, from 71.8%

to 82.1%; of those with French mother tongue declined from 8.6% to 6.2%; and the remaining linguistic groups decreased from 19.6% to 11.7% which included 3% of the residents whose mother tongue was one of the Native languages (Harvey 1981:64-5).

Those changes were accompanied by changes in the religious affiliations of the population. By 1971, the proportion of Roman Catholics decreased in Fort McMurray to 38.7% (from 60.5% in 1961), though was still the largest. The proportion of people affiliated with the United Church grew to 21.1% (compared to 13.7% in 1961), and the proportion of those affiliated with the Anglican Church increased slightly, by about 1% to 14.3% (Harvey 1981:66). In general, religious composition of the community was quickly becoming much more heterogenous.

Educational level of Fort McMurray's residents advanced quite dramatically; in some respects, the local population was better educated than that in the rest of Alberta. In 1971, of the population 15 years old and over attending and not attending school, 22.4% had less than Grade 9 education, compared to 25.3% for Alberta; 67% had between Grade 9 and post-secondary non-university education, compared to 62.2% in Alberta; and 10.6% had university education, compared to 12.5% in Alberta. The current level of education of the community stood in direct contrast to that in 1961, when of the population 15 years old and over not attending school, as much as 66.3% had less than Grade 9 schooling (Harvey 1981:67). This improvement in the education of local residents reflected the hiring of highly skilled personnel during construction and operations of the Suncor project.

Residents living in Fort McMurray were relatively mobile. In 1961, those born outside Canada comprised 10% of the local population. By 1971, the proportion of people born outside the country was 12.9%, but was lower than the 15% of foreign born residents in the Prairie region of Canada. The rest of the residents in the town consisted of 25.3% born in other provinces, and 61.8% born in Alberta (Harvey 1981:69; Gartrell et al 1980:52).

7.1.2 Families

In the late 1960s, during the first two years of operations of Suncor, families with children moved to Fort McMurray in great numbers. By 1971, the number of families in town was 1475, compared to 532 families in 1966. The proportion of families maintaining their own household grew from 94.8% in 1966, to 98% in 1971; that of families not maintaining their own household declined from 5.2% to 2.4%, with lodgers representing only 1%. No data were available for 1971 on the average number of persons per family, but families in the town were becoming increasingly younger. Between 1966 and 1971, the proportion of family heads less than 25 years old grew from 9.7% to 12.1%, and of those between 25 and 34 years of age escalated from 31.4% to 41.2%. Except for an increase of 2.1% in the proportion of families headed by people between 35 and 44 years old (25.3%), the proportion of families headed by individuals in all the remaining age groups had declined. Most of the families, which were headed by married people, had both spouses living at home (93.6%), and only 0.7% had one spouse living at home. There were however, families headed by separated (2.4%), widowed (1.7%), divorced (0.7%), and never married (1%) individuals (Harvey 1981:85-8).

With the arrival of young families, the number of children had increased in Fort McMurray: on the average, there were 2.281 children per family in 1971, compared to 2.203 in 1966. Between 1966 and 1971, the proportion of families without children fell from 23.5% to 14.9%; that of families with one or two children jumped from 37.9% to 47.8%; and that of families with 3 or 4 children grew from 25.3% to 28.1%. Meanwhile, the proportion of families with 5 or more children declined from 13.2% to 9.5% (Harvey 1981:89). The increasing proportion of young families with children appeared to indicate a greater stability of community life.

7.1.3 Households

The early years of Suncor's operations induced a growth in the number of households in Fort McMurray, which had risen from 610 in 1966 to 1615 by 1971. At the same time, the households were now larger: their average size increased to 4.2 persons per household (from 3,996 in 1966), mainly because of a larger number of children. Between 1961 and 1971, the proportion of one-family households grew from 80.3% to 88.6%, while that of multiple family households declined from 2.8% to 1.2%, and of non-family households dropped from 16.9% to 10.2%. However, the proportion of one-family households with additional persons grew from 7.2% in 1966 to 10.2% in 1971 (Harvey 1981:109,111). Of the 510 non-family persons living in Fort McMurray's households in 1971, over 43% were lodgers not related to household heads (Harvey 1981:92). On the average, there were 0.3 non-family persons per household. These statistics would indicate the existence of a housing shortage which was alleviated by renting of accommodation.

7.2 EMPLOYMENT AND LABOUR FORCE

Construction and operations of the Suncor project had a dramatic effect on the employment situation in Fort McMurray. Within one decade, enormous changes occurred in the labour force participation rate, employment distribution, and relative income levels.

7.2.1 Labour Force Participation

By 1971, four years after Suncor became operational, the overall LFP rate grew to 67.7% (compared with 48.5% in 1961), and was 5% higher than that in Alberta. Over 37% of residents in Fort McMurray was in the labour force; only 3% less than in Alberta. The male LFP rate in 1971 was nearly 92% (compared to 72% in 1961), of whom 89.3% was employed; the female LFP rate was slightly over 40% (compared to 20.4% in 1961), of whom 37.6% was employed. Together with an increase in the labour force participation rate, there was also an increase in the unemployment rate. In fact, the

overall unemployment rate grew from 1.5% in 1961 to 3.9% in 1971, with male unemployment being 2.9% and female unemployment being 6.6% (Nichols 1979:61; Harvey 1981:132).

The 1971 unemployment rate in Fort McMurray was lower than the unemployment rate in Alberta (6.4%), and this was reflected in every age group. Conversely, the LFP rate was higher for most age groups in Fort McMurray than it was in Alberta. This fact was particularly striking among people between 55 and 64 years old, whose labour force participation rate in the community was 79.4% compared to 61.7% in Alberta. Although there was a positive relationship between education and labour force participation rate, the 1971 LFP rate for those with less than Grade 12 education was higher in Fort McMurray (63.6%) than in the Province (55.5%), while the unemployment rate was lower in the town (2.85%) than in Alberta (6.95%). These figures would indicate that older people, who had resided in the community for a long time, found no difficulties in obtaining employment, despite their relatively low education (Harvey 1981:125,133,135).

7.2.2 Employment Distribution

As might be expected, construction and operation of the Suncor project had altered industrial distribution of the Fort McMurray labour force. The largest employment was provided in 1971 by mining (35.6%), with the community and personal services following next (23%); then came construction (12.6%) and trade (10.2%). Employment provided by transportation fell from 37% in 1961 to 6.9% in 1971. Also the occupational structure of the community became more diversified. Though craftsmen were still the most numerous (27.2%), the proportion of the labour force in sales and services decreased somewhat from that in 1961, and there was a significant growth of people in the professional, technical, and clerical occupations (Harvey 1981: 139-140).

The proportion of self-employed labour force decreased in Fort McMurray to 3.4% by 1971 from 12.7% in 1961, while the proportion of wage earners increased to 93.5% (from 86.1% in 1961),

and of the unpaid family workers to 3.0% (from 1.2% in 1961). Among men, the self-employed constituted 3.7%, the wage earners 96%, and unpaid family workers 0.3%. Among women, there were 3.5% self-employed, 86.1% wage earners, and 10.4% unpaid family workers (Harvey 1981:138). By comparison with 1961, there was a considerable increase of the wage earning men, and a decrease of the wage earning women, which was accompanied by an increase of women in unpaid family work. These changes reflected Fort McMurray's evolution into an urban industrial service centre.

7.2.3 Relative Income Levels

Statistics on the income and taxation in Fort McMurray and Alberta (Table 6), indicated that the average income in the town had increased faster than that in the Province. By 1971, the average income in the community was 23.7% higher than the Alberta average. That differential dropped back to about 15% to 16% between 1972 and 1973, which might be attributed to the stabilization of operating employment at the Suncor plant, and the growth of jobs in the service sector which would pay lower wages (Nichols 1979:123). Among the population with income, the average total income for women in Fort McMurray was $2524, representing less than one-third the average total income for men which was $8403. This wide gap was even larger than that in 1961, and than that in Alberta (Harvey 1981:128,142).

In summary, during the period when Suncor alone was opertional, Fort McMurray had a slightly higher overall labour force participation rate than Edmonton or Alberta; higher employment for males but lower for females; and lower incomes from non-employment sources. As a result of these features, in 1970, the total average income for all households in Fort McMurray was about 12% higher than that in Edmonton. Among family households, the total income was only 4.5% higher than in Edmonton, but among non-family households, the total income was 39% higher in Fort McMurray than in Edmonton. Moreover, the employment incomes of non-family households

were 63% higher in Fort McMurray than in Edmonton. This phenomenon could be explained by the disproportionately high labour force participation rates of non-family household members in Fort McMurray, in the high-paying construction industry and highly skilled trades categories (Nichols 1979:125).

7.3 HOUSING

During this period, further changes occurred in the Fort McMurray housing stock, composition, and market. The housing stock grew to 1620 units by 1971; this represented an increase of about 1300 units over the 1961 level (Nichols 1980:100; Gartrell et al 1980:78).

Following the completion of housing for most current employees of Suncor in the late 1960s, the volume of construction fell quickly to one million dollars in 1969. As plans for construction of the Syncrude project were completed in 1973, the volume of construction had increased in Fort McMurray to $5.5 million. Similarly, the number of building permits for residential units in the town fell to a bottom level of only 13 in 1969, before increasing to 125 in 1970, and to 271 in 1973 (Harvey 1981:153). This steady increase had been gaining momentum after the approval of the Syncrude project in 1973. Moreover, in the early 1970s, along with residential and institutional investment, there was significant investment for commercial development (Harvey 1981:63).

Until 1973, housing prices increased moderately in the town, at the rate of 6% per annum; much of that increase could be attributed to rising land costs (Nichols 1979:114). There were no housing vacancies; the rental rates, which jumped sharply between 1971 and 1972, had stabilized, but for the subsequent two years only (Nichols 1979:111).

7.3.1 Housing Characteristics

In comparison with the Suncor construction period, characteristics of the Fort McMurray housing stock changed little

by 1971. Single detached (62.7%) and semi-detached (8.6%) dwellings remained roughly constant as a proportion of the total housing stock; there were proportionately somewhat fewer mobile homes (17.9%) and more apartments (10.8%) in 1971 than in 1966 (Nichols 1979:103; Gartrell et al 1980:80; Figure 8). Of all the private dwellings in 1971, as much as 62% was built between 1966 and 1970, indicating that the development of Suncor had a strong impact upon the expansion of housing (Harvey 1981:153,161).

The home ownership trends also changed little between 1966 and 1971. With a continued decline in owner occupied dwellings (55.1%) and an increase in rental units (44.9%), the change over these two focal years was not more than one percent. Between 1961 and 1971 however, i.e. during the population census decade, the decline in home ownership amounted in Fort McMurray to about 15%. This was much higher than the comparable change in Alberta, which featured a decline of about 6% in the owner occupied dwellings (Harvey 1981: 159).

The average number of rooms per dwelling had increased in Fort McMurray between 1961 and 1971, from 4.1 to 4.9 rooms. The greatest changes occurred in the number of one and two room dwellings which decreased from 22.5% of total dwellings in 1961 to only 4% by 1971. The greatest increase occurred in the number of five room dwellings which represented 36.7% of all private dwellings in 1971, compared to 23.3% in 1961. This change had considerable impact on the average number of persons per room, which decreased from 1.14 in 1961 to 0.84 by 1971. Despite the considerable decrease, room density in Fort McMurray remained higher than that in Alberta (Harvey 1981:154).

Tremendous improvements took place in the utility facilities, including water supply, and bath and toilet facilities, which were provided in Fort McMurray. In 1971, only 5.6% of the Fort McMurray private dwellings had no running water, compared to 9.9% in Alberta. Similar changes occurred with respect to bath and toilet facilities; a larger proportion of private dwellings in Fort McMurray had such facilities than in Alberta (Harvey 1981:154).

7.4 SERVICES AND FACILITIES

After Suncor had commenced production, there followed steady development of most services and facilities in the town. Difficulties were encountered in some sectors however, in meeting the growing demand for community services.

7.4.1 Commercial Sector

The delivery of commercial services accelerated in Fort McMurray with an upward trend in the volume of retail and business activites. After 1970, the growth in total retail and business sales averaged 50% annually (Nichols 1980:41). No major changes occurred though, in the distribution of retail outlets by retail business groups. During this period, an increasing proportion of total sales consisted of the general merchandise and automotive sales. The retail sales of hardware and home furnishings, apparel and accessories decreased from 17.1% in 1966 to 12.4% in 1973, but sales of foods and food products had increased two and a half times. In general, the level of delivery of retail and business services was still relatively inadequate. In the manufacturing sector, the establishments changed little, but the employment had increased from 25 workers in 1972 to 73 workers in 1973 (Harvey 1981:173-5,190-4).

7.4.2 Health and Welfare

The demand for medical services in the town was outpacing the capacity of local health care facilities. In 1970, the hospital beds were reduced from 64 to 54 because the new hospital, which was opened in 1966, had ceased to exist as a separate operation. Meanwhile, the population of Fort McMurray was growing rapidly, and the number of hospital beds decreased from 12.8 per 1000 population in 1968 to only 6.6 in 1973. In contrast, the number of hospital admissions had increased from over 2400 in 1968 to nearly 2800 in 1973, as did the number of new-borns, in-patient and out-patient operations, and mothers delivered during this period (Harvey 1981: 176,196).

Little improvement occurred in the government institutional services available to the community, but the regional office dealing with public assistance cases had been operational in Fort McMurray since 1965. While the public assistance caseload had increased nearly four times between 1968 and 1973, and was rising thereafter, it would be difficult to determine the exact reasons for this increase. The rising demand for welfare services could have been due to the population increase, increase in the staff servicing the population, and an increase in the actual need for social assistance (Harvey 1981:176,197).

7.4.3 Education

The local Separate and Public School Districts were responsible for developing the primary and secondary school facilities in Fort McMurray. Since 1972, the local school enrolments had increased remarkably, and already by 1973 the enrolments had exceeded the available facilities. This imbalance between the supply of educational facilities and the demand for them gave rise to concerns that space shortages were constraining the curriculum offered (Nichols 1980:67).

7.4.4 Culture and Recreation

In the development of cultural and recreational services, the emphasis had been placed on recreational as opposed to cultural facilities. Basic recreational facilities, such as a swimming pool, golf course, an arena, curling rinks, and ball diamonds were provided, although not always according to accepted standards. Only two amenities of a cultural nature were available, the library and a cinema hall. An open space inventory conducted as part of the 1972 Municipal General Plan indicated that enough developed park and recreational space existed to meet the needs of the population of Fort McMurray during this period (MTB Consultants 1980:34-5).

7.4.5 Protection and Criminal Justice

Even though in response to the growing number of crimes in Fort McMurray, the local police personnel had been tripled, the police force was overworked. Between 1968 and 1973, the crime rate was on the average nearly twice as high in the town as it was in the Province. While in comparison with the Suncor construction stage, the local rate of federal statutory offences had decreased and the provincial statutory offences had remained roughly the same, the rate of the municipal by-law offences had grown (Harvey 1981: 207-12). Consequently, by 1973, the police personnel was increased to 16, including 10 policemen and 6 civilians of whom 3 were women. One more police cruiser was also added to the force bringing the total to 3 cruisers (Harvey 1981:195). No information was available on similar changes in the criminal justice services.

7.4.6 Physical Infrastructure

Despite the growing demand for transportation access, no additional regional physical infrastructure was provided during this period. As a result of preparations for construction of the Syncrude plant, between 1972 and 1973, the regional air passenger travel between Edmonton and Fort McMurray had doubled (Nichols 1979: 31). Also by 1973, the internal transportation infrastructure of the community was expanded from 31 miles to 42 miles of public thoroughfares (Harvey 1981:213).

7.5 COMMUNITY RESPONSES

Little information was found on responses of the residents in Fort McMurray to local conditions of life during this period. The only data available were collected in 1969, by Matthiasson (1970; 1971, cited by Gartrell et al 1980), who conducted a survey of 451 respondents living in the community. Of the total sample, 51.5% lived in Fort McMurray for up to 2 years, 36% lived in the community between 2 and 4.5 years, and only 12.5% resided there for more than 4.5 years. Though on arrival in Fort McMurray, 49.4% of the respondents had planned to stay there for more than 10 years, at the

time of the 1969 interview only 22.9% planned to stay more than 10 years. Moreover, the proportion of those who on arrival had planned to stay in the community for less than two years was 24.6%; at the time of the interview, these people constituted 42.3% of the sample. The population turnover appeared to be high therefore. But since those who had stayed longer in the past, might not have stayed longer in the future, no conclusions could be drawn about the degree of community stability in Fort McMurray at that time (Gartrell et al 1980:58-63).

Several factors might have contributed to the relatively high population turnover observed by Matthiasson's study. First, the survey was conducted in the second year of Suncor's operations. That was too early to allow the community's population to stabilize after the turmoil of construction period, and the influx of new residents. Secondly, the conditions of work in Fort McMurray in 1969, could be less satisfactory than in 1971, when Suncor had achieved the desired production level. The 1969 survey results allowed to tentatively conclude that job satisfaction was moderate at that time. Characteristically, newer residents reported greater satisfaction with their work than the "old-timers" (Gartrell et al 1980:252).

Thirdly, this period featured a trend away from the single family home toward apartment and mobile home living, reflecting the wide gap which existed between the home ownership costs and the income of prospective buyers. The relatively high cost of accommodation and availability of different types of housing could have generated somewhat higher residential mobility within Fort McMurray. Such mobility combined with the unsatisfactory housing conditions might have mitigated in turn, against community stability, inducing also a higher population turnover.

Finally, the inhabitants of Fort McMurray were not too satisfied with the exisiting community services and facilities (Matthiasson 1970, cited by Gartrell et al 1980:137). Among the community features "most in need of improvement", respondents to the 1969 survey gave priority to the access to cities in the south, communications, medical facilities, and entertainment and recreation.

The problems encountered in Fort McMurray in providing services and facilities which would adequately meet the needs of the local population could be attributed to the history of planning decisions as well as the topographic features of the community (Nichols 1979:43). For instance, in the commercial sector, the decentralization of business operations throughout the town and the lack of a strong central commercial area were inconveniencing the shoppers (DMA 1972, cited by Nichols 1979:43). This aspect of the urban growth had been pointed out in the course of development of the 1972 Fort McMurray General Plan.

By 1973, improved road and air service had reduced the problem of difficult access, while the introduction of local radio and television had dealt with the communications problem. The problems related to such aspects of life as adequate health care facilities, and cultural and recreational services were yet to be solved, when in December 1973, site clearing for construction of the Syncrude project had started.

8. CONSTRUCTION OF SYNCRUDE: 1974 - 1978

Fort McMurray was only beginning to adapt to its role as a resource town, when construction of the Syncrude project intervened in the community life. Whatever little stability the town had experienced between 1968 and 1973, was submerged by another period of rapid economic and urban expansion. With the development of Syncrude, a massive wave of construction activities was superimposed upon the operational stage of Suncor. But unlike Suncor which pioneered the exploitation of the oil sands, the Syncrude development could benefit from the experience of its predecessor. It could also rely on some of the facilities, such as the regional and urban physical infrastructure, which were already in place because of construction and operations of the Suncor project. The Syncrude construction activities which started in earnest in 1974, had intensified the already existing socio-economic trends in Fort McMurray. While the development of Suncor had transformed the small northern community into a resource town, the Syncrude project had expanded that town into a major urban centre.

The construction of Syncrude peaked between 1976 and 1977. Therefore, the 1976 Statistics Canada Population Census data could be considered as representative of the socio-economic conditions which existed in Fort McMurray during this construction period. These data were used in the present chapter, to identify any changes which had occurred in the community between 1971 and 1976.

8.1 POPULATION

During construction of the Syncrude project, the population of Fort McMurray grew very rapidly. This growth was accompanied by the influx of construction workers and of a "shadow" population. Most demographic trends, which had been observed during the last ten years, did continue and also intensified while the community was becoming increasingly urban.

8.1.1 Population Growth

The very rapid increase of the population in Fort McMurray constituted one of the most striking features of this period. From 9475 residents in 1973, the town grew to 15 424 in 1976, and then escalated to 24 580 in 1978. Between 1974 and 1978, the average annual rate of population growth was 21.1%. However, the rate was 17.6% prior to 1977, then jumped to 31.9% in 1977, and fell to 20.8% in 1978. The high rate of growth of the population during the last year and a half of industrial construction activities, reflected Syncrude's policy which favoured early hiring of the permanent personnel to be employed in operations of the project.

The data cited above did not include workers who were employed in construction of the Syncrude plant, and who lived in camp at the Syncrude site. At the peak of construction activities, the camp housed about 6600 workers, and was equal in size to roughly 33% of the population in Fort McMurray. Between 20% and 30% of the Syncrude construction labour force resided in the town. All construction workers used some services and facilities in Fort McMurray.

In addition, the industrial and town construction attracted to Fort McMurray a large "shadow" population. The term "shadow" population was used to depict all those people who had moved in and out of the community, and had used a variety of local services and facilities, but who were not included in the population statistics. Often, these people were semi-transients looking for employment; many of them were squatters camping in the area or in the vicinity of Fort McMurray. While it was very difficult to identify the size and characteristics of the "shadow" population, its existence was real as was its impact upon the community (Co-West Associates 1978, cited by Nichols 1980:54).

8.1.2 Population Characteristics

The new residents arriving in Fort McMurray were mainly young adults. Between 1971 and 1976, the proportion of population younger than 45 remained virtually unchanged (91%), but a re-distribution occurred within that group, in the proportions of adults and children. Those between 20 and 44 years of age increased from 39.2% to 46%, while among those less than 20 years old (45%), the proportion of children less than 15 years old declined from 43% in 1971 to 36.1% in 1976 (Harvey 1981:56). Such changes could have been expected during the construction period.

Even though increasing numbers of men were employed in local construction industry, between 1971 and 1976, the ratio of males per 100 females did not change, averaging 109.3. Changes were evident however, in the ratio for specific age groups. For instance, among those between 40 and 44 years old, the ratio grew from 130.4 males per 100 females in 1971 to 155.4 in 1976, while among those between 45 and 49 years old, the ratio grew from 125.0 to 137.5. The average ratio was not affected by these changes, because girls were more numerous than boys among children and youths (Harvey 1981:57).

Comparable to other resource communities during construction periods, Fort McMurray's married population age 15 and older had declined to 74.1% in 1976 from 75.3% in 1971. However, as a proportion of the town's total population, the married residents increased between 1971 and 1976 from 41.5% to 46.3%, and those single declined from 55.6% to 51%. Of the remaining population, 1% was separated, 0.8% was widowed, and 0.9% was divorced. On the average, there were 5.4 marriages per 1000 population annually in the town between 1974 and 1976, compared to 9.8 in Alberta (Harvey 1981:62-3; Gartrell et al 1980:46). The proportion of married residents was therefore, relatively high in Fort McMurray during this period.

Meanwhile, the local rate of natural increase began to fall. While the number of live births continued to grow in the town, the average annual birth rate had dropped to 26 per 1000

population between 1973 and 1976 (from 42.8 between 1967 and 1970). Still, the Fort McMurray birth rate was higher than the average rate of 17.7 for Alberta. The local average death rate continued to fall and was 2.5 per 1000 population between 1973 and 1976 (compared to 6.4 in Alberta). During this period, the town's average rate of infant mortality also fell to 10.7 per 1000 live births, and was lower than the rate of 14.6 in the Province. Though the average rate of natural increase declined between 1973 and 1976 to 23.6 per 1000 population, it was higher than the rate of 11.2 for Alberta (Harvey 1981:58-61).

The previously established linguistic trends continued in Fort McMurray, and the Native languages were disappearing rapidly. Between 1971 and 1976, the proportion of those whose mother tongue was English grew from 82.1% to 86%, of those whose mother tongue was French declined from 6.2% to 4.2%, and the proportion of residents who belonged to other linguistic groups decreased from 11.7% to 9.8%. The proportion of people whose mother tongue was one of the Native languages fell from 3% in 1971 to 0.7% in 1976 (Harvey 1981:64). No data were found for this period on the ethnic origins and religious affiliations of residents in the community. It could be assumed that the trends observed in 1971 did continue, and the population with British ancestry and Protestant affiliations was growing.

The complexity of technology involved in construction of the Syncrude project, required highly skilled workers, as well as people who were sufficiently educated to be easily trained. Consequently, recruitment policies of the oil sands industry raised the educational level of the population in Fort McMurray. In 1976, of the population 15 years old and over attending and not attending school, 12.7% had less than Grade 9 education (compared to 18.2% in Alberta), 71.4% had between Grade 9 and post-secondary non-university education (compared to 64.6% in Alberta), and 15.8% had university education (compared to 17.2% in Alberta). The proportion of people who completed post-secondary non-university education was 24.9% in Fort McMurray, compared to 17.8% in the

Province, and was higher in all groups between 15 and 64 years of age than that in Alberta. The proportion of people with university education was 30.2% among those between 25 and 34 years of age (27.3% in Alberta); also the groups between 45 and 64 years of age had slightly higher proportion of persons with university degrees than the Provincial average (Harvey 1981:67-8). The lowest level of education was encountered among the old time residents 65 years of age and over. The newly arrived population was both, highly skilled and well educated.

In 1976, the community was composed of unusually mobile individuals. Of those 15 years old and over, 64% had previously lived in Alberta, 29.4% resided in other provinces, and 6.6% lived outside Canada. In 1976, only 16.8% of Fort McMurray's residents lived at the same address as in 1971, compared to 44.4% of the Alberta residents. Those who moved within Fort McMurray comprised 17.5%, compared to 25.4% of the residents who moved within the same municipality in Alberta. However, 29.1% of the residents moved to Fort McMurray from within the Province, compared to 14.8% who migrated within Alberta. In addition, the proportion of people from other provinces was nearly three times higher in the community than in Alberta, while that of people from outside Canada was nearly double the proportion in the Province (Harvey 1981:69-70).

8.1.3 Families

Contrary to the stereotype of northern resource towns, the number of families had increased in Fort McMurray during the construction period, from 1475 in 1971 to 3570 in 1976. The proportion of families maintaining own households increased also to 99.6% (from 98% in 1971). The families were becoming smaller; and on the average, there were 3.823 persons per family in 1976, compared to 4.182 in 1966. The smaller size of families was related to the declining proportion of families with 5 or more persons (26.3% in 1976, compared to 38.2% in 1966). The proportion of families with 4 persons increased to 27.7% in 1976 (from 18.6%

in 1966), and that with 3 persons grew to 21.1% in 1976 (from 18.6% in 1966). The proportion of families with 2 persons remained constant at 24.7% (Harvey 1981:85-6). No data were available on the age of family heads in 1976. Most families (95.9%) were headed by married people, with 1.7% of family heads being separated, 1% widowed, and 1.4% divorced (Harvey 1981:88).

Given a considerable decline in the proportion of children in Fort McMurray at that time, the average number of children per family had also declined from 2.281 in 1971 to 1.78 in 1976. Between 1971 and 1976, the proportion of families without children grew from 14.9% to 22.8%; of families with one child at home grew from 19% to 21.8%; and that of families with 2 children remained fairly constant at 28.6%. There was a decline in the proportion of families with 3 or 4 children from 28.1% in 1971 to 22.5% in 1976, and of those with 5 or more children from 9.5% to 4.4%, respectively. Of the unmarried children less than 25 years old and living at home, 83.4% was younger than 15 in 1976, compared to 86.3% in 1966 (Harvey 1981:89-90). As might be expected, construction of the Syncrude project brought to Fort McMurray families with fewer children and often, without any children.

8.1.4 Households

In 1976, at the peak of construction activities, the number of households increased in Fort McMurray to 4220 (from 1615 in 1971). The average number of persons per household had dropped considerably from 4.2 in 1971 to 3.6 in 1976. However, the proportion of one-family households declined from 88.6% in 1971 to 83.4% in 1976; that of multiple family households remained unchanged at 1.3%; while that of non-family households escalated from 10.2% in 1971 to 15.3% in 1976. The increasing proportion of non-family households was related to the large numbers of single people who had arrived in the community because of work. The proportion of one-family households with additional persons declined by 1% since 1971, and was 9.2% in 1976 (Harvey 1981:109-111).

Of the 1565 non-family persons living in Fort McMurray's households in 1976, nearly 40% were lodgers not related to household heads; this represented a decline of about 3% since 1971 (Harvey 1981:92). On the average, there were 0.4 non-family persons per household in Fort McMurray in 1976, which was slightly more than in 1971. It would appear that, while new accommodation could be found to establish the non-family households, the housing shortage continued to induce renting of the accommodation.

8.2 EMPLOYMENT AND LABOUR FORCE

Construction of the Syncrude complex imposed on the community of Fort McMurray the second period of rapid economic expansion within the same decade. Employment opportunities were growing faster than the population, resulting in changes in the labour force participation rates. Although in percentage terms, the annual rate of growth of employment was comparable (23%) to that between 1961 and 1971, in terms of numerical growth, almost 80% of the increase in the labour force since 1961 had occurred between 1971 and 1978 (Nichols 1979:60).

8.2.1 Labour Force Participation

By 1976, the overall LFP rate grew to 69.2%, compared with 66.6% for Alberta. Of the total 15 424 inhabitants of Fort McMurray, 42.2% was in the labour force, which was only 2.5% less than in the Province. The male LFP rate was 88.6% (which was 3.3% lower than in 1971), of whom 85.2% was employed; the female LFP rate was 46.9%, of whom 42.2% was employed (Figure 9). Although the female LFP rate had more than doubled between 1961 and 1976, the Fort McMurray rate was still about 3% lower than among women in Alberta. At the same time, the unemployment rate in Fort McMurray was nearly three times higher for females (9.8%) than for males (Nichols 1979:61; Harvey 1981:132).

Moreover, the overall unemployment rate in 1976, was higher in Fort McMurray (5.7%) than in Alberta (3.5%), and higher

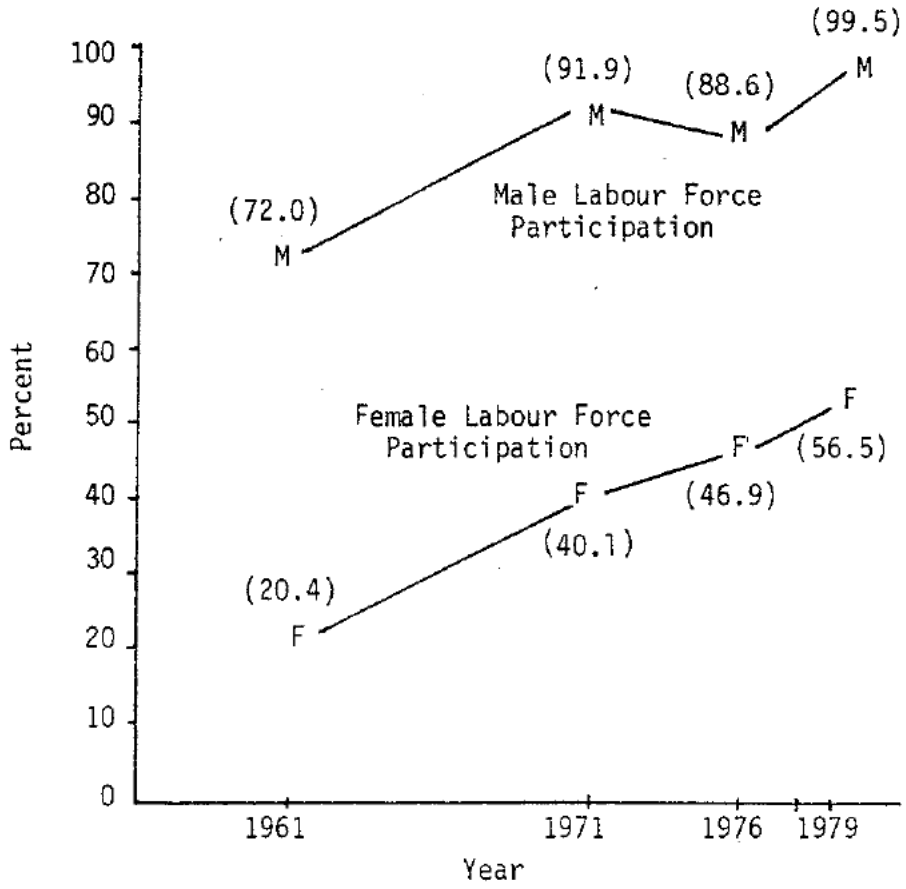

Figure 9. Labour force participation by sex: Fort McMurray, 1961 to 1979. 1979 estimates for labour force participation are from sample survey estimates for population not in school, 17 years and older. Figures for 1961, 1971 and 1976 are adapted from Nichols and Associates (1979:61) from Census of Canada figures. 1978 and 1979 data are from New Town of Fort McMurray Municipal Census 1978, 1979.

Source: Adapted from Gartrell et al 1980:152; Harvey 1981:132.

than that in 1971 (3.8%). The increase in Fort McMurray's unemployment rate was particularly striking because the Provincial rate dropped at that time to almost one-half of its 1971 level. Several factors might have been responsible for the Fort McMurray situation; the most important of these was the influx of largely unskilled young labour force attracted by prospects of jobs which were created by the construction of Syncrude.

The supposition named above would appear to be confirmed by the fact that in 1976, the unemployment rate was highest among those with less than Grade 9 education, while it was lowest among persons with post-secondary and university education. Also, the LFP rate among those with less than Grade 12 education was lower in 1976 than in 1971, even though the overall LFP rate in Fort McMurray was above the 1971 level. Furthermore, those who had remained in the town between 1971 and 1976, had an unemployment rate at least one-half (3.6%) of the rate found among those who had arrived in the community during that time from either Alberta or outside the Province (6.6%). These data would indicate the in-migration into Fort McMurray between 1971 and 1976, of less educated and more transient labour force (Harvey 1981:125-6,134, 136-7).

8.2.2 Employment Distribution

The development of Syncrude and of related urban infrastructure in Fort McMurray, led to growth of employment in most sectors of local economy. Excluding the plant construction workers who resided at the Syncrude site, between 1976 and 1977, the construction industry employed over 35% of the labour force domiciled in the town (Table 7). Most other economic sectors grew also in both absolute and relative importance by 1977, the exception being agriculture, forestry, fishing, trapping, and manufacturing industries (Nichols 1979:64).

By mid-1978, with the construction of Syncrude nearing completion, dramatic changes occurred in the employment distribution. Employment in the construction industry decreased by

Table 7. Labour Force by Industry for Selected Years

Industry	1961	1971	1977	1978	1979
	%	%	%	%	%
Agriculture, forestry, fishing, trapping	7.4	1.3	0.1	0.2	0.1
Mines, quarries, oil wells	2.8	35.6	22.4	39.6	40.2
Manufacturing	5.6	2.6	0.7	0.4	0.5
Construction	6.2	12.6	35.4	18.3	16.6
Transport, communications, utilities	37.0	6.9	4.8	4.1	4.1
Wholesale, retail trade	10.5	10.2	8.9	9.2	9.9
Finance, real estate, insurance	0.6	3.0	5.3	4.9	3.5
Community and personal services	21.0	23.0	16.5	16.9	18.7
Public Administration	9.0	4.8	5.9	6.5	6.2
TOTAL	100%	100%	100%	100%	100%
(N)	(324)	(2305)	(8605)	(10649)	(11548)

Source: Adapted from Harvey (1981:139).

about one third. Operational employment in the mining industry had more than doubled and comprised nearly 40% of the total labour force. Personnel employed in the service sector, while growing rapidly in numerical terms, represented a relatively constant proportion of the total labour force (Nichols 1979:64).

The structure of occupational employment in 1977, reflected the high level of urban construction activities induced in Fort McMurray by development of the Syncrude project (Table 8). The construction trades accounted for more than 40% of the employed labour force in 1977, over four times the Alberta average of less than 10% (Nichols 1979:68). By comparison with 1971, there was also a considerable increase in managerial and administrative occupations, but the proportion of local labour in sales and service sectors decreased by nearly one-half of its 1971 level. Most of the remaining occupational categories did not undergo any drastic change.

Occupational breakdown of the community's labour force had altered considerably towards the end of construction of Syncrude. Between 1977 and 1978, i.e. within one year, employment in the construction trades declined from about 3100 persons to 700 persons. Employment in mining, the physical sciences, material handling, and assembling, repair, and maintainence all expanded. There was also an increase of employment in sales and service sectors, indicating that the proportion of local labour in those sectors was slowly climbing to levels more comensurate with the size of Fort McMurray's population at that time (Nichols 1979:68,69).

8.2.3 Relative Income Levels

During the construction of Syncrude, relative levels of income from employment were considerably higher in Fort McMurray than in Alberta (Table 6). The 1976 employment income differential was 25% higher in Fort McMurray than in the Province, or in Edmonton. At the same time, the proportion of total returns that were non-taxable was 16.8% in Fort McMurray, compared to 27.7% in Alberta, and 24.9% in Edmonton. This differential in the average employment

Table 8. Experienced Labour Force by Occupation for Selected Years

Occupation	1961	1971	1977	1978	1979
	%	%	%	%	%
Managerial and Administrative	10.0	4.0	10.3	11.7	8.0
Professional and Technical	7.0	16.8	17.3	23.0	24.0
Crafts, Production, Processing, Construction	30.3	27.2	42.5	23.2	21.7
Farming, Fishing, Forestry, Mining (1)	3.3	6.0	0.5	7.7	8.4
Clerical	7.0	14.9	13.3	11.2	11.4
Sales and Service (2)	21.5	19.8	10.9	14.9	15.3
Transport, Communications (3)	15.5	4.7	3.7	4.0	3.6
Other Occupations	5.4	6.6	1.5	4.3	7.6
TOTAL	100%	100%	100%	100%	100%
(N)	(330)	(2150)	(9013)	(10063)	(10597)

Notes: (1) The low percentage for mining in 1977, probably due to error.

(2) For 1961 only, includes recreation occupations.

(3) For 1961 only, includes communications occupations.

Source: Adapted from Harvey (1981:140).

income was particularly marked with respect to non-family households (Nichols 1979:119,122,126).

The large scale demand for manpower began in Fort McMurray in 1975, and caused a major upsurge in employment income levels not only in the construction industry but also in other sectors of local economy. Despite union rates which were uniform in the northern part of Alberta, the Syncrude construction personnel were assured of 10 hours additional work per week at double normal rates. In effect, their income levels were 50% higher than those of construction workers elsewhere in the Province. A similar situation prevailed -- though with varying conditions -- among workers involved in the town construction. Also among the provincial and municipal employees, northern cost-of-living allowances and isolation bonuses became widespread in Fort McMurray. By 1977, the very high incomes associated with the construction labour force started to fall however, while northern allowances and bonuses had been rolled into income scales, equivalent to about 7% to 15% premiums over base salaries. Nonetheless, if the value of housing subsidies were included, equivalent incomes paid by major employers in Fort McMurray in 1977-78, were probably 15% to 20% higher than those paid by counterpart employers elsewhere in the Province (Nichols 1979:127-9).

The higher employment incomes were counterbalanced by the local prices of various commodities, which were 8% to 13% higher than in Edmonton. With the trend toward a somewhat higher overall price index prevailing in Fort McMurray, the greatest price differential was to be found in non-food items, such as household shelter, household operation, and transportation prices which were 18% to 21% higher than those in Edmonton. The overall food price index was about 10% higher than in Edmonton, but the prices of restaurant meals were approximately 40% higher between 1977 and 1978 (Nichols 1979:129-132). Despite the generally higher prices in Fort McMurray during the construction of Syncrude, the residents working for the major employers were able to improve their financial situation. The inflated prices resulted however, in

hardships for people on fixed incomes; many old age pensioners had left the community during that time (Information obtained from "Golden Age Club" in Fort McMurray, November 1978).

8.2.4 Syncrude Construction Camp

At the peak of construction period, in mid-1977, labour force employed at the Syncrude project reached 8000 workers, of whom 70% to 80% resided in camp at the project site. Employment of the Fort McMurray residents at the project reached 1500 workers in mid-1976, and 2700 workers in mid-1977. A significant proportion of those workers consisted of the Syncrude operational personnel who was encouraged to reside in town, rather than at the construction camp. In 1976, the majority of the construction labour force was employed by Canadian Bechtel Ltd., the main contractor for the Syncrude Canada Ltd.; by 1977, as construction was nearing completion and operating employment increased, Syncrude became the major employer (Nichols 1979:70-72).

The Syncrude camp was in operation from 1973 to 1978. At maximum capacity, the camp housed over 6600 people. Unlike the Suncor camp, Syncrude construction camp had residence facilities for women, a measure necessitated by the increasing proportion of female labour force involved in the project. Since by 1977, the population of Fort McMurray grew to over 20 000, the impact of the Syncrude camp on the town was significant, but not as consequential as that of the Suncor camp. The population of the latter had equalled in 1966 the population of the town (Nichols 1979:80).

To lessen any negative impacts of camp residents on Fort McMurray, the Syncrude camp was designed as a largely self-contained operation. The room and board in camp were provided free; also provided were recreational and sports facilities. A tavern was opened on the camp-site to help alleviate possible overcrowding of local bars in Fort McMurray. Regardless of these efforts, existence of the camp had posed several problems for the town. Local social services, health facilities, and banks were largely unprepared for the use by numerous camp residents.

Moreover, every weekend featured an exodus of the camp workers to Edmonton on Friday afternoon, and their return to Fort McMurray on Sunday afternoon. This exodus had caused the overcrowding of traffic on Highway 63 and of passengers at the airport (Parkinson et al 1980:62-8).

Existence of the camp did stimulate however, the local economy. Since supplies for the camp were purchased mostly outside the local area, the transportation sector of the local economy benefited most. The construction workers were well paid, and local retail services and hotel industry were the recipients of much personal spending of the camp occupants (Parkinson et al 1980:62). Consequently, although in some respects the Syncrude camp was an unwelcomed imposition upon the residents of Fort McMurray, not all the impacts associated with its existence were negative.

8.2.5 Native Employment

In most resource communities, Native employment was found to be considerably higher during the construction phases than during the operational phases. A review of the literature identified seven broad barriers to Native employment: economic, educational, political, socio-cultural, health, recruitment techniques, and on-the-job impediments (Deines et al 1979). Aware of those barriers, Suncor and Syncrude had instituted training-employment programs for Native people. These programs assisted Native families with relocation to Fort McMurray, and featured housing assistance, on-the-job training, and conselling services. Syncrude established also the education upgrading programs conducted in cooperation with Keyano College in Fort McMurray (Larson 1979: 120-1; Nichols 1979:93).

Despite these efforts, the proportion of employed Native workers was higher during the construction of oil sands plants than during the production stages. For instance, the Suncor construction work force included about 26% of Native workers; its operational personnel consisted only of 7% Native workers in 1974, and 10%

in 1975, remaining constant during the following years. The Syncrude construction work force included about 10% of Native workers; during the first year of Syncrude's production, only about 5% of the total operational employees were Native. Most of the Native personnel was involved in heavy equipment operations, with others being found in such occupations as millwrights and welders. Both Suncor and Syncrude found that the turnover rate among Native employees did not differ appreciably from that among non-native employees (Nichols 1979:92-3; verbal communication from Syncrude official, November 1978). Nevertheless, the barriers to effective Native employment seemed to have persisted in the oil sands industry.

8.3 HOUSING

Construction of the Syncrude project induced a very rapid urban expansion of Fort McMurray, which was marked by high levels of housing construction. While the housing stock was increasing very quickly, so did the housing costs. Meanwhile, the trends in housing mix and house ownership patterns established in Fort McMurray during the last ten years, had continued and also intensified.

8.3.1 Housing Stock

By 1976, with the construction of Syncrude underway, the size of Fort McMurray's housing stock had increased further to 4195 units or by 195% compared with the 1971 level (Gartrell et al 1980:77). One year after the construction of Syncrude had ended, the total housing stock constituted nearly 8600 units (Figure 10). Between 1976 and 1977, residential construction activities featured a decline, while volume of commercial and institutional construction was rising in both absolute and relative terms (Nichols 1979:97). The total volume of construction in Fort McMurray jumped to $ 41.3 million in 1974, nearly eight times the value of contruction for the previous year. The volume of construction reached a peak in 1976, when the total value of construction was $ 87.8 million,

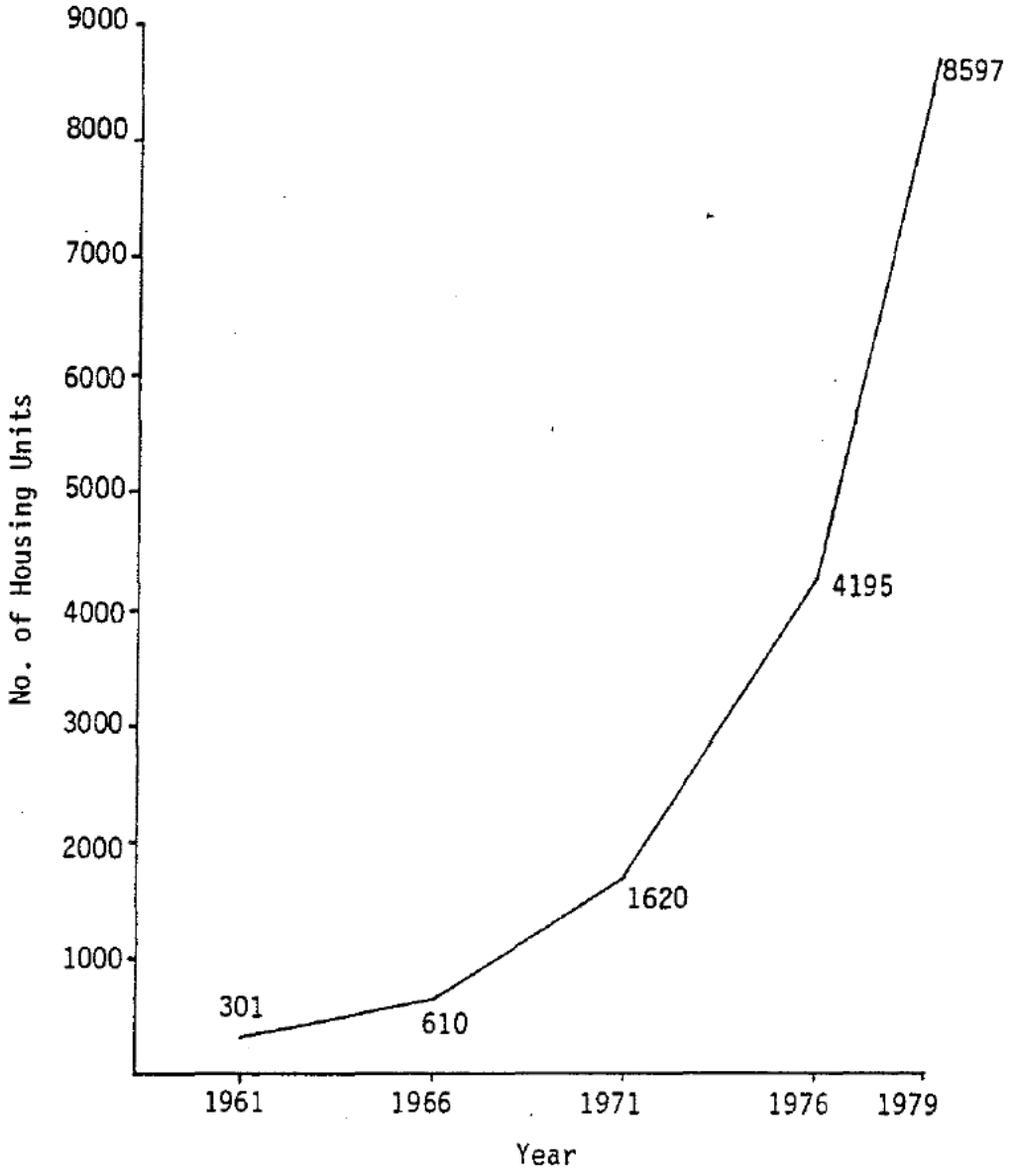

Figure 10. Size of housing stocks, 1961 to 1979. Adapted from Nichols and Associates (1979:101) for census results for 1961 to 1976, and New Town of Fort McMurray (1979:7) by Gartrell (et al 1980:78).

before falling to $ 49.8 million in 1977, and then rising quickly again (Harvey 1981:153).

The first sign of a more rapid escalation of the housing costs appeared in 1974, when housing lots, the most important component of housing construction, had increased the prices of housing by about 15%. The full brunt of both the oil sands plant construction and municipal infrastructure construction impacted in 1975. The simultaneous construction had immediately increased the cost of construction of local housing, which jumped by about 40% in one year. After the initial surge, construction costs increased only moderately between 1975 and 1978. But the price of new residential lots continued to increase rapidly until 1978, and caused the housing prices to peak in that year (Nichols 1979: 114-6). Between 1974 and 1978, the price of single family lots in Fort McMurray had risen from about $ 9000 to $ 30 000 (Nichols 1979: 33).

Rental rates were also increasing. After appearing to stabilize in 1974, the rates climbed rapidly between 1975 and 1977. Average rental rates increased again in Fort McMurray in 1978, but at a decelerated pace (Nichols 1980:109-12).

Between 1976 and 1978, the overall vacancy rate was about 8% to 10.5%. The highest vacancy rates were found in higher density multiple family dwellings and mobile units; the lowest rates existed in single detached dwellings. The vacancy rates would not necessarily reflect housing surpluses; rather, the vacant units which belonged usually to either Suncor or Syncrude, might have been committed to employees whose arrival was expected. These vacancies might have also indicated the rapid rate of population turnover, with households moving quickly into and out of the community (Nichols 1980:109).

8.3.2 Housing Characteristics

By 1976, the share of total housing accounted for by single detached dwellings had fallen again to 37.3%, mobile units peaked at 30.9%, while apartments continued to take a larger share

(20.6%) of the housing stock. The proportion of housing accounted for by semi-detached dwellings and townhouses increased to 11.2% (Figure 8). By 1978, towards the end of construction of Syncrude, the proportion of single detached dwellings decreased further to 26.6%, while multiple family dwellings and apartment units increased to 23.4% and 29.1% respectively. The share of mobile homes had declined to 20.9% (Nichols 1979:103).

The trend in declining home ownership and the corresponding increase in rental accommodations continued and by 1976, approximately equal proportions of Fort McMurray's dwellings were owned and rented (Harvey 1981:159). Although the overall ownership had declined, ownership of single detached units increased between 1971 and 1976, from 69% to 74.6%. A more dramatic increase occurred in the ownership of single attached units from 4.3% in 1971 to 22% in 1976. The ownership of apartments had also increased slightly between these two census years. Only the proportion of owned mobile homes had decreased from 62.1% in 1971 to 59.7% in 1976 (Harvey 1981:150). As pointed out by Nichols (1979:108), if lease-purchase tenure were not included as ownership, the relative home ownership would have declined significantly in Fort McMurray during the construction of Syncrude. According to Harvey (1981:152), the overall decrease in the ownership of dwellings at that time, was related to the relative increase in the proportion of the types of dwellings which would tend to be rented rather than owned, such as apartments and semi-detached units.

While no data were available on the building or room density at the time of construction of the Syncrude plant, the trends established between 1961 and 1971 might be expected to have continued. These would feature more rooms per dwelling and less than one person per room. Similarly, utility facilities which in 1971 were more advanced in Fort McMurray than in Alberta, might have further improved.

8.4 SERVICES AND FACILITIES

The delivery of community services in Fort McMurray encountered most difficulties during the construction of Syncrude. The influx of new residents was extremely rapid and was accompanied by the influx of thousands of construction workers. Although mainly the workers employed in town construction lived in the community, all the workers including those living at camp on the Syncrude site, utilized some of the existing services.

In addition, the community had a large "shadow" population composed of transients and squatters, of whom no account was made in the official statistics (Nichols 1980:54; Harvey 1981:244). As a result, both private and public services in Fort McMurray were severely over-extended. From an administrative point of view, "during the 1974 to 1978 construction boom, 'seat-of-the-pants' management became a requirement not an alternative" (Jones 1979:1).

8.4.1 Commercial Sector

Between 1974 and 1976, during the main construction build-up period, the standard of commercial services available to the Fort McMurray residents had deteriorated. While the volume of sales doubled each year, the provision of commercial facilities was unable to keep pace with the demand. The potential local spending was often diverted to such urban centres as Edmonton. After 1976, the continued and accelerated development of new commercial services and facilities coincided with the departure of construction labour force and of the "shadow" population and with lower rate of growth of consumer spending. Supply began then to catch up with the demand (Nichols 1980:41-3).

The overall retail sales in the community had risen dramatically to $ 74.5 million by 1976, of which 38.3% represented automobile sales; the sales of hardware and home furnishings, and apparel and accessories decreased to mere 7.9%. The number of retail business outlets had increased by 1976 to 91, but the number of locations had increased to only 36. That the delivery

of commercial services was relatively inadequate had been confirmed by the slow growth in business employment (from 169 in 1966 to a mere 199 in 1976). Meanwhile, the net sales and receipts had more than doubled, though some of this increase could be attributed to inflation (Harvey 1981:190-3).

Little change occurred in the manufacturing sector. The number of manufacturing establishments grew to 5 in 1976. But in 1977, the Index of Manufacturers in Alberta listed only 4 establishments in Fort McMurray: a publishing company, a newspaper, a cement mixing enterprise, and a dairy processor. Value added had increased to $ 1.6 million in 1976 (from $ 354 000 in 1972); this was low relative to the size of Fort McMurray's population (Harvey 1981:173-5,194).

8.4.2 Health and Welfare

The delivery of hospital and health care services was constrained during the construction of Syncrude, by the inadequacy of facilities and by the shortage and turnover of qualified professional personnel. In 1976, however, an emergency department using temporary facilities was opened, and in 1977, the nurses' residence was converted to hospital use, raising the total capacity from 54 to 73 beds. Also in 1977, construction of the new hospital started, with a total capacity of 300 beds; this was to be opened in 1980. Despite these changes, the standard of hospital services was steadily declining, and by 1979, the ratio of hospital beds per 1000 population was less than three, i.e. below the broadly applied hospital guideline calling for five beds per 1000 population (Nichols 1980:60-1). In the 1977 to 1978 period, the utilization rate of hospital facilities was 98.4%, which was about 30% higher than that of a comparable hospital in the Province. The average number of days care per patient was also significantly lower in Fort McMurray, reflecting in part the pressures on the supply of beds. The hospital emergency facilities experienced an abnormally high demand during the construction period (Nichols 1980:61-2).

Part of the reason for such high utilization of hospital services involved the fact that the population had grown more rapidly than anticipated. Consequently, the demand was increasing faster than expected by the planners who relied on the accepted population projections. Also, contrary to some expectations, the large number of young households had generated higher than usual hospital utilization rate, partly because of their greater exposure to accident and stress conditions. A significant proportion of hospital use was related to such stress-induced cases as drug overdoses, alcoholism, psychosomatic conditions, child abuse, and depression (Nichols 1980:62).

Moreover, the hospital utilization rate was impacted by the unavailability or inadequacy of social service facilities where personal stress, mental health, and alcohol and drug abuse cases could be treated. The delivery of these services was particularly inadequate during the early phases of construction period. For instance, the Preventive Social Services program was for some time directed toward senior citizen assistance, despite the predominantly young population in the town. Although the incidence of mental health problems was more than double the provincial rate, it was not until mid-1976 that a Mental Health unit was opened in Fort McMurray, suffering however, from insufficient staffing for much of the period since then. The alcohol treatment and counselling services run by the Alberta Alcohol and Drug Abuse Commission (AADAC), had only two counsellors throughout the period, and from 1974 to 1977, were unsuitably located on the second floor of a building on the main street. A medically supervised detoxification centre was not opened until late 1979. This lack of specialized facilities resulted in a spill-over of social problems on to hospital and police services and facilities, influencing adversely their effectiveness (Nichols 1980:53-7).

The overriding problem with the delivery of social services in Fort McMurray, was the failure to recognize quickly enough the special and extraordinary demands for services during the construction phase. It was not until 1978 that the provision of

facilities and staff approached the levels required to effectively meet the demand. One of the more important factors in this change was the establishment in 1977 of the Fort McMurray Regional Task Force for Health and Social Services, which culminated in the appointment of the Task Force Coordinator in 1979. Meanwhile the Department of Social Services and Community Health redirected its activities toward more integrated and decentralized planning, allowing the agencies greater flexibility in dealing with specific local conditions. But by that time, the Syncrude construction phase wound down and the demand for social services had decreased (Nichols 1980:53-6).

8.4.3 Education

The most significant problems in the delivery of educational services involved the elementary and secondary schools. These problems included a lag in the development of school facilities, financial difficulties faced by the school boards, and local operating and organizational pressures. The schools were overcrowded. In 1975, both the Separate and Public School Districts were operating at very high utilization rates of 90% to 95%, and portable facilities comprised about one-quarter of the total classroom space. In the fall of that year the Separate School Board was operating some of its facilities in two shifts to accommodate the demand (Nichols 1980:67).

The situation improved in 1976, when two new elementary schools and the joint senior high school were opened in the community. By 1977 - 1978 however, the total enrolment grew again to 5462, i.e. almost 25% from the previous year (Harvey 1981:177), and the classroom loads were between 21 and 25 pupils per room. At the time, Fort McMurray had one kindergarten, 10 elementary schools operated by the two school boards, three junior high schools and one composite high school. With the exception of senior high school where no excess capacity existed, only 550 additional pupils might have been accommodated by the remaining educational facilities. Keyano College, which had been planned

as a regional education centre, had capacity larger than the current needs of Fort McMurray (Young 1978:9-10).

A number of factors contributed to this lag in the provision of school facilities. These factors included the unanticipated growth in enrolment due to the rapid population increase; the changing household characteristics, such as marital status, age, sex, and number of school-age children; and the lack of early involvement of the school boards in the community planning process. In addition, the shortage of serviced land, geographic fragmentation of the community, and changes in the density and urban development patterns made it difficult to locate schools of the right size in the right neighbourhoods (Nichols 1980:68).

8.4.4 Culture and Recreation

Recreational facilities in Fort McMurray were expanded during this period, but the expansion did not keep pace with the explosive population increase. In 1976, a Recreation Master Plan for the community was completed identifying a number of recreational and cultural needs of the residents. The 1976 inventory of leisure facilities revealed a slight increase in the number of recreational services that were available in the town. Only one new facility, Gregoir Recreation Complex was established, but the capacity of a number of existing facilities was expanded. For example, an additional arena was completed, new tennis courts were built, and new playing fields were constructed.

Emphasis in the development of leisure services remained on recreational or athletic facilities and programs; and cultural needs were only beginning to be identified. Though groups in music, theatre, arts and crafts, and dance began to emerge, there was a serious lack of unstructured and informal drop-in activities. The number of developed playgrounds and parks was also inadequate, and improvement or expansion was needed (MTB Consultants 1980:34-52). After 1976, the leisure delivery system was rapidly expanded and the programs available to the residents of Fort McMurray were diversified. By 1978, leisure facilities could be easily found in

the town outside local restaurants and bars which dominated the recreation scenario prior to 1976.

8.4.5 Protection and Criminal Justice

The demand for police and detention services escalated rapidly in the community during the construction phase, and by 1976, the local police personnel was severely over-extended. The inadequacies in staffing were subsequently corrected. In 1977, the Fort McMurray police force personnel totalled 40, including 23 constables and 17 civilians, of whom 2 constables and 14 civilians were women. There were also 8 police cruisers (Harvey 1981: 195). But the development of detention facilities continued to lag behind, and the demand for space was often more than double the available capacity (Nichols 1980:48-51).

Though the number of crime offences grew from nearly 2400 in 1974 to nearly 4500 in 1978 because of the growing population, the crime rate fluctuated little in Fort McMurray since 1968. With the Alberta crime rate rising, the Fort McMurray rate remained about 70% higher than that in the Province (Harvey 1981: 206). The rate of criminal code offences had increased to represent nearly 60% of all crimes committed, and was nearly 50% higher than the Alberta rate. Other criminal offences, including crimes of violence and property crimes, had decreased in Fort McMurray; the exception being the federal statute offences. The latter increased very quickly along with the Alberta rate, probably due to the increased use of illegal drugs. In 1978, approximately one-half of the federal statute offences in Alberta was drug related. The crime rate for provincial statute offences, including Liquor Act violations, had decreased during the construction of Syncrude (Harvey 1981:180-3,206-12). This decrease could be attributed partly to the fact that various recreational facilities, including a tavern, were introduced at the Syncrude construction camp. The construction workers no longer had to travel to Fort McMurray to buy an alcoholic beverage.

The demand for judicial and legal services accelerated sharply during the construction period. In addition to the high rate of adult crime, acts of juvenile delinquency were about four times more frequent in Fort McMurray than in the Province. The statistics might have been even higher were not the police and the courts reluctant to charge offenders in the absence of adequate treatment or detention facilities.

By 1976, the pressures on the court services had become severe. The large number of out-of-province defendants meant that their historical records had to be obtained from other jurisdictions. The lack of detention facilities and of a local alcohol treatment and detoxification centre placed constraints on the sentencing of alcohol related offences (hence, the lower crime rate for provincial statute offences). The lack of detention facilities precluded the arrest of women and juvenile offenders, who could not be segregated from the other prisoners. It was also questionable whether Native offenders, who comprised a disproportionate share of the legal case load, had always sufficient access to legal counsel (Nichols 1980: 51-3). The judicial system in Fort McMurray was over-extended. Yet until 1978, the community had only one judge.

8.4.6 Physical Infrastructure

This period featured further improvements in the regional and municipal infrastructure. In 1977, a new pipeline was completed to meet the natural gas requirements of the Syncrude plant. In addition to the Suncor pipeline, another pipeline was built to transport the synthetic crude oil from Syncrude to refineries in the Edmonton area. The improvement of highways and airport continued. In 1974, 90,000 tons were moved by truck from the Edmonton region to the Fort McMurray region, and most of the freight consisted of consumer goods. In 1975, almost 1.1 million tons were moved by truck, and 88% of the volume consisted of petroleum products and construction materials. In that year, approximately 70% of inter-regional passenger traffic was by road, with air traffic reaching 100,000 passengers. The

importance of railway continued to decline, though in 1975, the Fort McMurray to Edmonton line carried almost 200 000 tons; the rail passenger traffic was relatively insignificant (Nichols 1979: 23-9).

Between 1974 and 1977, the municipal land area in Fort McMurray remained constant at 16 square miles, but there was an increase of public thoroughfares from 42 to 79 miles. This meant that the miles of public thoroughfares per square mile of municipal land area had nearly doubled (Harvey 1981:213). However, no public transit existed in Fort McMurray.

Significant improvements occurred in the communications sector. By 1973, Fort McMurray had a local radio station and a CBC repeater station which made Edmonton programs accessible. By 1978, six television channels were available in the town, including four through cable connections (Nichols 1979:34).

8.5 COMMUNITY RESPONSES

Construction of the Syncrude project induced many changes in Fort McMurray, as a result of which the community was becoming increasingly urban, shedding its charactertistics of a small northern town. Responses of local residents to this rapid urbanization of Fort McMurray varied, depending usually on such factors as the length of residence in the community, their social background or place of origin. Some of these responses were noted by Van Dyke and Loberg (1978), who had lived in Fort McMurray in 1976, as participant observers. Much of the material in this section, was extracted from their report.

8.5.1 Community Stability

Many of the old-time residents of Fort McMurray viewed the construction of Syncrude and the development of oil sands in general, as a major imposition upon local population. Some of them, having witnessed the destruction of familiar landmarks which were symbols of their home environment, had experienced a feeling of disorientation. The development was particularly traumatic to those Native people who had been subjected to the physical

displacement as a result of new urban development.

Perceptions of Fort McMurray among the new arrivals differed, depending on where they came from. Moving to Fort McMurray had been a shocking experience for many southern urbanites, who felt the sense of "isolation" very acutely. But the people coming from isolated areas of the far northern parts of Canada, perceived the town to be very urban. Though often reluctant and gradual, an adjustment to the way of life in this resource town was evident among the respondents interviewed by Van Dyke and Loberg (1978:14-15). Only a minority of respondents appeared to retain a deep sense of discontent with living in the community, if only for a period of a few years.

The primary motive for coming to Fort McMurray tended to be personal financial gain. Few people chose the community for its own sake. The second most common reason for arriving into town, with the exception of those who came to live in construction camp, was a transfer by a company for which a person worked. Finally, a large proportion of respondents came to Fort McMurray to escape personal problems, and in particular, the difficulties with close relatives. While this point was offered infrequently as the primary reason for arriving in Fort McMurray, it was listed as an important motivation by the informants (Van Dyke and Loberg 1978:118).

In 1976, the majority of respondents felt that they were located temporarily in the community. They were just passing through, even if they stayed in Fort McMurray for two or three years or more. The prevailing attitude was one of relative transcience and the nonsensibility of investment of one's time and effort in the community affairs. The collective mentality of the community appeared to reinforce or perhaps even place a premium upon instability (Van Dyke and Loberg 1978:117).

Moreover, it would appear that some people attracted to Fort McMurray during the construction of Syncrude, were moving <u>from</u> other situations rather than <u>to</u> the community. Consequently, a significant proportion of any personal problems experienced

during this period, might have been imported to the town (Van Dyke and Loberg 1978:112). Although several respondents pointed out that "life in Fort McMurray was very much what one made of it oneself", the rigours of living in the community during its rapid urban expansion could also intensify personal problems and create difficulties quite independently.

Other reports about life in Fort McMurray during the construction of Syncrude emphasized a considerable marital discord and family breakdown in the community (Graham Brawn & Associates 1975; Johnson 1979; Larson 1979). Young mothers were reported to raise children alone, while husbands worked 12 hour shifts. Over-worked husbands were considered unsympathetic to the plight of their wives, while supporting relatives were far away. Loneliness, depression, alcohol related problems, marital infidelity, debt, and other family-focussed social problems were portrayed frequently. While such reports had originated often from the professionals involved in social services, who by the very nature of their jobs were exposed to many social problems, they were nonetheless indicative of the lack of community stability in Fort McMurray.

The rapid urban expansion and economic growth appeared to be psychologically disorienting for almost everyone in Fort McMurray. Rapid economic growth created work overload which provided an opportunity for workers to make large amounts of money, but tended to leave little time for other activities. The old-timers who were unable to participate in the boom, had difficulties in coping with the local inflation created by the explosive development. Some of the older long-time residents had departed from Fort McMurray during the construction period, relocating to other smaller communities in Alberta (Interview with the "Golden Age Club" in Fort McMurray, November 1978).

8.5.2 Housing

Housing had become a major concern to the residents of Fort McMurray during construction of the Syncrude project, mainly due to the high cost and shortage of accommodation (Van Dyke and Loberg 1978:31-8). On arriving in the community, many families were placed in a hotel or motel, or else were forced to live with friends, if not with complete strangers, until some form of suitable housing was found. People who had not experienced life in a mobile home or trailer park found the conditions most upsetting. The shortage of accommodation induced many families to leave Fort McMurray rather than wait for the promised home.

The shortage and the high cost of housing were alleviated by housing subsidies and special cost-of-living allowances which became an important aspect of life in the community. Differences in benefit packages offered by various employers were substantial and contributed to an inequitable position among different occupational groups, with housing subsidies becoming a vital element in recruitment. The high employment turnover and recruitment problems which were experienced by private service-sector employers, were attributed partly to the housing benefits offered by the oil sands industry and the provincial government. Some assisted housing programs might have had other undesirable effects. For example, Syncrude permitted its employees to purchase a home without a down-payment, while allowing a high debt service ratio with a limited regard for personal debt repayments on other acquisitions. As a result, some families were left with no discretionary income, and some employees, being unable to own an equal housing unit elsewhere on an unassisted basis, were "trapped" by their employer (Nichols 1980:39-9).

A 1978 survey of households indicated that local residents tended to have longer tenure in Fort McMurray than in their previous residence, due to the housing program packages involving lease-purchase ownership (Department of Housing and Public Works 1978, cited by Nichols 1979:108). Consequently, greater opportunity

to own one's home in Fort McMurray would appear to have played an important role in attracting new residents to the town.

8.5.3 Services and Facilities

The difficulties encountered in Fort McMurray in meeting the demand for community services and facilities during construction of the Syncrude plant, were undoubtedly related to the unanticipated rapid growth of the population and changes in its characteristics, such as age, sex, and marital status. Nonetheless, of critical importance were also "boom town" conditions which prevailed at the time, and which were accompanied by high levels of social and personal stress. The stress could be attributed to such factors as social and geographic isolation experienced by new residents, difficulties in adjusting to new living conditions, high cost of living, prevalence of shift work, and inadequacies in community services and facilities in Fort McMurray (Nichols 1980:55). In response to the stress, there occurred various social problems in the community.

One of the major social problems was alcohol abuse. The consumption rate was higher in Fort McMurray than the Alberta average. In 1977, each resident of Fort McMurray had spent 60% more on liquor than each resident of the Province (Harvey 1981:204). A strong connection existed between alcohol abuse and accidents and crime. There was also drug abuse. Some women, especially those isolated in subdivisions and trailer courts, misused prescription drugs such as tranquilizers. Juvenile delinquency was a growing problem, and alcohol was used by youths as their primary recreational and socializing activity (Johnson 1979).

Frequently, the alcohol and drug abuse constituted a response to the inadequacies in existing community amenities and facilities, such as housing, recreational and cultural services, and public transit. This abuse created in turn, even higher demand for health care services, police protection, and criminal justice services. Consequently, shortfalls in service delivery in one area were inducing additional demands in other areas (Nichols 1980:55).

Between 1975 and 1976, the residents of Fort McMurray expressed little satisfaction with community services and facilities

(Van Dyke and Loberg 1978). The retail and trade services left a lot to be desired, and overcrowding and line-ups were a common source of aggravation. The unsatisfactory selection of goods and business services available in Fort McMurray prompted many residents to make major purchases in Edmonton.

Medical services were also considered to be inadequate by most residents. While usual differences of opinion prevailed concerning the positive or negative appraisal of medical personnel, all those interviewed by Van Dyke and Loberg, agreed that the doctors were grossly overworked and more assistance was needed. Even more pressing was the need for more dental personnel. Several respondents expressed also the need for day care facilities to supplement social services in the community (Van Dyke and Loberg 1978:79-84).

There were widespread complaints about overcrowding in schools (Van Dyke and Loberg 1978:76-8; Larson 1979:117). People complained about the lack of adequate cultural and recreational facilities, and the predominace of 'booze' oriented socializing. Parents were afraid of detrimental influence that those conditions might have on school-age children and youths (Van Dyke and Loberg 1978:88-97).

Most residents appeared to be positively impressed with the police service, though they thought the constables to be overworked. The success rate in solving crimes was believed to be very high (Van Dyke and Loberg 1978:64). Nevertheless, an attempt to establish community-based correctional facility had failed at the time, partly due to the opposition from the community, and partly, because the need for such a facility was not recognized by all the agencies involved (Nichols 1980:50).

Despite the expanded physical infrastructure, there was no public transit in Fort McMurray. In the absence of public transport, the town's extended geographic layout and concentration of commercial and social services in the Lower Townsite, affected negatively the use of community services and facilities. It was difficult to rely on private transportation because not every family had two cars, and because of the inadequate parking space

and frequent traffic congestions (Nichols 1980:45-6).

In summary, the experience of Fort McMurray during the construction of Syncrude had demonstrated the dangers associated with relying too heavily on population statistics and on standardized rigid criteria for the delivery of community services and facilities. The situation in this resource town required a more integrated planning and more flexible responses (Nichols 1980:76-9).

9. SUNCOR AND SYNCRUDE OPERATIONAL: 1979 - 1980

On 1 September 1978, the Syncrude project entered officially into production stage. After the turmoil of construction activities, Fort McMurray started to settle down. The rate of growth of its population fell dramatically, while most of the prevailing demographic characteristics continued to shape the town into a microcosm of southern urban Canada. A relative lull in the local economy followed. The urban expansion and growth, including housing, began also to exhibit some of the features of greater stability. Services and facilities were gradually able to catch-up with the new conditions, and their supply was more comensurate with the exisiting demand. With both Suncor and Syncrude operational, Fort McMurray appeared to have become more stable as a community than it was during the construction of Syncrude.

In June 1979, AOSERP Human System conducted a survey of the adjustment of residents in Fort McMurray to local conditions of life (Gartrell et al 1980). Results of this survey together with the 1979 Fort McMurray Municipal Census data had been relied upon in this chapter, to illustrate changes which took place in the community during the first year of operations of the Syncrude project.

9.1 POPULATION

Upon the commencement of production by Syncrude, a very significant decline occurred in the rate of growth of local population. Between 1976 and 1978, the average annual rate of growth was 23.4%; by 1979, the rate had dropped to only 5%, and the population had grown from 24 580 in 1978 to 25 802 in 1979. This contrast between the high rate of growth of the population at the end of construction stage, and the low rate of growth upon the start of production by Syncrude, reflected the policy of "phasing-in" the plant operating staff.

Many, if not most, of the permanent employees of Syncrude were hired well in advance, to be properly trained before the plant started production. Most of them were brought to Fort McMurray in 1977 and before June 1978. The early hiring of the plant operating personnel allowed to avoid a very sudden and massive influx of new residents into the community, at the beginning of production by Syncrude.

The "phasing-in" of the permanent staff was accompanied by a relatively gradual departure of the labour force employed in construction of the Syncrude project. As specific components of the industrial complex were being completed, so the trades working on those components were leaving the camp and the town. By 1978, most of the "shadow" population departed also. These events had eased the pressures which the rapid demographic growth imposed on the community.

9.1.1 Population Characteristics

Most of the demographic trends established during the previous stages of resource development, continued in Fort McMurray. By 1979, even more young adults had arrived, and the proportion of people below 45 years of age grew to 93%. Those between 20 and 44 years old constituted nearly 50% of the residents, but the proportion of children younger than 15 declined to 33.9% of the total population from 36.1% in 1976. Only 7% of the residents was older than 44, and those who were older than 64 accounted for only 0.4% of the residents (Harvey 1981:56). This age distribution resulted in a high young dependency ratio and a very low old dependency ratio. The overall dependency ratio was similar to that in Canada, but the age differential in Fort McMurray implied that more services and institutional facilities were required for the young than for the old people (Gartrell et al 1980:44).

In its recruitment policies, Syncrude relied on the assumption that married employees would be more stable than single workers, and that by hiring married staff the company would reduce its labour turnover. Despite the policy favouring recruitment of

married workers, the proportion of men had increased in Fort McMurray. Between 1976 and 1978, the ratio of males per 100 females grew from 109.3 to 111.6. The ratio grew most in the age group between 45 and 49, where it was 165.4 in 1978, compared to 137.5 in 1976; and in the age group between 50 and 54, where it was 140 in 1978, compared to 119.4 in 1976 (Harvey 1981:57). One factor which might have contributed to the high ratio of males in these groups could be the aging of generations among whom the ratio was high during the previous periods of development. By 1979, the average ratio in Fort McMurray was 112 males per 100 females (Gartrell et al 1980:71), which was not unusual for developing northern communities.

Compared to other northern resource towns, and even to Canada as a whole, Fort McMurray continued to have a high proportion of married residents. Of the population 15 years of age and older, the proportion of married individuals was steadily increasing from 63.3% in 1961 to 69.7% in 1966, and to 75.3% in 1971. In 1976, the proportion of married adults fell to 74.1%, despite an increase in the proportion of married residents among the total population. In 1979, of the representative sample of adults in Fort McMurray, as many as 77% was married or living common-law (Gartrell et al 1980:46).

The demographic growth of Fort McMurray had increased the proportion of residents with European ancestry, while reducing to quite negligible proportions the Native Indian and Metis population. The largest ethnic group was of British ancestry, with English, Scottish, and Irish forming 37% of the 1979 sample, which was lower than the 47.9% in 1971. This apparent decline might have been misleading however, because the next largest group (18%) consisted of people who identified themselves as "Canadian", a response which was not allowed by the 1971 Statistics Canada Population Census. The residents of French ancestry decreased to 9% in the 1979 sample, compared to 13.1% in 1971, while 32% of the sample was of other, mainly European ethnic origins. Native Indians and Metis declined from 6.5% in 1971, and formed only 4% of the 1979

sample (Gartrell et al 1980:50; Harvey 1981:64-5). Despite the predominance of Anglo-Saxon groups, by and large, the community was rather diversified ethnically.

In addition, Fort McMurray continued to exhibit a relatively high heterogeneity of religious affiliations, which was similar to that in other northern resource towns. Although their proportion had decreased from 38.7% in 1971 to 30.7% in 1979, Roman Catholics were still the largest group. The residents affiliated with the United Church represented nearly 21%, the proportion of Anglicans was 12.3% and the remaining Protestant denominations accounted for 13% of the population. The "other" category and those declaring no religion constituted 23% of the inhabitants. These data reinforced the impression of greater religious pluralism in the town (Gartrell et al 1980:49-50).

The level of education attained by residents of the community continued to increase. In 1979, of the population 15 years old and over attending and not attending school, only 5.4% had less than Grade 9 education (compared to 12.7% in 1976), 77.2% had between Grade 9 and post-secondary non-university education (compared to 71.4% in 1976), and 17.2% had university education (compared to 15.8% in 1976). Between 1976 and 1979, the proportion of people with education between Grade 11 and 13 increased from 26.7% to 34.9%, while of those with post-secondary non-university education grew from 24.9% to 25.7% (Harvey 1981:67). Operations of the Syncrude project required even higher levels of skills and education than those needed during the construction stage.

The oil sands industry was attracting increasing numbers of highly skilled and/or trainable people not only from Alberta, but also from other Provinces. Although about 41% of the 1979 sample lived in Alberta prior to moving to Fort McMurray (compared to 64% in 1976), both these proportions might have been artificially elevated because Syncrude had used Edmonton as a "staging area" for hiring its employees. About 57% of the 1979 respondents came directly from other provinces (compared to 29.4% in 1976), with 22% arriving from Western Provinces, about 15% from Ontario, 4% from Quebec, about 9% from the Maritime region, and 7% from other regions

of Canada. Those who moved to Fort McMurray directly from another country represented roughly 2% of the 1979 sample; in 1976, they represented 6.6% of the population 15 years old and over (Gartrell et al 1980:51; Harvey 1981:69).

Evidently, in some respects, Fort McMurray might have been acting as a "brain drain" on Alberta and on the other Provinces. Recruitment of high quality personnel for the operational stage of Syncrude did coincide however, with the onset of unemployment in Canada as a whole. Therefore, the arrival in Fort McMurray of the skilled workers might have eased unemployment pressures in the rest of the country.

As would be expected given the high level of industrial skills among the local residents, urban population predominated in the community. A majority of the 1979 sample grew up in cities (44%) and in small towns (42%). Only 14% grew up in rural areas. Before moving to Fort McMurray, 52% of the respondents lived in a city, and 41% lived in a town. Those who came from rural areas comprised merely 7% of the sample (Gartrell et al 1980:51).

Rates of geographic mobility were higher for all types of the adult population in Fort McMurray than they were in the rest of Canada. Of those who had moved to Fort McMurray and were interviewed in 1979, higher mobility was observed among residents who grew up in urban settings, those from outside Alberta, and those who had lived before in other resource communities. In the past, the single respondents were more mobile than the married. The respondents who were older and those with larger households reported also lower mobility in the past. The differences in geographic mobility among the adults in Fort McMurray were similar to those observed in Canada, though somewhat higher than the Canadian averages (Gartrell et al 1980:56).

9.1.2 Families and Households

Since the 1979 survey conducted in Fort McMurray by AOSERP was based on interviews with adults from a representative sample of households, it could not produce reliable information

about the demographic characteristics of families. Consequently, the statistics on families and households contained in the AOSERP report (Gartrell et al 1980:288-328), were incompatible with those developed by Harvey (1981:85-92, 109-114), who had relied on the Population Census data provided by Statistics Canada. Any comparisons that could be made with regard to changes in the characteristics of families and households in Fort McMurray between 1976 and 1979, involved the households rather than the families.

The Municipal Census of Fort McMurray determined that the average size of households had decreased from 3.6 persons per household in 1976 and 3.7 in 1977, to 3.4 in 1978 and to 3.3 in 1979. The 1979 survey of AOSERP reported the average number of persons per household to be 3.48. This overall decline in the average household size was undoubtedly related to the declining proportion of children less than 15 years old, and to the improving housing situation in the community.

While in 1976, the average number of children per family was 1.78, the 1979 AOSERP survey reported the average number of children per household to be 1.32. It would not be surprising if, consistent with the trend observed since 1961, the average number of children per family continued to decrease in Fort McMurray. Nevertheless, the town had larger households and more children per household in 1979, than Alberta or Canada, mainly because of the high proportion of young married adults with children (Gartrell et al 1980:292; Harvey 1981:56,90,111).

9.2 EMPLOYMENT AND LABOUR FORCE

During the first year of production of the Syncrude plant, the labour force had expanded again, reaching by 1979, over 35 times its 1961 size. Male labour force participation rate had increased to 99.5%, and the female LFP rate had increased to 56.5% (Figure 9). Women continued to have a higher unemployment rate than men. Moreover, while people who were employed part-time constituted 7.8% of the labour force, over 77% of the part-time jobs were held by women (Gartrell et al 1980:153).

There was some evidence in 1979, that a moderate number of workers with relatively unstable employment histories might have been attracted to Fort McMurray. This group was most likely to be composed of young males without post-secondary education. There was also inferential evidence that usually, those individuals did not remain long in the community (Gartrell et al 1980:182).

Of the respondents interviewed in 1979, men were less likely than women to be unemployed prior to moving to Fort McMurray, and more likely to have a job arranged when they came. It was also easier for men to find a job immediately after coming to the community. A considerable amount of both upward and downward occupational status mobility was associated with the move to Fort McMurray. Better educated workers and those employed by the oil sands companies were more likely to have experienced upward mobility. However, the average amount of mobility was small (Gartrell et al 1980:182).

Working overtime was a commonplace activity in Fort McMurray in 1979, but holding a second job was not. The latter was most probably a consequence of the former. Since a number of the respondents employed in 1979 had looked for full-time work in the previous year, it was possible that some groups might have been relatively dissatisfied with their jobs (Gartrell et al 1980:183).

9.2.1 Employment Distribution

By 1979, the oil sands development boosted the proportion of those employed in mining to 40.2%. However, with completion of the Syncrude plant, the proportion of the work force employed in the construction industry fell from 18.3% in 1978, to 16.6% in 1979. At the same time, the proportion of the work force in professional and technical operations and in management remained stable. This would indicate that most of the recruitment to professional and managerial ranks had occurred prior to the completion of Syncrude plant (Table 7 and 8).

9.2.2 Relative Income Levels

Incomes in Fort McMurray in 1979 were considerably higher than the Canadian average, the Alberta average, and the estimated Edmonton average (Gartrell et al 1980:219). According to Gartrell, residents in Fort McMurray did not receive high incomes because they were a select group of workers with higher skills and longer work experience. Their incomes appeared to have increased after they moved to Fort McMurray. Men made more money than women, and the better educated, the "middle" aged (35 to 44), and those working for the oil companies reported higher incomes. Those who were over 44, and those who were living in the community prior to the construction of Syncrude, had somewhat lower incomes than younger, more recent arrivals in the community. Low average incomes were reported by single parents and Native people, but their small numbers in the 1979 sample made estimates unreliable. Oil company employees got more fringe benefits than public sector employees, but both these groups recieved better benefits than the rest of Fort McMurray's workers (Gartrell et al 1980:220).

Standards of living were fairly high, though household "luxury" possessions were not particularly widespread. The level of debt reported varied considerably, with approximately one-third of the 1979 sample reporting non-mortgage debt. Respondents with higher incomes and standards of living reported more debt, but the proportion of debt to income decreased as income increased. Longer-term residents reported higher debts, even when adjustments were made for age and income. Higher financial stability and/or higher consumption might have been responsible for the accumulation of debt (Gartrell et al 1980:220).

9.2.3 Native Employment

During the first year of operations of the Syncrude plant, AOSERP conducted a study of integration of Native workers into the Fort McMurray labour force, which was based on the field interviews (Littlejohn and Powell 1981). Three indicators were used

by the study to assess successful integration into the labour force: (1) steady employment; (2) employment that matched or exceeded the level of formal educational qualifications; and (3) a good opinion of one's on-the-job performance. Results of the study indicated that the majority of the employed Native respondents could not be classified as "successfully integrated".

Part of the explanation for poor work force integration lay in the characteristics of the sample interviewed. The respondents were mostly young, poorly educated, and they possessed few marketable skills. Although they moved to Fort McMurray with the intention of seeking full-time employment, they were only qualified for unskilled work, which provided little opportunity for advancement and job security. In addition, historical and cultural factors created impediments to successful integration of Native workers. The Native labour force in Fort McMurray was drawn, for the most part, from communities of northern Alberta. The migrants had little experience with urban life-style and often arrived in Fort McMurray with inadequate information about local conditions of life.

The situation was compounded by a discrepancy between aspirations of the Native workers, which were high, and the low expectations of their fulfillment. Such a wide divergence between aspirations and expectations could often lead to personal and social frustrations. While the discrepancy might have been an effect of poor integration into the work force, it could also have prevented Native workers from successfully integrating into the industrial and urban environment of Fort McMurray.

9.3 HOUSING

By 1979, there was a further increase in the total housing stock (Figure 10). At long last, after the limited availability of housing throughout the 1970s, a reasonable balance between the supply and demand was obtained. The volume of construction which grew very fast in the earlier period, appeared to be steady in this operational phase. The total value of construction which was

$56.19 million in 1978, increased moderately to $57.5 million by 1979 (Harvey 1981:165).

Between 1964 and 1979, i.e. over the period of 15 years, residential construction represented on average, 59.6% of the total value of construction in Fort McMurray. This was followed by the construction of institutional or government offices and commercial structures, which represented 19.4% and 19.2% respectively. Industrial development averaged only 1.8% of the total value of construction in Fort McMurray during that time (Harvey 1981:153-4).

After reaching their peak in 1978, the prices of housing lots ($30,000) and housing construction ($45,000) were comparable to Edmonton levels. During the operational period, these prices began to stabilize (Nichols 1980:33,38).

9.3.1 Housing Characteristics

Composition of the housing mix in 1979, was more or less consistent with that which prevailed at the end of construction of the Syncrude plant (Gartrell et al 1980:77-80). One large difference was the increase in the proportion of apartments and of semi-detached dwellings and townhouses which grew by 7.3% and 11.8% respectively, while mobile homes decreased by nearly 11% (Figure 8). The overall home ownership had decreased further however, to below 50%. By 1979, only 47.3% of Fort McMurray's dwellings was owned, with the majority (52.7%) of dwellings being rented.

9.4 SERVICES AND FACILITIES

Following the end of construction activities, the population of Fort McMurray began to stabilize, and community services and facilities started gradually to catch-up with the new conditions. The supply of most community services was now able to meet the existing demand.

9.4.1 Commercial Sector

Continued and accelerated development of the retail and business services and facilities coincided by 1979, with a lower rate of growth of the population and consumer spending. Although a shortage of such merchandise as usually found in the department stores still existed, a broad range of consumer goods was available in two shopping malls opened in the Lower Townsite. Moreover, there was a surplus of commercial space; this was built as part of preparations for the planned Alsands development and exceeded the current requirements of Fort McMurray (Nichols 1980:42-3). With the manufacturing services remaining more or less unchanged, there was no diversification of the town's economic base. The high cost of transportation and labour in the area, appeared to inhibit such diversification (Harvey 1981:175).

9.4.2 Health and Welfare

Until 1980, when the first phase of the new hospital was opened featuring 143 additional beds, the standard of health care services continued to decline (Nichols 1980:61). One of the major problems was a chronic shortage of medical staff and high level of staff turnover. In 1979, the community had only 12 resident physicians and a ratio of one doctor per 2100 persons compared to the Alberta average of 590 persons per doctor. The Fort McMurray hospital experienced a 100% staff turnover rate at that time (Nichols 1980:65). Attempts to attract and retain medical personnel were hampered by the unwillingness of most highly skilled professionals to work in a resource town with unsatisfactory hospital facilities and equipment. This situation improved after the new hospital had opened.

The rapid growth of demand for a higher level and broader range of services had induced virtually all provincial and federal government departments serving the Athabasca Oil Sands region to institute an office in Fort McMurray by 1979. The government of Alberta was represented by sixteen different agencies including housing, social services, recreation, and environment (Harvey 1981:178).

9.4.3 Education

School facilities continued to be overcrowded, while the enrolment continued to grow. The overcrowding was particularly drastic in the public school system, where student enrolment grew faster than in the separate school system, reflecting the changing religious affiliations of the population in Fort McMurray (Harvey 1981:177,199). The increasing enrolment in Fort McMurray stood in direct contrast to that in the Province, where student population was declining. This decline of student enrolment in Alberta might have contributed to a conservative approach taken in approving construction of new schools in the community (Nichols 1980:69).

9.4.4. Culture and Recreation

By 1979, leisure facilities available to residents of the town had increased remarkably. In the provision of recreational facilities, there occurred an expansion of previously exisiting facilities and the development of new facilities with a greater range of leisure activities. Thus facilities for curling, baseball, soccer and tennis were expanded, and new facilities were built for such activities as raquetball, handball, squash, cricket, and bowling. Six leisure centres managed by the YMCA, were also established (MTB Consultants 1980:47-64).

Improvements occurred as well in the provision of cultural facilities. The exisiting cinema was enlarged, a drive-in theatre was opened, and two drop-in centres were created. The MacDonald Island complex was completed providing additional meeting and banquet space, and the library was moved into larger premises. Despite those improvements, the scope of cultural facilities remained somewhat limited and specialized cultural facilities were lacking (MTB Consultants 1980:47-64). Moreover, althogh the number of volumes in the Fort McMurray library approached 30 000 in 1979, the population increase continued to reduce the number of volumes per resident, which at the time was less than 1.15. The 1979 estimate of circulation for the library was over 100 000 (Harvey 1981: 176-7). By and large however, leisure programs available to Fort

McMurray residents were rapidly developed and diversified during this period.

9.4.5. Protection and Criminal Justice

While no data on the crime rates were available, it would appear that the provision of police services continued to improve. In 1979, the police detention facilities were expanded as was the office space. A juvenile detention centre was also opened. A correctional forestry camp became operational south of Fort McMurray, though it was still necessary to process the inmates outside the town, in Fort Saskatchewan (Nichols 1980:5-1).

9.4.6 Physical Infrastructure

No drastic changes appeared to have happened in the provision of transportation and municipal infrastructure, although the facilities continued to improve. By 1980, air passenger traffic to and from the community slowed down, reflecting the relative lull in local economy.

9.5 COMMUNITY RESPONSES

In general, community responses would depend on demographic characteristics of the population and local conditions of life. In most resource communities, both these broad factors were observe to influence for instance, the degree of population turnover. People who might be expected to live in a community for a shorter period of time, would usually tend to be young single males, with lower education, who had moved often in the past, and who came from urban backgrounds and from outside the province. The short-term residents would also tend to have smaller households, and unfavourable housing tenure (renters) and housing type (not a single family housing), with other conditions of life acting as contributing factors (Gartrell et al 1980:56-7).

An additional, though related factor would be the quality of family life, which could constitute "the most important reason

leading an individual worker to leave a resource town" (Riffel 1975:61). Since resource communities might be expected to be notoriously unstable (Lucas 1971), a satisfactory family life could serve as a buffer in their disruptive social setting (Gartrell et al 1980:288). Conversely, an unsatisfactory family life would magnify the psychological strains which, for various reasons, might be associated with living in a resource town.

The present section discusses the results of the 1979 AOSERP survey pertaining to several aspects relevant to community responses. These include: the length of residence in Fort McMurray; satisfaction with the quality of family life; and the residents' evaluations of the local conditions of life discussed in the preceding sections. These behavioural and attitudinal responses would have affected the community stability in Fort McMurray.

9.5.1 Length of Residence

Some of the demographic characteristics of the population in Fort McMurray corresponded to those which would be conducive to a high population turnover. For although the town had a large proportion of families with children, it had also a large proportion of young single adults. It would appear therefore, that propensity for a relative lack of community stability did exist in Fort McMurray.

Results of the 1979 survey indicated that, after the start of operations by Syncrude, community stability had increased in Fort McMurray, when compared with the early operations of the Suncor project. Nevertheless, stability of the community was very low when compared with Edmonton (Gartrell et al 1980:59,72).

Similar to the situation which existed in 1969, after Suncor had commenced production, about one-half of the adult population interviewed in 1979, resided in Fort McMurray for less than two years. The proportion of residents who had come during the construction of Syncrude and stayed was smaller however, than the proportion of those who had come during the construction of Suncor and stayed. Instead, more people had lived in the town throughout the construction of Syncrude than had throughout the construction of

Suncor. While about 22% of the 1979 sample had moved to Fort McMurray by the end of 1974, only about 12% of the 1969 sample had moved to the town by the end of 1964. Though in 1979, only 7% of the residents had lived in the town for ten years or more, by and large, the length of residence appeared to be increasing (Gartrell et al 1980:72).

As could be expected, contrast between the length of residence in Fort McMurray and that in Edmonton was quite dramatic. Only about 8% of the adults in Edmonton had lived there for less than two years, and nearly 64% had lived in Edmonton for ten years or more (Gartrell et al 1980:59). However, a comparison between Edmonton and Fort McMurray might not be very meaningful. Edmonton was not a resource town, and resource towns -- such as Fort McMurray -- would tend to lack community stability. Fort McMurray was designated though, to become a major urban service centre in the future; as such, it was yet to grow further and to develop a more stable population.

The increasing stability of the population in Fort McMurray between 1969 and 1979, was reflected also in the residents' intentions to remain in the community, and in the fact that these intentions generally paralleled the actual behaviour. Of the 1979 sample, nearly 42% of respondents had planned on arrival in the community, to stay for more than 10 years (compared to 49.4% in 1969). At the time of the 1979 interview, 48.4% of the respondents planned to stay more or less permanently, compared to 22.9% in 1969. The proportion of the 1979 sample of adults, who on arrival had planned to stay in Fort McMurray for less than two years was 38%; this proportion was 25% in 1969. At the time of the interview, 18% of the 1979 sample planned to stay for less than two years, compared to 42.3% in 1969 (Gartrell et al 1980:61-2). These data indicated that by 1979, a growing proportion of the population was beginning to consider Fort McMurray as a place of permanent residence.

Predictably, the housing conditions did affect the length of residence in the community. Those who lived in single family housing and those who owned their own home had lived in the town

longer than others (on the average, 1.65 years longer). Residents of the older neighbourhoods, such as Waterways and the Lower Town, had lived in Fort McMurray longer than the residents of newer areas, which was not particularly surprising.

Those who had moved to the community from outside Alberta came there on the average, about 1.6 years later than those from the Province. But married respondents had lived in the town for a period of 0.9 years shorter than had the single (Gartrell et al 1980:68). This unusual phenomenon could reflect the fact that most of the married permanent employees, who were hired by Syncrude for its operations, had arrived quite recently during the 1977-78 period. At the same time, the population turnover might have been higher among those who were married than among those who were single. Should this have been the case, then the usual demographic factors would not be the only important determinants of the length of residence in Fort McMurray.

9.5.2 Family Life

Typically, an assessment of the quality of family life in resource communities would be negative. However, little systematic research was conducted on the effects of resource development on local families. As was the case in Fort McMurray, most of the negative evaluations of the quality of family life had been inferred from indirect data sources. These sources included records of liquor sales, illegitimate births, and mental illness referrals, as well as opinions voiced by those in the "helping professions", such as social workers and probation officers (Larson 1979; Johnson 1979). Because of their particularistic perspective, most of these sources would tend to over-estimate the severity of family problems in the community (Gartrell et al 1980:288-9).

The AOSERP survey of 1979 attempted to ascertain whether family organization and stability did suffer among those who had moved to Fort McMurray, as claimed by some social workers (Gartrell et al 1980:288-328). The respondents to the survey did agree that family breakdown was common (72%), and that marital infidelity was

common (53%) in Fort McMurray. In this respect, they shared the opinion of experts in the helping professions (Gartrell et al 1980: 326).

Nevertheless, the respondents rated highly the quality of their own family life which apparently, had not been negatively impacted by resource development activities. The relatively low ratings of Fort McMurray as a good place to establish a permanent home, which averaged 60 points out of 100, had not affected the ratings of the quality of family life, which averaged 84 out of 100. In addition, length of residence in the town was unrelated to satisfaction with family life (Gartrell et al 1980:327). Gartrell concluded therefore, that the resource community as such had little effect on the quality of family life. It could be questioned however, whether the accepted cultural norms might not have presented the respondents from a lower rating of the quality of their own family life.

In general, the respondents who had moved to Fort McMurray as a result of a joint decision made by both husband and wife, evaluated more positively the quality of family life and the community. Although 60% of the married respondents reported that the decision to move was a joint one, only about one-half had come for an exploratory visit, and wives had come as well as husbands in only one-half of those cases. No evidence was found though, of any long-term negative effects of the lack of joint decision-making on satisfaction with family life (Gartrell et al 1980:300-303).

Contacts with relatives outside Fort McMurray had no significant effects on the satisfaction with family life. But interaction with relatives within the community had a positive effect on family satisfaction for those who had lived there for less than one year. After the period of settling down, other social contacts appeared to be more important for integration into the community (Gartrell et al 1980:327).

Resource towns would tend to be perceived as poor places to raise a family, mainly because of their social problems

and often inadequate services and facilities. In 1979, almost 70% of the married respondents reported problems in finding activities for teenagers, and about 35% indicated problems with getting babysitters or daycare. The latter was particularly difficult for the parents living in apartments. Only 10% of respondents had reported that the move to Fort McMurray resulted in a decreased interaction with their children, but for 38% of the respondents interaction with their children had increased. An increased interaction with one's children had a positive effect on the satisfaction with family life (Gartrell et al 1980: 327-8).

The ability of families to adapt to changes in the conditions of life would be also affected by the quality of the relationship between marital partners (Larson 1979:46). This relationship could be measured by the frequency of interactions and by the amount of positive or negative communication between the partners. Only 40% of the married respondents reported that they and their spouse go out together alone often or very often, but 70% reported doing things with their children that frequently. About 50% reported that interaction with their spouse had not changed on moving to Fort McMurray; among the rest, the interaction with spouse had increased as frequently as it had decreased. The more time the respondents were spending with their spouse, the greater was their satisfaction with family life and the more positive were their attitudes towards the community (Gartrell et al 1980:328).

9.5.3 Employment

Contrary to popular stereotypes of resource communities, workers in Fort McMurray differed little from workers in the rest of Canada in their attitudes toward making money. About one-third of respondents interviewed in 1979, indicated that they would take any job if they were well paid for it. About three-fifths of those currently employed said they would take the same job again (which resembled the national results). Slightly less than one-half said that they would strongly recommend their job to a friend. Like the

rest of the Canadian labour force, they showed a moderate amount of "alienation" (Gartrell et al 1980:250-52).

The more complex a job and the less repetitious the work, the more satisfying the job was reported to be. People who received more fringe benefits and those who had lived longer in Fort McMurray were more satisfied with their jobs. Interestingly enough, oil company employees reported lower job satisfaction. The more highly educated and the better paid the workers were the less satisfied they were with their jobs. However, job satisfaction increased slightly over the decade. While in 1969, longer-term residents reported less satisfaction than the newcomers, the opposite was true in 1979. The longer a respondent had lived in Fort McMurray, the more job satisfaction he or she reported (Gartrell et al 1980:52). To the extent that job satisfaction would be positively correlated with general satisfaction with life, the conditions in Fort McMurray appeared to have improved following the construction of Syncrude.

9.5.4 Housing

Viewed in the context of life-style, the shortage and the high cost of housing had important implications for a variety of social situations in Fort McMurray. The resultant move towards higher density living raised numerous concerns regarding the impact of housing on social conditions of families and satisfaction with the quality-of-life of local residents.

Some of the impacts were identified by the 1979 survey of Fort McMurray's residents. Despite employer subsidies, which 46% of the survey respondents received, shelter costs continued to be high averaging $ 356 per month. Subsidies were more likely to go to those who owned their home and to those with high incomes. Relative newcomers were no more likely to have subsidized housing than those who came before 1978. More than 60% of respondents moved at least once within the town, and about two-thirds of those moves involved changes in housing types (Gartrell et al 1980:75-124).

On moving to Fort McMurray, about one-third of respondents lost single family housing, and about one-sixth gained it. For those

who had come after 1977, the probability of getting a single detached dwelling decreased from 26% to 9%, while the probability of occupying a multiple family dwelling increased correspondingly. The probability of getting a single family dwelling was highest (50%) for those who arrived earliest, no matter what kind of housing they had when they came.

Respondents in single detached housing had lived in their residence longer, and those in mobile homes had lived there a shorter time than those who lived in multiple family dwellings. Predictably, home ownership and lower shelter costs appeared to be associated with greater stability, as did employment with Suncor and Syncrude.

Although the housing situation had improved, there was little evidence in 1979, of improvement in residents' satisfaction with their housing. Factors external to dwellings, such as landscaping, space for children to play, privacy, space outside, and noise were judged to be of relatively poor quality by over one-third of respondents. Overall, over one-third of the sample interviewed reported generally poor housing. Differences in perceived housing quality depended on perceptions of the environment (perceived neighbourhood satisfaction, better housing market position), and on housing characteristics, where single detached dwellings with more amenities were rated higher (Gartrell et al 1980:373-5).

9.5.5. Services and Facilities

Despite the development and expansion of community services, the use and evaluation of these services by the residents of Fort McMurray had indicated that in 1979, much room was left for further improvement of most facilities. For example, many residents felt that an additional major shopping centre, which was proposed for Area 6 as part of the Mackenzie Industrial Park, would help to increase the range of goods and services available locally. The proposal encountered an opposition from among the businessmen

who were fearful of the danger the new shopping centre might pose to the existing, and possibly overbuilt, commercial sector (Nichols 1980:44). Yet the limited range of commercial services might have compounded the already high levels of social stress in the community.

The patterns of use of different services in Fort McMurray varied but were not unlike those typically found in other urban settings. Hospital emergency and public health care services were used quite frequently. As expected, families with children made more use of medical facilities, people with higher education were more likely to attend cultural events, and men were more likely to participate in athletic activities. Most residents preferred recreational activities which were not contingent on the provision of communitiy facilities. The use of bars, lounges, or restaurants appeared to be more frequent than the attendance at movies or cultural events, such as plays or concerts (Gartrell et al 1980:148).

The most frequently cited service-related problem pointed out by over 40% of the sample, was finding good entertainment. About one-third of the sample thought that it was difficult to find good recreational activities in the community, and one-third considered it difficult to obtain help in matters involving vandalism, theft, and juvenile delinquency in general. Abasand Heights residents, who also reported low satisfaction with their housing, were most likely to view vandalism as problematic. Roughly one-third of the sample had a problem in finding special medical or dental treatment during the past year. It was also difficult to obtain services involving car or household repairs. About 20% of the sample reported problems with either cashing cheques or using them as means of payment, but only 7% had problems with borrowing money in the year prior to the interview (Gartrell et al 1980:148). Considering the high level of local employment, this finding was not surprising.

Respondents to the 1979 sample were also asked to evaluate 17 services in Fort McMurray, using a seven-point scale from very poor to very good. The order of most highly rated services was:

telephone, police protection, fire protection, shopping, and schools. Library, garbage collection, recreation, health, and social services came next. Flood control and animal control, as well as aspects of design and maintenance of streets and sidewalks in the town, received negative evaluations (Gartrell et al 1980:148).

With the probable exception of streets and roads, the use of specific services was found to be unrelated to the evaluation of these services. Respondents who had lived in other resource communities were more critical of the services in Fort McMurray, than the respondents without prior experience of life in a resource town. The longer term residents evaluated more positively local health care and social services, but were most critical of the municipal infrastructure including streets and roads. Street repair and snow or ice removal received consistently poor ratings; traffic lights were evaluated most positively by Thickwood Heights residents and least positively by the residents of Abasand Heights. Sidewalks and backlanes were evaluated most negatively in Waterways, and most positively in Beacon Hill (Gartrell et al 1980:149). These differences reflected inadequate provision of the municipal services in some areas of the community.

9.5.6 Community Stability

In general, people appeared to be better adjusted to the circumstances they found in Fort McMurray in 1979, than they were in 1969. Demographic factors were not the only important determinants of the length of residence in the town, or of the attitudes towards the family life and the community. Still, any conclusions regarding stability of the community would be highly speculative. The 1979 survey looked at only one post-construction period. Its results might have been quite different had the information been also obtained during other phases of resource development in Fort McMurray. Moreover, the information was obtained only from those who had stayed in the community, and nothing was known about those who had left. Without the additional follow-up information from those who had left

and from those who had stayed, it was impossible to ascertain the extent and nature of the population turnover or the degree of community stability in Fort McMurray, at the time when both Suncor and Syncrude were operational.

10. CONCLUDING SUMMARY

Several major factors contributed to the transformation of Fort McMurray between 1961 and 1980, from a small and remote northern community of 1200 people into Alberta's eighth largest city with 27 000 residents. Among those factors, the most important were the strategic role of Fort McMurray in the history of exploitation of northern natural resources, including the oil sands; the Province's involvement in the planning and managing of the community's urban growth; and the stages of development and characteristics of the oil sands industry.

10.1 AN HISTORICAL PERSPECTIVE

Historically, Fort McMurray never existed in a "natural or pre-discovery" stage. The community was established in order to sustain the transportation routes and the trade required to commercially exploit the natural resources of the North. Located in the heart of the Athabasca country hinterland, Fort McMurray had played the role of an agent of the interests of southern Canadian metropolis attempting to develop the natural resources of northern Canada.

Commercial exploitation of the natural resources in the Athabasca country began over two hundred years ago with the entry of the European fur trade dominated by the Hudson's Bay Company. When Fort McMurray was built at the confluence of the Clearwater and Athabasca rivers in 1870, it was to assist in improving the transportation route over the Portage La Loche. After the Hudson's Bay Company had opened the Mackenzie River Basin for northern transportation in 1883, Fort McMurray became its southern terminus and a service and trading centre for the entire region. Following completion of the Alberta and Great Waterways Railway to the Clearwater River in 1921, and then to Waterways in 1925, Fort McMurray began to function as an intermodal terminal between railway and water transportation along the Mackenzie River Basin. In contrast to the region's predominantly Native communities of Fort Chipewyan, Fort MacKay, and Anzac, the residents of Fort McMurray were mostly in-migrant to the area and English speaking. Thus Fort McMurray's socio-economic

structure reflected its role as a northern outpost of the industrial frontier of southern Canada, the interests of which came to be represented in Alberta.

Prior to commercial development of the Athabasca Oil Sands, Fort McMurray had experienced several "boom" and "bust" cycles which were related to exploitation of the natural resources. The fur trade constituted the region's economic base until the 1950s. Because of its role as a transportation terminus and a trading centre, the community was subjected to the cycles caused by fluctuating world prices for furs. The development and subsequent closure of the salt industry in the vicinity of Fort McMurray in the 1920s, and between 1937 and 1951, and of the commercial fisheries on Lake Athabasca between 1926 and 1942, resulted in additional "booms" and "busts".

One of the earliest "booms" related to development of the oil sands involved land speculation of 1907, which more than doubled the number of families in Fort McMurray by 1913. One of the latest "booms" occurred during the World War II, when the Canol Project was to build a road to Alaska and an oil pipeline from Norman Wells to Whitehorse. At that time, Fort McMurray had over 400 residents. The Canol Project brought over three thousand U.S. Army soldiers to Fort McMurray and Waterways, and created a lot of employment but led to no economic development. After the departure of the U.S. Army in 1945, an economic "bust" followed. Fort McMurray reverted to the old seasonal economy of transportation, while the slump was aggravated by the 1951 closure of the salt plant at Waterways. By the time the era of commercial development of the oil sands had arrived, the community was by no means a stranger to the cyclical nature of an economy dependent on natural resources. Since the demand for resources of northeastern Alberta was generated by fluctuating demand from markets outside the region, the "boom" and "bust" cycles could be expected to continue unless resource development was accompanied by the economic development.

10.1.1 The Oil Sands

Although the Athabasca "tar sands" had been known since the days of Alexander Mackenzie in the eighteenth century, the sands

emerged as a subject of commercial interest at the end of the nineteenth century. Already in 1882, a suggestion was made that hot water might be used to extract oil from the "tar sands". The subsequent failures of private entrepreneurs to develop oil extraction techniques indicated that successful exploitation of the oil sands would depend on government support for technical research, on inexpensive transportation, and on increasing demand for oil from external markets.

Resource ownership and control were a subject of controversy between federal and provincial jurisdictions from the time the North-West Territories were originally established in 1875, until the time when natural resources were transferred to provincial ownership in 1930. Despite the creation of the province of Alberta in 1905, the Federal Government continued to control resource development until 1930. Meanwhile, the Research Council of Alberta was created by Order-in-Council in 1919, to rationalize the problems of mineral extraction especially in relation to coal and oil sands. Its efforts notwithstanding, the oil sands remained a subject of federal preoccupation into the late 1940s. First, this was due to the onset of the Great Depression which brought a temporary halt to provincial attempts to discover a technology for mining oil sands. Secondly, the outbreak of World War II and the concomitant growing demand for oil induced the Federal Government to launch an extensive drilling program which facilitated the federal involvement in the Athabasca Oil Sands region until 1947. Finally, in 1949, the Alberta Research Council's experimental plant at Bitumount demonstrated that it was technically possible to separate oil from the oil sands. Feasibility of the commercial exploitation of the oil sands was reported by Sidney Blair at the first Athabasca Oil Sands Conference sponsored by the Government of Alberta in 1951.

Even though a few exploration permits were taken out by oil companies during the early 1950s, no major developments occurred because Alberta's conventional sources of oil supply were rapidly increasing. The situation changed when in 1956, Egypt blocked the Suez Canal thereby endangering the supply of oil to North America

from the Middle East. By 1958, the exploration permits had reached 93, and several experimental oil sands plants and pilot projects became operational in the region. However, only in the 1960s, improvements in technology, increasing oil prices, and the desire to reduce a growing Canadian dependence on imported energy combined to culminate in the development of Suncor, and in the application to develop Syncrude. By the time the Syncrude project was approved in 1973, it had become apparent that Alberta's conventional sources of oil and gas could no longer meet the equivalent of total requirements for hydrocarbons in Canada. Consequently in 1975, the federal and provincial governments decided to rescue the then endangered project by entering jointly into the Syncrude consortium.

Commercial exploitation of the Athabasca Oil Sands had become first, the major source of economic growth in the region, and subsequently, its only significant economic base. Development of the Suncor project in the 1960s, and of the Syncrude project in the 1970s, had opened employment opportunities which brought thousands of new residents to Fort McMurray, necessitating its rapid urban expansion. The rate of growth of the community was without precedent in Alberta or northern Canada.

10.2 ADMINISTRATIVE RESPONSES

Massive scale of proposed exploitation of the oil sands and related urban expansion of Fort McMurray heightened public sensitivity and government concern for the need to provide services and facilities in the region, which would be commensurate with the anticipated development. Meanwhile, public expectations of greater government involvement in the provision of social services in general, led to a number of provincial enactments through which the Province assumed an increasingly active role in the development of northern communities. Two of those enactments proved to be particularly important to the growth of Fort McMurray: the New Towns Act of 1955, and the Northeast Alberta Regional Commission Act of 1974. Both these Acts facilitated direct involvement of the Government

of Alberta in the planning and managing of rapid urban expansion of the community.

Fort McMurray was incorporated as a town in 1948, and until 1964, the community had an elected council and a mayor. In 1962, the Town Council applied for the New Town status for Fort McMurray. This status was granted in 1964; under the New Towns Act, Fort McMurray's elected council was then replaced by a Board of Administrators appointed by the Minister of Municipal Affairs. Although the Board was converted from an appointed to an elected body in 1971, it reported to the Alberta Planning Board and the Local Authorities Board in all matters related to the planning, development, and financing of Fort McMurray's growth and operations. Both these boards were administered by the DMA. Consequently, the areas usually of local municipal jurisdiction were being dealt with by a configuration of forces including the Board of Administrators, the Department of Municipal Affairs, and during the construction of Syncrude, also the Northeast Alberta Regional Commission.

The Commission was established in 1974, with the mandate to ensure a co-ordinated and orderly socio-economic development of the entire region. Since the population growth induced by the construction of Syncrude was concentrated in Fort McMurray, the Commission became involved in the municipal planning and development, especially in the area of local service delivery.

Enormously powerful under the Act, the Commissioner was appointed by and responsible to the Provincial Cabinet. In practice, the Northeast Alberta Regional Commission was constrained by the lack of line responsibilities and direct authority over the agencies involved in service delivery. The Commissioner had to rely therefore, on a more informal approach, such as improving communication channels between the local agencies, to ensure that services in Fort McMurray were put in place as required. Furthermore, the Commissioner adopted the role of a facilitator, and was highly accessible to the local groups and residents. In the situation where the New Town status of Fort McMurray had reduced the responsibilities to the electorate of local politicians, the potential powers and the actual accessibility

of the Commissioner appeared to have provided a modicum of a substitute for an accountable local government. An autonomous local government had not emerged in the community until 1980, when Fort McMurray was designated officially as a city.

10.3 URBANIZATION OF A RESOURCE TOWN

One assumption of this study was that stages of commercial exploitation of the oil sands shaped the stages of growth of Fort McMurray as a resource town. Within the time frame of this study, five stages were identified in the development of the resource industry: (1) pre-construction stage from 1961 to 1963; (2) construction of Suncor from 1964 to 1967; (3) operations of Suncor alone from 1968 to 1973; (4) construction of Syncrude from 1974 to 1978; and (5) operations of both Suncor and Syncrude from 1979 to 1980. These stages were simultaneous with the stages of development of Fort McMurray. Each of these stages resulted in new employment opportunities and related labour force requirements, leading to growth of the population in Fort McMurray. Each stage called therefore, for appropriate measures in the provision of housing and community amenities. The magnitude of growth and the pace of changes in Fort McMurray as a resource community, were thus shaped by the stages of development of the oil sands projects.

Another major assumption of this study was that specific characteristics of the oil sands industry had shaped the nature of social changes in Fort McMurray, and the quality of its urbanization. Both Suncor and Syncrude have relied on strip-mining of the oil sands and extracting the oil from the bitumen on-site, where processing plants had been constructed. The complex technology involved in the operation and maintenance of the processing plants and mining equipment necessitated the hiring of relatively large, highly skilled, and educated permanent labour force. These factors affected the characteristics of the population arriving in Fort McMurray, and thus the nature of requirements pertaining to housing and community services and facilities. Although located some distance away from

Fort McMurray, the industrialization related to development of the resource had been instrumental in shaping the quality of urbanization of the town. For the quality of urban expansion of Fort McMurray had to be compatible with the needs of the new residents.

The sections which follow, summarize the magnitude and nature of socio-economic changes in Fort McMurray between 1961 and 1979. First, changes in the structural variables, including population, employment and labour force, and income are summarized. Subsequently, the summaries examine such conditions of life as housing and community amenities. The last section focusses on the community responses to life in Fort McMurray. In the course of these summaries, the patterns of change characterizing the development of the oil sands industry are indicated and discussed.

10.3.1 Population

Between 1951 and 1961, the population of Fort McMurray grew slowly from 962 to 1186, which meant that over 50% of the inhabitants of the Athabasca Oil Sands region lived in the town. Most of the remaining population lived in the unincorporated communities of Fort Chipewyan, Fort MacKay and Anzac. By 1971, the population of Fort McMurray increased to 6847 or 80.7% of the residents of the region; by 1979, it had reached nearly 26 000 or 94% of the region's population (Harvey 1981:55). By 1980, when Fort McMurray became a city, its population was estimated at close to 27 000.

The highest rates of population growth occurred during the construction of Suncor in the mid-1960s, and during the construction of Syncrude in the mid-1970s. Workers employed in construction of the two oil sands projects lived in camps at the industrial sites and were not included in the population statistics. However, workers employed in the town construction which was simultaneous with the industrial construction, were often moving permanently into Fort McMurray. The town was too isolated from other urban centres to permit commuting to work. Moreover, during the construction of Syncrude, local housing costs were too high to allow married workers

to rent accommodation in Fort McMurray, while maintaining family household elsewhere. The most rapid growth of the population was observed in the first year of Suncor's production stage, and during the last year preceding the start of production by Syncrude, when the permanent operating staff had arrived. In contrast, most resource communities in the USA had experienced highest rates of population growth during the operational stages (Murdoch and Leistritz 1979, cited by Harvey 1981:233).

With the arrival of new residents, major changes resulted in the demographic characteristics of the community. Age composition of the population had altered dramatically. In 1961, residents in the prime years of working life, i.e. between 20 and 44 years of age, were under-represented in Fort McMurray, accounting for 28% of the population. By 1979, this age group grew to 50% of the population and was over-represented. The in-migration of young adults was highest during the two construction periods. Between 1961 and 1979, the population age 45 and older decreased from 21% to only 7%, with those over the age of 64 representing merely 0.4% of the residents (Harvey 1981:56).

Similar to most "typical" northern resource communities, males were over-represented in Fort McMurray since 1961. During the construction of Suncor, more men had arrived and the ratio jumped from 119 males per 100 females in 1961 to 129 males in 1966. In the late 1960s, the development of new housing allowed more families to move into Fort McMurray, which reduced the ratio of males to 109 by 1971. Although by 1976, masses of workers had arrived because of renewed urban construction related to the Syncrude project, the ratio of males per 100 females remained unchanged. However, by the first year of Syncrude's operational stage, the ratio increased to 112 males (Harvey 1981:57; Gartrell et al 1980:71). The policy of Syncrude, which gave preference to hiring married permanent employees, appeared to have had little effect on the ratio. Nevertheless, in contrast with most developing northern resource towns, a relatively high proportion of the residents in Fort McMurray was married, and

in 1976, the rate of natural increase was about twice the Alberta rate (Harvey 1981:61-2).

Other changes in the demographic characteristics of Fort McMurray were consistent with those observed in most northern resource communities. In 1961, the population of the town was divided ethnically between British (35%), French (24%), and Native Indians (12%), with other ethnic groups accounting for 29% of the residents. The population was also predominantly English speaking (72%), which would indicate that at the very most, slightly over one-third of the residents were of Native Indian or Metis ancestry (Harvey 1981:46-7). By 1979, the proportion of population with British ancestry and of people whose mother tongue was English had increased, while the proportion of residents with French ancestry declined to 9% and of Native Indians and Metis to only 4% (Gartrell et al 1980:50). In addition, Fort McMurray began to exhibit a relatively high heterogeneity of religious affiliations. Although the Roman Catholics who were twice as numerous (60.5%) in 1971 as in Alberta had decreased to 31% in 1979, they were still the largest group. But a shift from Roman Catholic to Protestant religious orientations was evident.

Reflecting the need of the oil sands industry for highly skilled permanent employees, the level of education of the residents in Fort McMurray had risen considerably. In 1961, of the population 5 years old and over not attending school, more than 66% had less than Grade 9 education (compared to 43% in Alberta), while Grades 9 to 13 were completed by 29% of the peopple (compared to over 50% in the Province). By 1979, of the population 15 years old and over attending and not attending school, only 5.4% had less than Grade 9 education, over 77% had between Grade 9 and post-secondary non-university education, and over 17% had university education. Those with education between Grade 11 and 13 constituted 35%, and those with post-secondary non-university education accounted for nearly 26%. These proportions were in every respect higher than the 1976 proportions for Alberta, and reflected the high level of skills and education required of the labour force employed in the operations of Suncor and Syncrude.

One of the most pervasive features of the population in Fort McMurray, was its high mobility. In 1976, the majority of the residents had moved to the town during the preceding five years, either from other provinces or from other localities in Alberta. Although in 1979, about 41% of the residents lived in Alberta prior to moving to Fort McMurray (compared to 64% in 1976), both these proportions might have been over-estimated because Syncrude had used Edmonton as a "staging area" for hiring its employees. However, about 57% of the residents came directly from other provinces, and about 2% moved to Fort McMurray directly from another country. Great majority of the residents living in the town, came from urban centres. Evidently, recruitment of the high quality permanent personnel for the oil sands industry acted as a "brain drain" on the urban centres of Alberta and other provinces.

10.3.1.1 Families and Households. Families in Fort McMurray were distinctly larger prior to development of the oil sands than afterwards. In 1961, the average size of family in the community was 4.6 persons, and 44% of the families was composed of 5 or more persons. The average age of family heads was rather mature, and nearly 42% of the families was headed by people over 44 years old. By 1976, average size of the families declined to 3.8 persons, and only 26% of the families was composed of 5 or more persons. The average age of family heads became much younger, reflecting the influx of young married adults into Fort McMurray. The families became also more autonomous, maintaining their own households and seldom having lodgers. Any lodgers and secondary families in the households had often strong social ties with the household heads (Harvey 1981:85-92).

When Suncor started production, the proportion of one-family households which was 73% in 1961, had increased and that of non-family households had declined. This trend was reversed when the construction of Syncrude started, because of the in-migration of single people into the community. Between 1961 and 1979, other trends were also evident. The proportion of very large households had noticeably declined, the average age of household heads became

younger, and the proportion of households heads who were single had increased (Harvey 1981:236-7).

In 1961, the average size of households in Fort McMurray was 3.85 persons. This size had declined to 3.3 persons per household by 1979. The overall decline in the average household size was probably related to the smaller proportion of children less than 15 years old. While in 1961, the average number of children per family was 2.63, by 1976, that number was 1.78. Nevertheless, Fort McMurray had larger households and more children per household in 1979, that Alberta or Canada (Gartrell et al 1980:292).

10.3.2 Employment and Labour Force

The two periods of major economic growth occurred during the respective industrial construction stages. The magnitude of economic activity surrounding the development of Suncor and Syncrude would have been large in any context. When superimposed on the underdeveloped economy of the Athabasca Oil Sands region and Fort McMurray, its impact was overwhelming. The construction and operation of both oil sands projects was much more labour and capital intensive than ever anticipated, and the economic growth was localized and concentrated in the Fort McMurray area. A massive influx of men, materials, and equipment was required to build the plants and the attendant regional and urban infrastructure. Each construction phase was then followed by a major build-up in operating and indirect service employment (Nichols 1979; Gartrell et al 1980).

During this period of rapid growth, the Fort McMurray labour force had expanded to reach by 1979 over 35 times its 1961 size. Labour force participation rates increased for both males and females. Male LFP rate had increased from 72% in 1961 to 99.5% in 1979; the female rate had increased from 20.4% in 1961 to 56.5% in 1979. In general however, women had higher unemployment rates than men (Harvey 1981; Gartrell et al 1980:153).

Fort McMurray's employment structure changed from transportation, communications, and utilities which provided 37% of jobs in 1961, to mining and construction. Although construction jobs came

and went with the building of plants and town, over 16% of the labour force was still employed in construction in 1979. With both Suncor and Syncrude operational, over 40% of the labour force was employed in mining. Almost one-half of the employed residents of the community worked in 1979, directly for either Suncor or Syncrude (Gartrell et al 1980:161). Professional and technical occupations which in 1961 constituted 7% of the total experienced labour force, grew to 24% by 1979.

A considerable amount of both upward and downward occupational status mobility was associated with the move to Fort McMurray. Better educated workers and those employed by the oil sands industry were more likely to have experienced upward mobility. However, the average amount of mobility was small. Since a number of people who were employed in 1979, had looked for a full-time work in the previous year, it would appear that some groups might have been somewhat dissatisfied with their current jobs (Gartrell et al 1980:182-3).

10.3.2.1 Construction Camps. During the respective construction stages, most labour force involved in the industrial construction resided in camps at the Suncor and Syncrude sites. Usually, the impact of a construction camp on the surrounding communities would depend on the relative size of the camp to the community. The Suncor camp which housed 2300 men in 1966, was roughly equal in size to the size of the population in Fort McMurray at that time. The community services and facilities which were hardly able to accommodate the demand created by the growing population of the town, were not prepared for additional demand created by the construction camp workers. The impact of the Suncor camp on Fort McMurray was in many respects, overwhelming.

At the peak of construction activities in mid-1977, the Syncrude construction camp housed over 6600 workers. Unlike the Suncor camp, the Syncrude camp had residence facilities for women, a measure necessitated by the increasing proportion of female construction workers. At that time, the population in Fort McMurray had reached over 20 000 residents. Moreover, the Syncrude camp was designed as a largely self-contained operation. In addition to a

variety of recreational and sports facilities, a tavern was opened on the camp-site to help alleviate possible overcrowding of local bars in Fort McMurray. Consequently, while the impact of the Syncrude camp on the town was significant, it was not as overbearing as that of the Suncor camp.

Nonetheless, existence of the Syncrude camp had posed several problems for the town. Local services and facilities were largely unprepared for the use by numerous camp residents, while weekend travels of the camp workers to Edmonton and back caused overcrowding of traffic on Highway 63 and of passengers at the airport. Existence of the camp did stimulate however, the local economy. The workers were well paid, and local retail outlets and hotels were the recipients of much personal spending of the camp occupants.

10.3.2.2 Native Employment. Like in most northern resource communities, employment of the Native people was higher in Fort McMurray during the construction stages than during the industrial operations. Aware of the numerous socio-economic and cultural barriers which prevent Native workers to effectively look for employment, and which prevent most companies from effectively employing Native workers, both Suncor and Syncrude had training-employment programs for Native people. These programs focussed on assisting Native families with relocation from the neighbouring communities to Fort McMurray, and included housing subsidies, on-the-job training, and conselling services. In addition, the education upgrading programs were conducted by the industry in co-operation with Keyano College in Fort McMurray. However, since one of the requirements for entering some programs was the completion of Grade 10, the outlying Native communities might have been "creamed" of their best educated residents (Interview in Fort McMurray, Winter 1978).

The efforts of the oil sands industry notwithstanding, the Suncor construction work force included about 26% Native workers, but its operational staff consisted of only 7% Native employees in 1974, and 10% in 1975, remaining constant thereafter. The Syncrude

construction work force included about 10% Native workers, but during the first year of production, only about 5% of the total operating employees were Native. Most Native personnel was in heavy equipment operations, with others employed as millwrights and welders. Although both Suncor and Syncrude found that the turnover rate among Native workers did not differ appreciably from that among non-native workers, the traditional socio-cultural and other barriers to effective Native employment appeared to have persisted.

Part of the explanation for poor integration of Native workers into the Fort McMurray labour force could be found in the characteristics of the people who were interviewed in 1979. The respondents were mostly young, poorly educated, and they possessed few marketable skills. Having come, for the most part, from small communities of northern Alberta, these people had little experience with urban lifestyle and often knew little about the conditions of life in Fort McMurray. The situation was compounded by a discrepancy between high aspirations of the Native workers, and the low expectations of their fulfillment. While contributing to social and personal frustrations, this discrepancy might have also made it difficult for Native people to successfully integrate into the industrial and urban environment of Fort McMurray.

10.3.2.3 Summary. By 1979, the oil sands operations dominated the regional economy, and constituted the only significant industry in which the output was destigned for extra-regional markets. Fort McMurray however, had virtually no manufacturing base, except for a small number of enterprises serving local needs. Almost all equipment, consumable, and durable goods and materials were imported from outside the town and region. Although increasing number of retail and service outlets was locating in the town, the residents still tended to look outside the community for many higher order goods and services. It appeared unlikely that the budding tertiary industries would continue to expand in Fort McMurray, without further basic economic stimulus (Nichols 1979:xxii). In short, the only economic

development which had occurred was related to the demand created by the oil sands industry.

10.3.3 Income Levels

Meanwhile, Fort McMurray became a place "to make money". In 1961, the average annual wage and salary income in the community was lower ($ 2933) than in Alberta ($ 3220). By 1976, the local average wage and salary income was 25% higher than that in Alberta, and 23% higher than that in Edmonton (Nichols 1979:119). By 1978, the average household incomes in Fort McMurray were 28% higher than in the Province (Gartrell et al 1980:187). At the same time, the cost of living in Fort McMurray in 1978, was bout 13% higher than it was in Edmonton (Nichols 1979:129-131).

The incomes of most workers appeared to have increased after they moved to Fort McMurray. This fact was by no means surprising, and did not mean that the workers had no higher skills or that they were "not a select group of workers", as claimed by Gartrell (et al 1980:219-220). On the contrary, given the new and complex technology of the oil sands industry, the workers were selected on the basis of their high skills and education which would facilitate their training. Since the workers had to be trainable, they were selected from among people who were relatively young; this would explain the lack of their longer work experience observed by Gartrell. Those factors would also contribute to the phenomenon that workers between 35 and 44 years old, and those working for the oil sands companies reported higher incomes (Gartrell et al 1980:220).

As might be expected, women made less money than men, and those who were over 44 years old as well as those who had lived in the community prior to the construction of Syncrude, had somewhat lower incomes in 1979, than the younger newly arriving employees. Low average incomes were also encountered among single parents and Native people. Employees of the oil sands industry had more fringe benefits than public sector employees, but both these groups received better benefits than the rest of workers in Fort McMurray (Gartrell et al 1980:220).

10.3.4 Housing

In the development of Fort McMurray between 1961 and 1980, the provision of housing constituted one of the major concerns of the employers, government, and community. During that time, the need to provide accommodation to the rapidly growing population of the town led to direct involvement of the Alberta Housing Corporation (AHC) in the development of housing in the community. Since 1973, the development of serviced lands rested mainly in the hands of the AHC. Also involved in the provision of housing were Athabasca Realty Company Ltd. which was the land and housing development agency for Suncor, and Northward Development Ltd. which was formed by Syncrude in 1975, to provide housing for the company employees and their families. These three organizations developed thousands of residential lots and sites in Fort McMurray, which -- considering the scarcity of developable lands in the area -- was in many ways more difficult than putting the housing units on them (Nichols 1979; 1980:28-41).

Fort McMurray's housing stock, its size and quality, as well as its composition and characteristics had undergone drastic changes. In 1961, there were 301 dwelling units in the town; by 1979, the number of housing units had grown to 8597. The most substantial growth periods coincided with the end of construction of the Suncor project, and throughout the construction of Syncrude.

Composition of the housing stock changed dramatically. In 1961, the housing mix in Fort McMurray consisted of 92% single family dwellings and 8.0% semi-detached houses. By 1979, the town's housing mix was 29% single detached, 20% mobile homes, 28% apartments, and 23% semi-detached and townhouses. The declining proportion of the single detached dwellings was striking. In 1966, single detached dwellings comprised 69% of the total building permits; between 1974 and 1977, when Syncrude was under construction, single detached units accounted for only 26% of all building permits. Many families coming to Fort McMurray with the hope of living in a single detached unit had to be disappointed. For not the customer but the suppliers and the high costs of housing construction dictated the nature of housing mix in the community.

The quality of housing in Fort McMurray had improved considerably. In 1961, over two-thirds of the dwellings had no running water (compared to only 21% in Alberta). The same scenario prevailed with respect to bath and toilet facilities which were missing in the majority of houses in the community. Already by 1971, tremendous improvements took place in the supply of utilities including water, bath, and toilet facilities. At that time, only 5.6% of Fort McMurray's private dwellings had no running water, compared to 9.9% in Alberta. By 1979, the quality of housing had improved further, especially that of the 8597 existing housing units, only 301 would have been built prior to 1961, were not some of those houses demolished to make room for new and modern accommodation.

Home ownership decreased however, and employer-owned housing began to play an important role in the supply of accommodation in Fort McMurray. In the mid-1970s, the social structure of the entire labour force could be understood in terms of three categories of housing: (1) single person accommodation in the camp; (2) people receiving some kind of housing subsidy or grant; and (3) the rest of the people living without any benefits related to accommodation (Van Dyke and Loberg 1978:31). But housing subsidies posed also problems. For instance, Syncrude permitted its employees to buy a home without down-payment, and with limited regard for the personal debt repayments. Some families were thus left with no discretionary income; and some employees, being unable to own an equal housing unit elsewhere on unassisted basis, were "trapped" by their employer. Many people tended to have longer tenure in the town than in their previous residence, due to the housing programs involving lease-purchase ownership. There were also reasons to believe that housing subsidies played an important role in attracting new arrivals to Fort McMurray.

Despite government and oil sands industry subsidies, housing costs remained high in the community. In 1978, the cost differential was 18% to 21% higher in Fort McMurray than in Edmonton. The high housing costs and the difficulties encountered in Fort

McMurray, in the provision of housing that would be compatible with the needs of the population were not unusual in the history of developing resource communities in northern Canada (Gartrell et al 1980: 75-6).

10.3.5 Services and Facilities

Considering the extremely rapid growth of the population in Fort McMurray and the related expansion of the town, service delivery problems in meeting local demand should not be surprising. The most severe difficulties in the delivery of community services occurred during the construction of Syncrude, and especially between 1974 and 1976. For in addition to the demand created by the quickly growing urban population, the administration of the town had to deal with the demand created by the presence of thousands of construction workers and the "shadow" population in the area.

There were various other elements which generated the demand for social services and facilities, and which were often interrelated (Nichols 1980:53). A major reason for the lag in the delivery of services was the inadequate pre-servicing and pre-planning prior to the commencement of construction of each of the two oil sands projects. The inaccurate and fluctuating population and demographic projections posed serious difficulties to all agencies which were responsible for service delivery. The rapidly growing size and changing characteristics of the population created extraordinary operating difficulties, where the provision of services had to constantly catch-up with the new conditions. By the time the services had been adjusted to the levels required by these conditions, the latter would have changed already.

Moreover, the degree of efficiency of service delivery in one area would influence, through a "spin-off" effect, the provision of services in other areas. For instance, inadequacies in the supply of mental health care and detoxification centres would increase further the number of hospital admissions. While the situation in Fort McMurray called for an integrated planning and flexible responses on part of the agencies responsible for service delivery, those agencies were bound by the relatively rigid and standardized provincial criteria (Nichols 1980:76-9).

Service delivery problems were compounded by the physical separations of various areas of Fort McMurray into semi-isolated neighbourhoods; the "ribbon-like" urban development was expensive to service in terms of both capital and operating costs. Each neighbourhood area had to have a modicum of services and facilities provided on semi-autonomous basis, to enable it to function and to ensure the safety of its residents. This lack of physical integration of the community contributed not only to the higher costs of service delivery but also to a "ghettoization" of the town. The "ghettoization" was more noticeable when a neighbourhood was inhabited predominantly by employees of the same oil sands company.

In the business sector of Fort McMurray, retail services had increased the most since 1961. The number of retail outlets had tripled between 1966 and 1976. Nonetheless, business services did not increase as rapidly as expected given the population growth. Manufacturing activity did not significantly increase since 1972, and Fort McMurray had not diversified its economic base (Harvey 1981:242).

The development of such social services as police force, public assistance, telephone services and facilities, and government administration proceeded soon after Suncor began construction. But other services, including medical and hospital facilities, lagged well behind the expansion of other aspects of the community, at least until 1978-1980. Recreational facilities did not expand to approach the level of community needs until the construction of Syncrude was nearly completed. As late as in 1978, such recreational activities as indoor swimming did not have adequate facilities. Cultural activities were even less well provided for. Increase in library staff had fallen well behind the demand for the service, and few other cultural facilities had been developed (Harvey 1981: 243).

Although the size of local police force was kept comparable to that found in other communities of Fort McMurray's size, the police services were over-extended. Since the mid-1960s, the local crime rates for most types of offences were higher than the Alberta

rates; the highest crime rates occurred in Fort McMurray during the two construction periods. At the same time, the criminal justice system suffered from the lack of sufficient facilities and services to help the "casualties" in the community (Brawn 1975, cited by Harvey 1981:244).

Much development took place in the area of physical infrastructure, and particularly in the availability of road and air transportation. Several highways were built or improved, including Highway 63 which linked Fort McMurray with Edmonton. During the late 1960s and again in 1975, the Fort McMurray airport was upgraded and air service to and from the community was increased. However, until 1980, no public transit existed in Fort McMurray. The extended geographical layout of the town posed numerous problems to familites with only one car and to people unable to drive, especially that most community services were located in the Lower Townsite.

Despite numerous difficulties and shortcomings, the availability and level of community services and facilities had improved remarkably in Fort McMurray since 1961. To some extent, this improvement reflected the general enhancement of services and facilities which occurred throughout the Province at that time (Nichols 1980:22). Unquestionably however, the improvement was also a direct result of the demand associated with development of the oil sands industry. Although during the industrial construction stages, the provision of some services had lagged behind the demand created by the rapidly growing population, by the time both Suncor and Syncrude were operational, most community amenities adjusted to the new conditions and were able to meet the demand in a more satisfactory manner.

10.3.6 Community Responses

Community responses, such as the length of residence in Fort McMurray, satisfaction with the quality of family life, and the residents evaluations of local services and facilities, would affect the degree of community stability. By 1979, the length of residence

had increased in Fort McMurray, when compared with that in 1969, during the second year of operations of Suncor. The increasing stability of the residence was reflected also in the people's intentions to remain in the community, and in the fact that these intentions were generally confirmed by their actual behaviour. In 1979, in contrast to the situation which existed in 1969, an increasing proportion of the population in Fort McMurray, was beginning to perceive the town as a place of permanent residence.

During the construction of Syncrude, horror stories abounded about the terrible effects of resource development on the quality of family life in Fort McMurray. Marital discord, family breakdown, marital infidelity, child abuse, loneliness, depression, alcohol and drug related problems, debt, and other family focussed social problems were reported frequently. While such reports originated for the most part, from people in the helping professions who were more exposed to social problems in general, they were nonetheless indicative of the unsatisfactory situation in Fort McMurray. By 1979, family breakdown and marital infidelity were still reported to be common by the residents. However, the quality of family life in the town, did not appear to have been negatively impacted by resource development activities if other factors were considered, such as the frequency of interactions between spouses, and between spouses and children. The high rating of the quality of their own family life by the residents who responded to the 1979 AOSERP survey, should not be treated as too reliable because of the cultural values which would attach a stigma of a "failure" to those admitting an unsatisfactory family life.

Between 1969 and 1979, the job satisfaction seemed to have also increased. While in 1969, longer-term residents reported less satisfaction with their jobs, the opposite was true in 1979. The longer a person had lived in Fort McMurray, the more satisfied they were with their employment. To the extent that job satisfaction would be conducive to the general satisfaction with life, the conditions appeared to have improved in Fort McMurray after the construction of Syncrude had ended.

Despite general improvement in the housing situation, the residents did not appear to be too satisfied with their housing in 1979. Single detached dwellings with more amenities were rated highest, as might have been expected of the urban population coming to live in the resource town. But factors external to dwellings were generally judged to be of poor quality, and over one-third of the sample reported poor housing.

In 1979, in contrast to the situation which existed during the construction of Syncrude, the residents of Fort McMurray were not particularly dissatisfied with community services and facilities. They evaluated most negatively the design and maintenance of streets and sidewalks, and flood control and animal control. Health and social services were considered now to be relatively satisfactory. The most highly rated services included telephone, police protection, fire protection, shopping and schools. Evidently, though much room was still left for further improvements, the level of provision and the quality of community amenities in Fort McMurray had increased considerably.

Because of the magnitude and multitude of all the socio-economic changes, Fort McMurray could have been expected to experience a considerable lack of community stability during the development of the oil sands projects. This observation was confirmed by the 1969 survey conducted by Matthiasson (1970;1971), and by the 1979 survey conducted by the Human System of AOSERP (Gartrell et al 1980). Even though in 1979, the community stability was greater than in 1969, it was still very low when compared to such a city as Edmonton. Neither of those two surveys however, had produced conclusive evidence about the extent of population turnover or the degree of community stability in Fort McMurray.

10.4 SUMMARY

Commercial exploitation of the Athabasca Oil Sands culminated in the establishment in the region, of massive and technologically modern oil sands industry, and in the emergence of Fort McMurray as the eighth largest urban settlement in Alberta. The development of Suncor had transformed Fort McMurray in the 1960s from a small northern community into a resource town. The development of Syncrude had expanded that town into a major and highly urbanized regional centre. With both Suncor and Syncrude operational, when Fort McMurray became a city in 1980, little trace could be found of the community that had existed two decades ago.

It would be difficult to ascertain on the basis of available data exactly what happened to the original 1200 inhabitants of Fort McMurray. Given the low level of education in the community in 1961, people who were older would not have much chance to benefit from the development in the long run, unless they owned land property. In 1971, the labour force participation rate among older people (between 55 and 64 years of age) and among those with less than Grade 12 education was higher in Fort McMurray than in Alberta, because of the shortage of labour. But during the Syncrude construction "boom", the high rate of local inflation had forced some of the older people on fixed incomes to leave Fort McMurray. By 1979, those over 44 years of age and those who had lived in the town prior to the construction of Syncrude, had somewhat lower incomes than the more recent arrivals. Low average incomes were also found among single parents and Native people. However, considering that in 1961, over 51% of the residents in Fort McMurray was younger than 20, many of the youths might have successfully integrated into the industrial labour force, provided they acquired the necessary education and skills.

At the same time, despite numerous difficulties which contributed to an uneven and occasionally turbulent development of Fort McMurray, the story of its urbanization has been in many respects, a success story. Clearly, enormous obstacles had to be overcome during the industrial and town construction stages, during

which housing and community amenities lagged behind the demand created by the rapidly growing population. The oil sands industry brought to Fort McMurray a highly skilled and well educated labour force, and -- for its size -- the community had a higher general level of education by 1976, than any comparable community in Alberta. In 1979, though much room was still left for further improvements, the quality of urban development in Fort McMurray was, by and large, commensurate with the requirements and expectations of the new residents. As a city, Fort McMurray has become one of the most attractive urban settlements in northern Alberta.

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