

A COMPENDIUM  
OF SOCIO-ECONOMIC STATISTICS  
FOR THE  
AOSERP STUDY AREA  
SINCE 1961

by  
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PREPARED FOR ALBERTA  
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TABLE OF CONTENTS

	Page
LIST OF TABLES .....	v - xiii
LIST OF FIGURES .....	xiv
ABSTRACT .....	xv
ACKNOWLEDGEMENTS .....	xvi
1. INTRODUCTION .....	1
1.1 Purpose .....	1
1.2 Background .....	1
1.2.1 AOSERP Study Area Boundary and Communities .....	1 - 3
1.2.2 Oil Sands Development in the Study Area .....	3 - 4
1.3 Outline of the Report .....	4 - 6
2. DATA SOURCES AND RESEARCH METHODS .....	7
2.1 Introduction .....	7
2.2 Data Sources .....	7
2.2.1 Statistics Canada Data Sources .....	7
2.2.1.1 Census Data .....	7 - 9
2.2.1.2 Non-Census Data .....	9 - 10
2.2.1.3 Maps .....	10 - 11
2.2.2 Other Data Sources .....	11
2.2.3 Overview of Major Geostatistical Units .....	11
2.2.3.1 Geographical Townships .....	12
2.2.3.2 Enumeration Areas .....	12 - 13
2.2.3.3 Census Subdivisions .....	13 - 14
2.2.3.4 Census Divisions .....	14
2.2.3.5 Federal Electoral Districts .....	14 - 15
2.3 Research Methods .....	15
2.3.1 Comparability of Geostatistical Units .....	15
2.3.1.1 Relevant Geostatistical Units .....	15 - 17
2.3.1.2 1961 Census .....	17 - 19
2.3.1.3 1966 Census .....	19 - 22
2.3.1.4 1971 Census .....	22 - 24
2.3.1.5 1976 Census .....	24 - 26
2.3.1.6 Summary .....	26 - 28
2.3.2 Comparison and 'Norming' of Data .....	28 - 31
2.4 Discrepancies in Data from Different Sources .....	31
2.4.1 Introduction .....	31
2.4.2 Definition of Population .....	31 - 33
2.4.3 Absent Residents .....	33 - 34
2.4.4 Time of Enumeration .....	35
2.4.5 Judgemental Variation .....	35

TABLE OF CONTENTS (CONTINUED)

	Page
3. POPULATION .....	36
3.1 Introduction .....	36
3.2 Population Trends Since 1941 .....	36
3.2.1 AOSERP Study Area .....	36 - 37
3.2.2 Fort McMurray .....	37 - 38
3.2.3 Fort Chipewyan .....	38 - 39
3.2.4 Fort Mackay .....	39 - 40
3.2.5 Anzac .....	40 - 41
3.2.6 Surrounding AOSERP Study Area .....	41 - 42
3.3 Demographic Trends Since 1961 .....	42
3.3.1 Fort McMurray .....	42 - 49
3.3.2 Fort Chipewyan .....	49 - 51
3.3.3 Anzac, Fort Mackay and Surrounding Area ..	51 - 52
4. FAMILIES .....	81
4.1 Introduction .....	81
4.2 Fort McMurray .....	81
4.3 Fort Chipewyan .....	82 - 83
4.4 Anzac, Fort Mackay, and Surrounding Area ...	83 - 84
5. HOUSEHOLDS .....	105
5.1 Introduction .....	105
5.2 Fort McMurray .....	105 - 106
5.3 Fort Chipewyan .....	107
5.4 Anzac, Fort Mackay, and Surrounding Area ...	108
6. LABOUR FORCE AND EMPLOYMENT .....	123
6.1 Introduction .....	123
6.2 Fort McMurray .....	123 - 128
6.3 Fort Chipewyan .....	128 - 129
6.4 Anzac, Fort Mackay, and Surrounding Area ...	129 - 131
7. HOUSING .....	151
7.1 Introduction .....	151
7.2 Fort McMurray .....	151 - 155
7.3 Fort Chipewyan .....	155 - 156
7.4 Anzac, Fort Mackay, and Surrounding Area ...	156 - 157
8. SOCIAL PATTERNS, SERVICES AND INFRASTRUCTURE	173
8.1 Introduction .....	173
8.2 Retail, Business Service, and Manufacturing Activity .....	173 - 175
8.3 Social Services and Facilities .....	176 - 180
8.4 Reported Crimes and Offences .....	180 - 183
8.5 Transportation Infrastructure and Activity ..	183 - 189

TABLE OF CONTENTS (CONCLUDED)

	Page
9. CONCLUSIONS AND RECOMMENDATIONS .....	227
9.1 Introduction .....	227
9.2 Impact of Oil Sands Development .....	227
9.2.1 Stages of Resource Community Development .	227 - 232
9.2.2 Population .....	233 - 235
9.2.3 Families .....	235 - 236
9.2.4 Households .....	236 - 237
9.2.5 Labour Force and Employment .....	237 - 239
9.2.6 Housing .....	239 - 240
9.2.7 Social Patterns, Services and Infrastructure .....	241 - 245
9.3 Recommendations .....	245 - 247
10. REFERENCES CITED .....	248 - 250



LIST OF TABLES

	Page
1. Alberta Oil Sands Environmental Program Study Area: Locations by Enumeration Area (EA) and Federal Electoral District (FED) for Census Years 1961 to 1976 .....	27
2. Anzac, Fort Mackay, and Surrounding Area: Comparison of Population from Township Estimates with Population from Enumeration Area Estimates for Census Years 1961 to 1976 .....	29
3. Alberta Oil Sands Environmental Research Program Study Area: Population by Location for Selected Years .....	53
4. Surrounding AOSERP Study Area: Population by Township and Range for Selected Years .....	54
5. Fort McMurray and Alberta: Population and Population Estimates for Selected Years .....	55
6. Fort McMurray: Population by Age Groups for Selected Years .....	56
7. Fort McMurray: Males per 100 Females by Age Groups for Selected Years .....	57
8. Fort McMurray and Alberta: Live Births for Selected Years .....	58
9. Fort McMurray and Alberta: Deaths for Selected Years .....	59
10. Fort McMurray and Alberta: Infant Deaths for Selected Years .....	60
11. Fort McMurray and Alberta: Sources of Population Increase for Selected Years .....	61
12. Fort McMurray: Population by Marital Status for Selected Years .....	62
13. Fort McMurray and Alberta: Marriages for Selected Years .....	63
14. Fort McMurray: Population by Mother Tongue for Selected Years .....	64

LIST OF TABLES (CONTINUED)

	Page
15. Fort McMurray: Population by Ethnic Group for Selected Years .....	65
16. Fort McMurray: Population by Religion for Selected Years .....	66
17. Fort McMurray and Alberta: Specified Population Groups by Level of Schooling and Sex for Selected Years .....	67
18. Fort McMurray and Alberta: Population 15 Years and Over by Level of Schooling and Age, 1976 ..	68
19. Fort McMurray: Population by Previous Place of Residence for Selected Years .....	69
20. Fort McMurray and Alberta: Population 15 Years and Over by Mobility Status and Sex, 1976 .....	70
21. Fort Chipewyan: Population by Age Groups for Selected Years .....	71
22. Fort Chipewyan: Males per 100 Females by Age Groups for Selected Years .....	72
23. Fort Chipewyan: Population by Marital Status and Sex for Selected Years .....	73
24. Fort Chipewyan: Population by Mother Tongue and Sex for Selected Years .....	74
25. Fort Chipewyan and Alberta: Specified Population Groups by Level of Schooling and Sex for Selected Years .....	75
26. Anzac, Fort Mackay, and Surrounding Area: Population by Age Groups for Selected Years ...	76
27. Anzac, Fort Mackay, and Surrounding Area: Males per 100 Females by Age Groups for Selected Years .....	77
28. Anzac, Fort Mackay, and Surrounding Area: Population by Marital Status and Sex for Selected Years .....	78
29. Anzac, Fort Mackay, and Surrounding Area: Population by Mother Tongue and Sex for Selected Years .....	79

LIST OF TABLES (CONTINUED)

	Page
30. Anzac, Fort Mackay, and Surrounding Area: Specified Population Groups by Level of Schooling and Sex for Selected Years .....	80
31. Fort McMurray: Families by Type for Selected Years .....	85
32. Fort McMurray: Families by Number of Persons for Selected Years .....	86
33. Fort McMurray: Families by Age of Head for Selected Years .....	87
34. Fort McMurray: Families by Marital Status of Head for Selected Years .....	88
35. Fort McMurray: Families by Number of Children (0-24 Years) Living at Home for Selected Years ..	89
36. Fort McMurray: Unmarried Children 0-24 Years in Families by Age for Selected Years .....	90
37. Fort McMurray: Families by Age Groups of Child- ren 0-24 Years at Home for Selected Years .....	91
38. Fort McMurray: Non-Family Persons by Household Relationship and Sex for Selected Years .....	92
39. Fort Chipewyan: Families by Type for Selected Years .....	93
40. Fort Chipewyan: Families by Number of Persons for Selected Years .....	94
41. Fort Chipewyan: Families by Age of Head for Selected Years .....	95
42. Fort Chipewyan: Families by Marital Status of Head for Selected Years .....	96
43. Fort Chipewyan: Families by Number of Children 0-24 Years for Selected Years .....	97
44. Fort Chipewyan: Families by Age Groups of Children 0-24 Years at Home for Selected Years ..	98
45. Anzac, Fort Mackay, and Surrounding Area: Families by Type for Selected Years .....	99

LIST OF TABLES (CONTINUED)

	Page
46. Anzac, Fort Mackay, and Surrounding Area: Families by Number of Persons for Selected Years .....	100
47. Anzac, Fort Mackay, and Surrounding Area: Families by Age of Head for Selected Years .....	101
48. Anzac, Fort Mackay, and Surrounding Area: Families by Marital Status of Head for Selected Years .....	102
49. Anzac, Fort Mackay, and Surrounding Area: Families by Number of Children 0-24 Years for Selected Years .....	103
50. Anzac, Fort Mackay, and Surrounding Area: Families by Age Groups of Children 0-24 Years at Home for Selected Years .....	104
51. Fort McMurray: Households by Type for Selected Years .....	109
52. Fort McMurray: Households by Number of Families for Selected Years .....	110
53. Fort McMurray: Households by Number of Persons for Selected Years .....	111
54. Fort McMurray: Households by Number of Non- Family Persons for Selected Years .....	112
55. Fort McMurray: Households by Age of Head for Selected Years .....	113
56. Fort McMurray: Households by Marital Status of Head for Selected Years .....	114
57. Fort Chipewyan: Households by Type for Selected Years .....	115
58. Fort Chipewyan: Households by Number of Families for Selected Years .....	116
59. Fort Chipewyan: Households by Number of Persons for Selected Years .....	117
60. Fort Chipewyan: Households by Number of Lodgers for Selected Years .....	118

LIST OF TABLES (CONTINUED)

	Page
61. Anzac, Fort Mackay, and Surrounding Area: Households by Type for Selected Years .....	119
62. Anzac, Fort Mackay, and Surrounding Area: Households by Number of Families for Selected Years .....	120
63. Anzac, Fort Mackay, and Surrounding Area: Households by Number of Persons for Selected Years .....	121
64. Anzac, Fort Mackay, and Surrounding Area: Households by Number of Lodgers for Selected Years .....	122
65. Fort McMurray: Population 15 Years and Over by Labour Force Activity by Sex for Selected Years .	132
66. Fort McMurray and Alberta: Population 15 Years and Over by Labour Force Activity and Age, 1971 .	133
67. Fort McMurray and Alberta: Population 15 Years and Over by Labour Force Activity and Age, 1976	134
68. Fort McMurray and Alberta: Population 15 Years and Over by Labour Force Activity and Level of Schooling, 1971 .....	135
69. Fort McMurray and Alberta: Population 15 Years and Over by Labour Force Activity and Level of Schooling, 1976 .....	136
70. Fort McMurray and Alberta: Population 15 Years and Over by Labour Force Activity and Mobility Status, 1976 .....	137
71. Fort McMurray: Population 15 Years and Over Experienced in Labour Force by Class of Worker and Sex for Selected Years .....	138
72. Fort McMurray: Employed Labour Force by Industry for Selected Years .....	139
73. Fort McMurray: Experienced Labour Force by Occupation for Selected Years .....	140

LIST OF TABLES (CONTINUED)

	Page
74. Fort McMurray and Alberta: Population 15 Years and Over by Wage and Salary Income Level Based Upon Earnings During the 12 Months Prior to June 1, 1961 by Sex .....	141
75. Fort McMurray and Alberta: Population 15 Years and Over by Employment Income and Total Income Level in 1970 by Sex .....	142
76. Fort McMurray and Alberta: Income and Taxation Statistics for Selected Years .....	143
77. Fort Chipewyan and Alberta: Population 15 Years and Over by Labour Force Activity and Sex, 1976 .	144
78. Fort Chipewyan and Alberta: Population 15 Years and Over by Labour Force Activity and Age, 1976 .	145
79. Fort Chipewyan and Alberta: Population 15 Years and Over by Employment Income and Total Income Level in 1970 by Sex .....	146
80. Anzac, Fort Mackay and Surrounding Area and Alberta: Population 15 Years and Over by Labour Force Activity and Sex, 1976 .....	147
81. Anzac, Fort Mackay and Surrounding Area and Alberta: Population 15 Years and Over by Labour Force Activity and Age, 1976 .....	148
82. Anzac, Fort Mackay and Surrounding Area and Alberta: Population 15 Years and Over by Employment Income and Total Income Level in 1970 by Sex .....	149
83. Outlying Settlements and Alberta: Income and Taxation Statistics for Selected Years .....	150
84. Fort McMurray: Occupied Private Dwellings by Type for Selected Years .....	158
85. Fort McMurray and Alberta: Occupied Private Dwellings by Tenure for Selected Years .....	159
86. Fort McMurray and Alberta: Occupied Private Dwellings by Type and Tenure for Selected Years .	160

LIST OF TABLES (CONTINUED)

	Page
87. Fort McMurray and Alberta: Occupied Private Dwellings by Period of Construction for Selected Years .....	161
88. Fort McMurray: Number of Dwelling Units Proposed in Building Permits Issued for Selected Years ..	162
89. Fort McMurray: Estimated Value of Construction from Building Permits Issued for Selected Years	163
90. Fort McMurray and Alberta: Occupied Private Dwellings by Water Supply, Bath and Toilet Facilities for Selected Years .....	164
91. Fort McMurray: Number of Rooms per Dwelling for Selected Years .....	165
92. Fort McMurray and Alberta: Occupied Private Dwellings by Persons per Room for Selected Years	166
93. Fort Chipewyan: Occupied Private Dwellings by Type for Selected Years .....	167
94. Fort Chipewyan and Alberta: Occupied Private Dwellings by Tenure for Selected Years .....	168
95. Fort Chipewyan and Alberta: Occupied Private Dwellings by Type and Tenure for Selected Years	169
96. Anzac, Fort Mackay, and Surrounding Area: Occupied Private Dwellings by Type for Selected Years .....	170
97. Anzac, Fort Mackay, and Surrounding Area: Occupied Private Dwellings by Tenure for Selected Years .....	171
98. Anzac, Fort Mackay, and Surrounding Area: Occupied Private Dwellings by Type and Tenure for Selected Years .....	172
99. Fort McMurray: Distribution of Sales by Retail Business Group for Selected Years .....	190
100. Fort McMurray: Retail Business Groups by Number of Outlets for Selected Years .....	191

LIST OF TABLES (CONTINUED)

	Page
101. Fort McMurray: Business Service Statistics for Selected Years .....	192
102. Fort McMurray and Alberta: Retail and Business Service Groups by Value of Sales, 1976 .....	193
103. Fort McMurray: Manufacturing Statistics for Selected Years .....	194
104. Fort McMurray: Police Personnel by Type and Sex and Police Automobiles for Selected Years .....	195
105. Fort McMurray: Hospital Service Statistics for Selected Years .....	196
106. Fort McMurray Regional Office: Number of Public Assistance Caseloads for Selected Months and Years .....	197
107. Fort McMurray: Public Library Statistics for Selected Years .....	198
108. Fort McMurray: Student Enrollments by Grade Levels and School System for Selected Years ....	199
109. Fort McMurray: Government Employees by Level of Government for Selected Years .....	200
110. Fort McMurray: Number of Telephones by Type for Selected Years .....	201
111. Fort Chipewyan: Number of Telephones by Type for Selected Years .....	202
112. Fort McMurray: Major Recreational and Cultural Facilities by Type for Selected Years .....	203
113. Fort McMurray and Alberta: Liquor Sales for Selected Years .....	204
114. Fort McMurray and Alberta: Beer Sales for Selected Years .....	205
115. Fort McMurray and Alberta: Total Crime Offences for Selected Years .....	206
116. Fort McMurray and Alberta: Criminal Code Offences for Selected Years .....	207



LIST OF TABLES (CONCLUDED)

	Page
117. Fort McMurray and Alberta: Criminal Code Offence Rates by Type for Selected Years .....	208
118. Fort McMurray: Number of Persons Charged Under Criminal Code by Age Group and Sex for Selected Years .....	209
119. Fort McMurray and Alberta: Federal Statutes Offences for Selected Years .....	210
120. Fort McMurray and Alberta: Provincial Statute Offences for Selected Years .....	211
121. Fort McMurray and Alberta: Municipal By-Law Offences for Selected Years .....	212
122. Fort McMurray: Municipal Land Area and Public Thoroughfares for Selected Years .....	213
123. Fort McMurray: Motor Vehicle Registrations by by Type of Vehicle for Selected Years .....	214
124. Fort McMurray: Traffic Accidents by Type for Selected Years .....	215
125. Fort McMurray: Traffic Fatalities and Injuries for Selected Years .....	216
126. Fort McMurray Airport: Inbound Passengers by Area of Departure for Selected Years .....	217 & 218
127. Fort McMurray Airport: Outbound Passengers by Area of Final Destination for Selected Years ...	219 & 220
128. Fort McMurray Airport: Inbound Passengers by Most Travelled Centres for Selected Years .....	221
129. Fort McMurray Airport: Outbound Passengers by Most Travelled Centres for Selected Years .....	222
130. Fort Chipewyan Airport: Inbound Passengers by Area of Departure Including Most Travelled Centres in Canada for Selected Years .....	223 & 224
131. Fort Chipewyan Airport: Outbound Passengers by Area of Final Destination Including Most Travel- led Centres in Canada for Selected Years .....	225 & 226

LIST OF FIGURES

	Page
1. The AOSERP Study Area .....	2
2. Estimated Enumeration Areas: 1961 .....	18
3. Enumeration Areas: 1966 .....	20
4. Enumeration Areas: 1971 .....	23
5. Enumeration Areas: 1976 .....	25
6. Transportation Infrastructure .....	184

ABSTRACT

The central objective of the study entitled "A Compendium of Socio-Economic Statistics for the Athabasca Oil Sands Region" was to assemble data that would facilitate an understanding of the demographic and socio-economic impacts of oil sands development in the Fort McMurray area and, where possible, Fort Chipewyan, Fort Mackay and Anzac. A further requirement of the study was that these data, where possible, be taken back to 1961.

The requirements that the various types of socio-economic and demographic data be comparably measured over time, and the need to relate these data to specific geographical areas, has limited the types of data sources relevant to this study. In particular, we have found data from the Census of Canada, for the years 1961, 1966, 1971 and 1976, to be the most satisfactory means of meeting these requirements of temporal and geographical continuity. Even so, these data have required various standardization procedures. Where possible, census data have been augmented with data obtained from other sources.

The socio-economic and demographic data presented in this report have been organized into a number of major areas including overall population patterns, family and household patterns, labour force characteristics of the relevant population, housing patterns, and material pertaining to social services and infrastructure in the area.

#### ACKNOWLEDGEMENTS

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I would also like to thank Ms. Barbara M. Kasinska, Alberta Oil Sands Environmental Research Program (Human System) Research Manager, for various helpful comments relating to study design and execution.

## 1. INTRODUCTION

### 1.1 PURPOSE

This research project was commissioned in June 1979 to provide a systematic compilation of the statistical data on the demographic and socioeconomic conditions in the AOSERP Study Area from 1961 to the present (1979). Based upon this statistical material, and supplemented by qualitative information, a further objective is to interpret the demographic and socioeconomic trends in Fort McMurray, Fort Chipewyan, Fort Mackay, and Anzac, particularly with respect to the impacts of oil sands development. Finally, the report has been assigned with the task of identifying planning and programming strategies appropriate for delivery in future oil sands development areas. Each of these objectives has been met in this report.

### 1.2 BACKGROUND

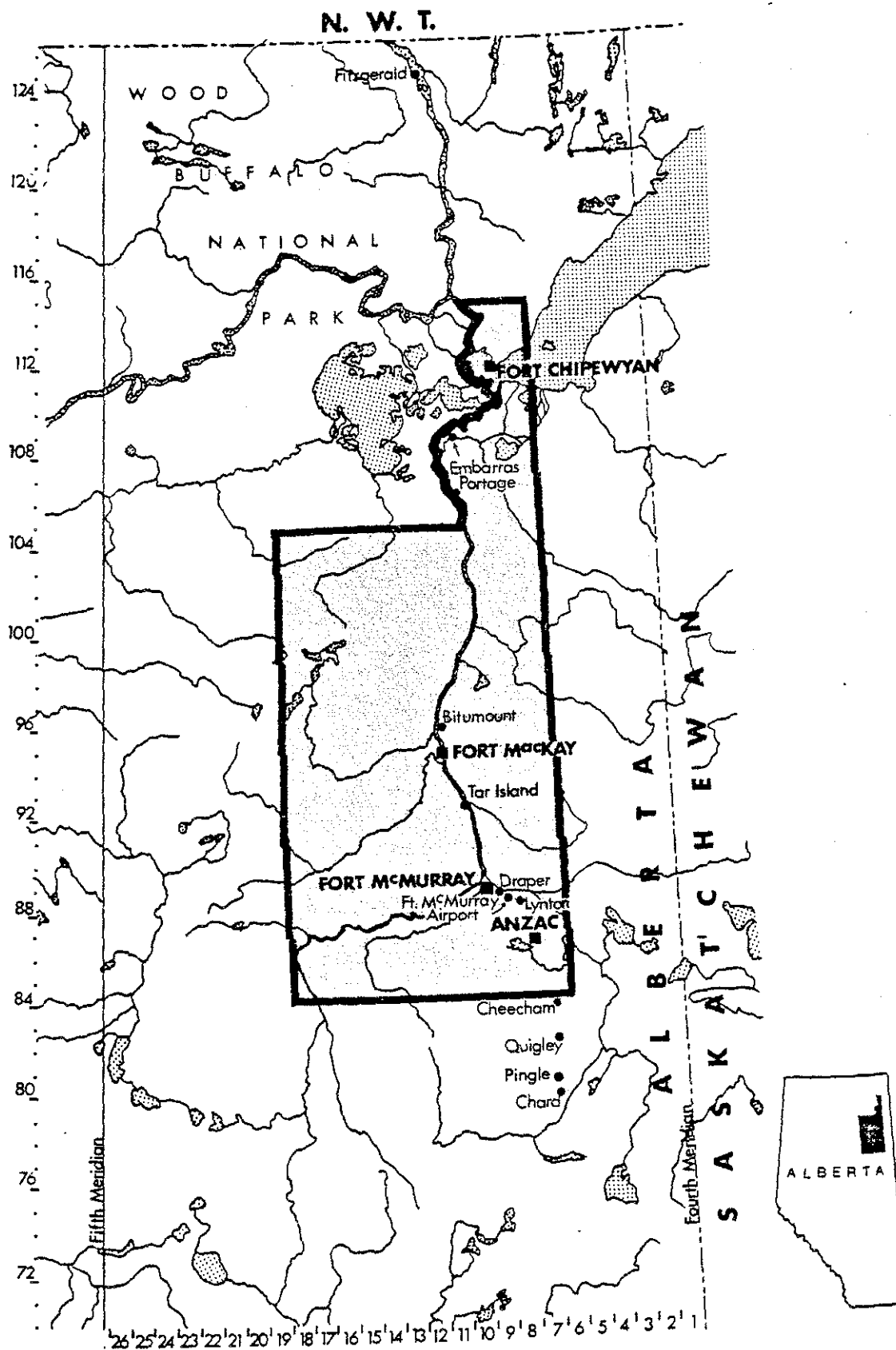
#### 1.2.1 AOSERP Study Area Boundary and Communities

As illustrated in Figure 1, the AOSERP Study Area encompasses all townships west of the fourth meridian between the sixth and eighteenth ranges, inclusive, and between Township 84 and Township 115, inclusive, except the area of Wood Buffalo National Park. Within this perimeter are four major communities: Fort McMurray, Fort Chipewyan, Fort Mackay, and Anzac. Fort McMurray, by far the largest settlement with a 1979 population of 26,000, is located at the confluence of the Clearwater and Athabasca Rivers in Township 89 between Range 9 and Range 10. The community is approximately 450 km northeast of Edmonton.

About 225 km north of Fort McMurray is Fort Chipewyan. Although this is the oldest European settlement in Alberta - its history extends back to 1788 - it is not incorporated. Yet, this locality is presently second largest in the study area with a

Figure 1.

## AOSERP Study Area



1976 population of almost 1,200. Fort Chipewyan is situated on Goose Cape on the shores of Lake Athabasca just a few kilometers east of Wood Buffalo National Park. In terms of geographical townships, the settlement is located in Township 112, west of the fourth meridian in the seventh range.

Anzac, also an unincorporated settlement, is located on the southeast shore of Gregoire Lake, south of Fort McMurray. There were 138 people living in Anzac in 1976, consisting mostly of Treaty Indians and Metis. The population in Anzac has fluctuated considerably over the past several decades. The community is situated in Township 86 in Range 7.

Like Anzac, Fort Mackay is inhabited mainly by Treaty Indians and Metis and has experienced some fluctuation in population. Statistics Canada sources report that this unincorporated community had a population of 169 in 1976. Fort Mackay is situated on the west bank of the Athabasca River about 10 km north of Fort McMurray within Township 94 in Range 11.

#### 1.2.2 Oil Sands Development in the Study Area

As has now been well documented, Fort McMurray - its population and infrastructure - has increased at an unprecedented rate over the past two decades because of the development of the two oil sands mega-projects in the area: Great Canadian Oil Sands Ltd. (GCOS, now Suncor) and Syncrude Canada Ltd.

Oil sands development is not new to the AOSERP Study Area. Between 1907 and 1912, for example, Fort McMurray experienced a boom period caused by oil sands speculation and land development and, in 1913, the Federal Department of Mines began surveying the oil sands deposits in the study area. The construction of the Alberta Great Waterways Railway (now Northern Alberta Railways) in 1921 renewed oil sands speculation and pioneer mining developments (Parker, 1976). By 1929, the Research Council of Alberta had been created and the first experimental oil sands separation plant was built at Waterways (near Fort McMurray) while speculators, such as

the Drapers, used the railway to ship oil sands south as paving material (Parker, 1979). Experimental oil sands plants at Bitumont and on the Horse River (Abasands) became operational during the 1930's. The Bitumont plant closed in 1944 because of technical difficulties, however, and the Abasands plant was destroyed by fire the following year (Parker, 1976).

While other oil sands projects have since developed in the AOSERP Study Area, none have been so large or have had so great an impact as GCOS and Syncrude. GCOS applied for a lease in 1960 in an area along the Athabasca River between Fort McMurray and Fort Mackay. Construction of the GCOS plant began in 1963 and was operational by 1967. Syncrude Canada Ltd. began construction in 1974 at Mildred Lake near GCOS and became operational in late 1978.

The Syncrude plant is about three times as large as GCOS in output capacity - about 125,000 barrels of oil daily, compared with approximately 45,000 barrels at GCOS (Smith, 1979) - and has had greater impact upon the people living in the AOSERP Study Area. The present work force at GCOS and Syncrude is approximately 1,700 and 2,700, respectively. (Syncrude, 1978).

### 1.3 OUTLINE OF THE REPORT

This report is delineated into nine chapters, including this Introduction. For Chapter 2 to Chapter 7 and Chapter 9, the statistical tables and analysis are categorized into three geostatistical areas: Fort McMurray, Fort Chipewyan, and an area which includes Fort Mackay, Anzac, and the "surrounding area" (i.e. the area within the AOSERP Study Area not elsewhere classified). For Chapter 8, the lack of relevant statistics on areas outside of Fort McMurray makes this analytical separation by community redundant.

The data sources consulted and the research methods applied in this report are discussed in Chapter 2. The chapter begins with an overview of the data sources used, then turns to an explanation of the geostatistical units of analysis used by the



major data sources. The historical comparability of the relevant geostatistical units within the AOSERP Study Area is presented, followed by a review of the methods of comparison and 'norming' of the data used in this report. Finally, in Chapter 2, the major causes of discrepancies that exist in different data sources are explained.

The population and other demographic trends are analysed in Chapter 3, beginning with an overview of the population changes in the AOSERP Study Area and the major communities within the area since 1941. Following this, the demographic shifts since 1961 and present characteristics of the three geostatistical areas are discussed. Specifically, this chapter includes statistics on population, vital statistics, ethnicity, religion, education, language, marital status, and migration. For reasons outlined in the next chapter, more of this information is available for Fort McMurray than for the other two areas.

Chapter 4 presents statistical material and analysis of the census families within the AOSERP Study Area, while Chapter 5 deals with census households.

In Chapter 6, the employment trends and characteristics of the labour force in the three geostatistical areas are examined. This includes a discussion of: the participation, employment, and unemployment rates for the population by age, education, and mobility; employment by occupation and industry; and the distribution of income. The dynamics and present characteristics of housing in the AOSERP Study Area are presented in Chapter 7.

Chapter 8 includes a variety of statistics relevant to the service and infrastructural development in the study area. Since most of this material is only available for Fort McMurray, this chapter is not delineated by geostatistical area. Instead, the chapter is divided into four major subject headings: retail; business service, and manufacturing activity; social services and infrastructure; reported crimes and offences; and transportation facilities and activity.

Finally, in Chapter 9, the major findings from the

previous chapters are integrated with the existing theory on the dynamics of resource communities. Based upon this analysis, we shall present a number of proposals for planning and programming strategy toward future oil sands development areas.

## 2. DATA SOURCES AND RESEARCH METHODS

### 2.1 INTRODUCTION

This chapter outlines the data sources consulted and research methods used to complete the statistical compendium on the communities of Fort McMurray, Fort Chipewyan, Anzac, Fort Mackay and the surrounding population in the AOSERP Study Area. This chapter begins with an overview of the data sources used, including Statistics Canada census and non-census material, Statistics Canada maps, information from provincial government departments and selected reports. An explanation of the geostatistical units of analysis used by most data sources is also presented.

In the section on research methods, we identify the historical compatibility of the relevant geostatistical units within the AOSERP Study Area. As well, a brief discussion is presented with respect to the methods of comparison and "norming" the data used in this report.

In the final section of this chapter, we review some of the discrepancies that exist in the data sources and offer possible explanations for them.

### 2.2 DATA SOURCES

#### 2.2.1 Statistics Canada Data Sources

2.2.1.1 Census Data. Although Statistics Canada is involved in several types of research activity, it is primarily known for its responsibility in the administration of the quinquennial and decennial censuses of Canada. For the purpose of this report, the last four censuses - in 1961, 1966, 1971 and 1976 - are the most relevant. In addition, census data available at the enumeration area and census subdivision levels of geostatistical aggregation are most valuable for reasons outlined later in this chapter.

Census information is available in both published and unpublished form and is prepared up to four years following the census for public use. Published tables and related census documents are available in book form through retail outlets, but usually only include data above the enumeration area geostatistical level of analysis. Moreover, published data sources only include the more commonly used census statistics, often in condensed categories.

Unpublished census tables have been stored onto microfilm up to the 1971 census and onto microfiche for the 1976 census (and, presumably, future censuses). Typically, unpublished material is more detailed than the published documents and presents more information at the smaller geostatistical units of analysis. For example, information available at the enumeration area level (the smallest unit for census data tabulation) is only available from the microfilm or microfiche sources.

Although the more recent microfilms and microfiche have been made available for purchase by the public, the lack of necessary display equipment and the relatively high price of microfiche have hindered their dissemination. Even at most regional offices of Statistics Canada, this material is only available for 1971 and 1976. Since most of the information we required from Statistics Canada was found at the enumeration level, much dependence was placed upon access to this unpublished material. It was therefore necessary to directly contact the main User Services Section of Statistics Canada in Ottawa where complete sets of the unpublished microsources extend back several decades.

Most census material - both published and unpublished - is grouped into four types: population, family, household and housing. Population statistics include the socio-economic characteristics of individuals on census day, grouped by the geographical area (i.e. the enumeration area) in which they permanently live in Canada.

A second category - the census family - includes data on their characteristics including the relationships of individuals within the group. There are three definitions of census family: a husband and wife with or without unmarried children, a lone parent with one or more unmarried children, or a man or women living with a guardianship of a child or ward under 21 years (for whom no pay was received). In each case, the people must be living in the same dwelling. A family person is an individual living in any one of the three situations described above while a non-family person refers to an individual living alone, living with unrelated individuals (e.g. as a lodger), or living with relatives other than in the situations described above (e.g. a married son living with parent with no wife or children present).

A census household - the third category of census data - refers to a person or group of persons occupying one dwelling. While it usually consists of a family group (with or without lodgers), it may also consist of two or more families sharing a dwelling, a group of unrelated persons sharing a dwelling, or one person living alone.

Finally, census information is available on housing for a given geostatistical unit. In particular, the census looks at dwellings. A dwelling refers to a structurally separate set of living quarters with a private entrance from outside or from a common hallway or stairway inside the building. For example, an entrance cannot be through someone else's living quarters. The information on census dwellings presented in this report refers specifically to occupied private dwellings. Occupied private dwellings are those dwellings in which one person, a family, or other small groups of individuals permanently reside on census day (such as in a single house, apartment, etc.)

2.2.1.2 Non-Census Data. As well as census data, Statistics Canada is responsible for the collection and dissemination of non-census information on the social, economic, financial, and commercial aspects of Canada. As with census data in published form, only a

very small percentage of the data available from non-census publications includes material at the small geostatistical units of analysis required for this report (i.e. enumeration area and census subdivision levels). Even where information on municipalities (a type of census subdivision) exists, non-census publications often include only those communities above a given population.

Although Statistics Canada makes every effort to use the same geostatistical units of analysis as in the census for its non-census documentation, this is not always possible. For example, crime statistics are based upon information submitted by various law enforcement agencies and their respective government departments throughout Canada to Statistics Canada. These agencies report information on jurisdictions which, for various reasons, may differ from the geostatistical units developed by Statistics Canada. Fortunately, this only occurs in a few circumstances since most geographical boundaries (such as municipalities) are universally recognized.

In some non-census publications, the geographical area which the data represents is not well defined. The figures may reflect market areas serviced by businesses, institutions or government departments. For example, motor vehicle registration data characterize an unspecified area around each government office responsible for registration and not strictly the municipality (such as Fort McMurray) where that government department is located. In other cases, statistical information reflects the use of a particular facility or service such as an airport.

2.2.1.3 Maps. Extensive use has been made of the maps available from Statistics Canada representing the northeastern portion of Alberta which includes the AOSERP Study Area. For each census, Statistics Canada calls upon the Federal Department of Energy, Mines and Resources to prepare a set of maps outlining the perimeters of the geostatistical units across Canada. Because the perimeters for many of these units - such as enumeration areas - may change from census to census, the maps are useful in determining the

comparability of the various units of census data over the four censuses central to this report.

#### 2.2.2 Other Data Sources

Although Statistics Canada is the primary source of information for this compendium of socioeconomic statistics, it has also been possible to collect information from a number of other agencies. In particular, various departments in the Alberta government which offer data relevant to the AOSERP Study Area were solicited. The Alberta Bureau of Statistics, for example, publishes several documents on an annual basis which provide more disaggregated information on selected variables than is available through Statistics Canada. Statistical appendices to the annual reports of selected Alberta government departments have also been consulted (e.g. Alberta Education's Annual Report).

Finally, we have reviewed numerous reports published through the Human Environment Division of the Alberta Oil Sands Environmental Research Program, as well as the Northeast Alberta Region Commission, and the oil companies involved in oil sands exploration and development.

#### 2.2.3 Overview of Major Geostatistical Units

Because Statistics Canada data is primarily used in this study, it is important to discuss the geostatistical boundaries (i.e. those geographical units around which statistical data are aggregated) used by that department and by several other information-collecting agencies. Five basic types of geostatistical areas are noteworthy here: geographical townships, enumeration areas, census subdivisions, census divisions, and federal electoral districts. Among these, enumeration areas and census subdivisions have been used most extensively in the collection of data for this compendium.

2.2.3.1 Geographical Townships. The smallest geostatistical unit about which information is available is the geographical township. Following each census, Statistics Canada releases a document listing each geographical township and the population of its unorganized parts. That is, the number of people residing within a given township but outside of a community with legal corporate status (or an Indian Reservation) is stated. An extremely efficient delineation called the Meridian Township Range System, has been employed in the Prairie Provinces. This system divides a province into surveyed areas measuring 36 square miles (93.2 square kilometres) each. Unlike many other geographical areas upon which statistical information is based, geographical townships do not change dimensions over time. Thus, we are able to present population data which is quite comparable, geographically, from census to census except where the boundaries of incorporated places change to exclude or include more people in their population. Furthermore, the minute area of this type of geostatistical unit enables the demographer to approximate the population of a specific area (such as the AOSERP Study Area) which is not exactly compatible to standard geostatistical units.

Less fortunate is the fact that only population counts are available at the geographical township level. Because of its advantages, however, these population counts are used in the next section to determine the historical comparability of larger geostatistical units from which more information is available on the relevant area .

2.2.3.2 Enumeration Areas. The next largest geostatistical unit - the enumeration area (EA) - represents the spatial unit canvassed by one Census Representative. Thus, it may be referred to as the basic geographical unit of census data collection and the "building block" for larger geostatistical levels of analysis.

The EA is defined by several criteria which require Statistics Canada to change the geographical boundaries of these



units from one census to another. For example, the following criteria were used in the creation of the EAs for the 1976 census: (1) an enumeration area may include as many as 375 households, depending on its location; (2) an enumeration area always includes fewer than 100 farms; (3) an enumeration area never cuts across any other geostatistical unit recognized by the census; (4) enumeration boundaries are such that the Census Representative will be able to locate them without difficulty as, for example, streets, roads, railways, rivers and lakes.

Because of shifts in population and changes in larger geostatistical unit boundaries, EAs change both their geographical boundaries and identification numbers from census to census. While comparable EAs can be identified by means of conversion tables available from Statistics Canada (beginning with the comparison of 1966 and 1971 EAs), these conversions usually involve undesirable aggregations of EAs. Over a period of several censuses these conversions would, in fact, alter the comparable EAs or group of EAs such that a researcher would have to study data representing an area that is much larger than desired if he or she wishes to maintain perfect areal continuity. Some compromise may be necessary if we are to use the information available at the enumeration area level and, yet, maintain the size of the area of data collection and analysis approximately within the AOSERP Study Area boundary.

2.2.3.3 Census Subdivisions. A larger geostatistical unit is the census subdivision which includes municipalities (incorporated communities), Indian Reserves, unorganized territories, and certain geographical areas delineated by Statistics Canada in co-operation with provincial governments where the nature of municipal organization warrants the creation of a census subdivision. Necessarily, a census subdivision includes two or more EAs entirely within its boundaries. Moreover, a census subdivision may change its boundaries from census to census based upon such determinants as

the geographical annexation of a surrounding area for an expanding municipality or changes in the boundaries of even larger geostatistical areas such as census divisions.

For various reasons, including confidentiality, more information is available at the census subdivision level than at the EA level. Not only does Statistics Canada provide more variables and more detail on these variables at this level, other information-collecting agencies present more statistical material at the census subdivision level, particularly where it represents a municipality.

2.2.3.4. Census Divisions. A census division in Alberta (and the other Prairie Provinces) refers to a geostatistical area that has been created as an equivalent to a county (which exists, for example, in Ontario). Because it tends to approximate an administratively functional region, a census division rarely shifts its boundaries, although this has occurred in some provinces. A great deal of information from Statistics Canada and similar agencies (such as the Alberta Bureau of Statistics) is available at the census division level. Unfortunately, Census Division 12, which represents Northeastern Alberta, is far too large for precise analysis of the Study Area. For instance, this census division extends from the Northwest Territories in the north to below the municipality of St. Paul in the south. Therefore, it will not be extensively used as a level of statistical aggregation in this report.

2.2.3.5 Federal Electoral Districts. Federal Electoral Districts refers to those territorial units entitled to return a member to serve in the House of Commons. Although limited information is aggregated around these geostatistical units, they are often used to group EA level data in Statistics Canada tables. For example, the microfiche for 1976 EA data relevant to this study refers to province 48 (Alberta) and FED001 (the federal electoral district containing the AOSERP Study Area). In comparison, census subdivision

data tend to be categorized by census division because FED boundaries occasionally cut through municipalities and other census subdivisions in order to maintain fair representation of the population in federal government.

## 2.3 RESEARCH METHODS

### 2.3.1 Comparability of Geostatistic Units.

2.3.1.1 Relevant Geostatistical Units. Because the AOSERP Study Area comprises a small geographical area relative to the area covered by most geostatistical units, only information from the smallest census areas - enumeration areas and census subdivisions - will be extensively used. With respect to census subdivisions, only two cover most of the study area. Only the census subdivision representing the municipality of Fort McMurray will be used, however, because of its precision in characterizing the inhabitants and infrastructure of this community over the past decades. The other major census subdivision - Improvement District (ID) 18 (formerly ID 143) - will be excluded as a level of statistical presentation because its boundary extends well beyond the AOSERP Study Area. Moreover, the extent of its coverage within the study area is too large for our purposes.

While there are several Indian Reservations within the AOSERP Study Area, it is not possible to present accurate information about them because Statistics Canada has aggregated the data from these communities with the others in Census Division 12. The number of Treaty Indians living on the Reservations within the study area is relatively small. According to the 1976 Census of Canada, 4,240 Treaty Indians live on Indian Reservations in Census Division 12. Because of the large size of the Reservation lying outside (particularly south) of the AOSERP Study Area, the number of Treaty Indians living on Indian Reservations within the study area is estimated to be less than 1,000. Although numerous Indian Reservation settlements are located throughout the AOSERP Study Area,

the majority of these people live on the large Indian Reservation southeast of Fort Chipewyan (Indian Reservation 201) and on the southern shores of Gregoire Lake (Indian Reservation 174) near Anzac. As will be discussed below, the exclusion of the Treaty Indian population living on Indian Reservations, combined with their proximity to enumerated communities (particularly Fort Chipewyan) creates some difficulty in determining the actual population of the enumerated settlements.

With respect to enumeration areas, several are located either entirely or mostly within the Study Area. Consequently, EA level data will be extensively used in this report to present the socioeconomic characteristics of the AOSERP Study Area outside of Fort McMurray.

For both the census subdivision representing Fort McMurray and the EAs relevant to the remaining area, we must determine the extent of their areal compatibility over the last four censuses. First, we must learn to what extent the boundaries of each of these geostatistical units have changed and how this has affected the comparability of the data presented for these areas over time. A second issue, which is addressed only to those EAs which lie partially within the AOSERP Study Area, is to what extent they include socioeconomic data outside of the area being studied.

The following method is used to determine the comparability of EAs from one census to another. First, a graphical comparison is made of the EAs between two censuses to determine the extent to which they overlap. Then, where a shift in the boundaries of the EAs has occurred between the two censuses, we determine the amount of deviation in population caused by the shift. This is calculated by using the statistics on the population of the geographical townships in the areas. Because the objective of this report is to focus upon the communities of Fort McMurray, Fort Chipewyan, Fort Mackay and Anzac, every attempt is made to ensure that the statistical material centres around these localities. Population residing within the AOSERP Study Area but outside of these four communities shall be referred to as the surrounding area.

With respect to the EA's which lie only partially within the AOSERP Study Area, their compatibility is also determined by population counts from geographical townships. Specifically, the population of that part of the EA extending beyond the study area boundary is determined using township data and is compared with the total population in the EA. Where an unacceptably large percentage of the EA population is located in townships outside of the AOSERP Study Area, that enumeration area will not be used.

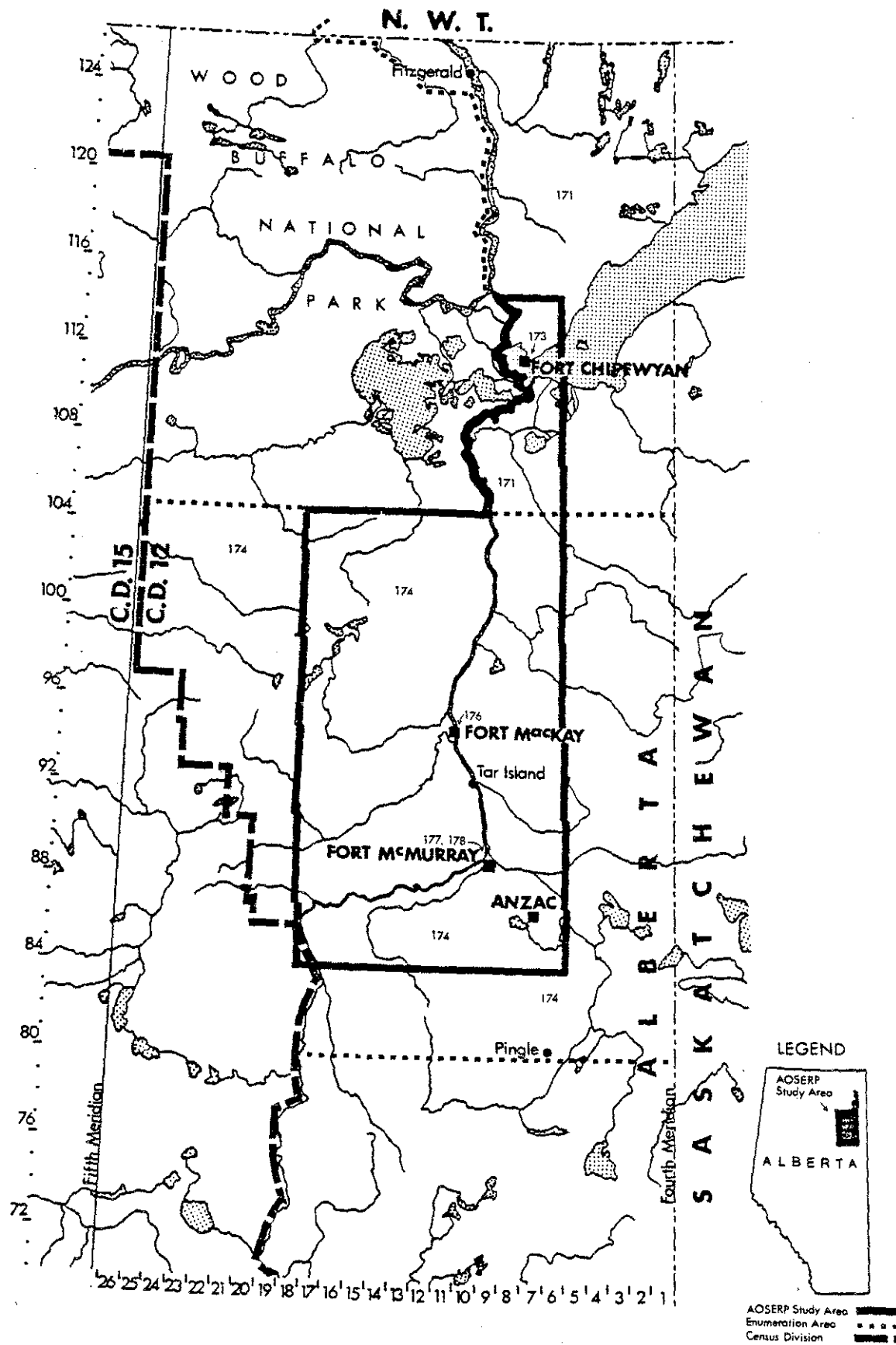
2.3.1.2 1961 Census. Of the four censuses from which Statistics Canada information is gathered, the 1961 census presents the most difficulty with respect to determining the comparability of the enumeration areas. At the time of the 1961 census, the entire area north of the 73rd township between the 4th and 5th meridians was under the jurisdiction of the Royal Canadian Mounted Police. Although regular geostatistical units were developed and regular census procedures were followed in that area for the 1961 census, there are no maps available which indicate where the enumeration areas or census subdivisions are located. There are not even boundary descriptions for the individual EAs within the RCMP district as there are for the other EAs in Canada. Instead, the enumeration area list defines only the boundary for the entire RCMP area and lists the twelve EAs within the area (i.e. EA 170 to EA 182, inclusive).

With the co-operation of Statistics Canada, we are able to estimate the boundaries of the relevant EAs by examining the original compilation sheets prepared by the 1961 Census Representatives. Because these files identify the location of any permanent residents within the unincorporated parts of a given EA, we are able to approximate the boundaries of these EAs. Figure 2 illustrates these estimated boundaries.

As may be seen from Figure 2, EA 176 represents Fort Mackay, EA 173 represents Fort Chipewyan and EA 174 represents Anzac and several other unincorporated localities for the 1961

Figure 2

## Estimated Enumeration Areas: 1961



census. Among the other permanent residences of people within EA 172 are McMurray Airport, Mile Forty-Three, Point Brule, Poplar Point, Mildred Lake, Bitumont, Kinosis, as well as several Forestry Towers. Although EA 174 extends beyond the AOSERP Study Area boundary, only a sparse population (less than 20 people) resides in this outlying area. Consequently, we shall use the data for EA 174 in our analysis.

Because Anzac, Fort Mackay and the surrounding area are agglomerated in later censuses into a single enumeration area, it has been necessary to combine EA 174 and EA 176 in order to maintain consistency. Together these two EAs listed 455 people within their boundaries in 1961. While population counts from the geographical townships in the AOSERP Study Area excluding Fort McMurray, Fort Chipewyan and Indian Reservations total 587 people, a discrepancy was found between the compilation sheet and the townshio data concerning the population in Township 85 in the 9th Range. The adjusted township population count of 502 suggests that 48 people lived in the AOSERP Study Area but outside of EA 173, EA 174, EA 176 and Fort McMurray.

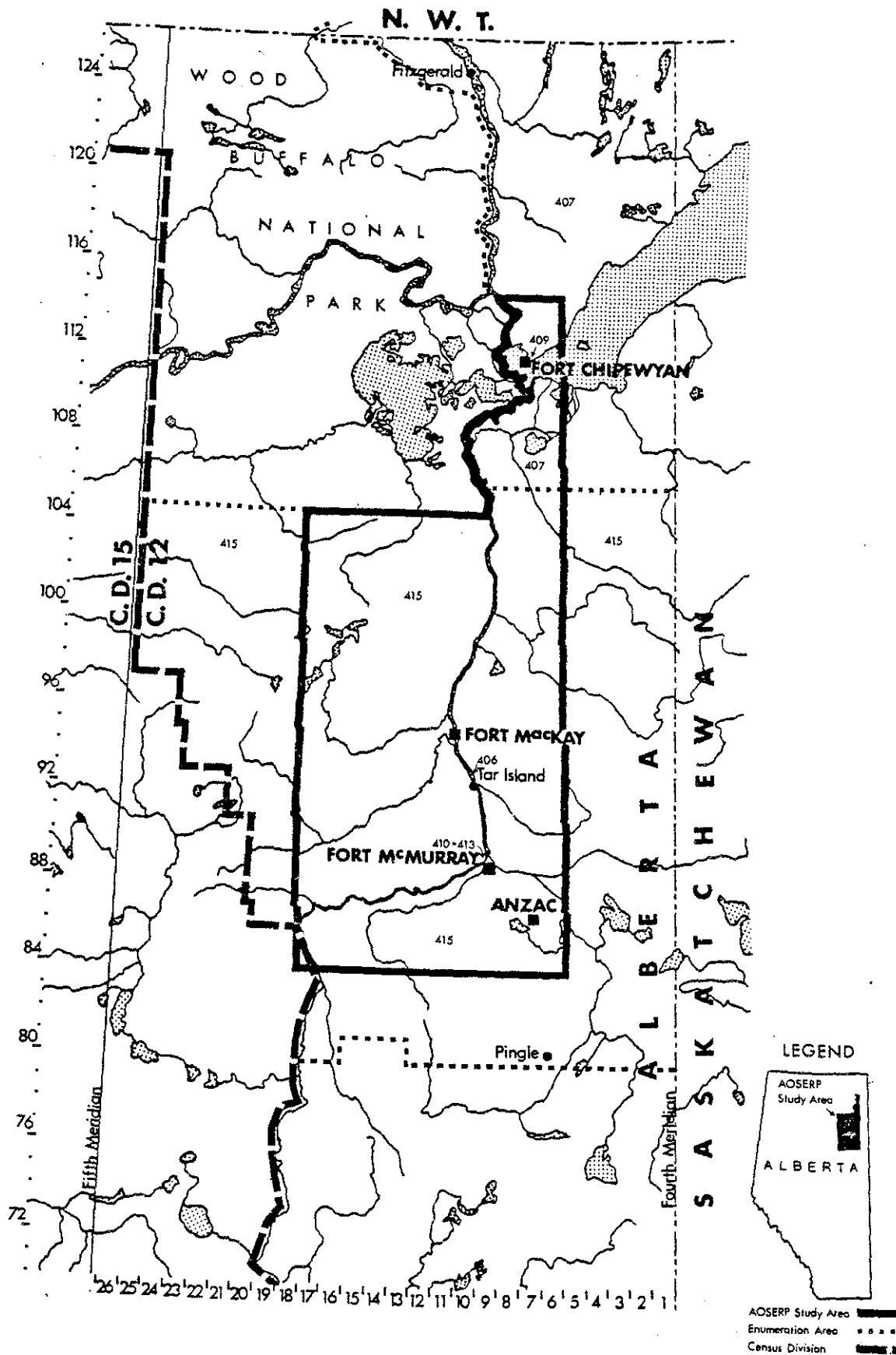
Most of this residual population of 48 people clearly resides in that part of EA 171 within the AOSERP Study Area (see Figure 2). We have decided to exclude this population from our calculations, however, because it represents only a small proportion of the 370 inhabitants in EA 171.

To summarize, the relevant geostatistical units for the 1961 census include EA 173 for Fort Chipewyan and EA 174 and EA 176 for Fort Mackay, Anzac and the surrounding area. Although Fort McMurray data is collected at the census subdivision level, it should be noted that EA 177 and EA 178 represent this area as well.

2.3.1.3 1966 Census Figure 3 illustrates the boundaries for the EAs and census subdivisions partially or wholly within the AOSERP Study Area for the 1966 census. As may be seen from this map, there are several EAs which lie entirely within the study area. As in the 1961 census year, Fort Chipewyan is assigned a single enumeration

Figure 3

## Enumeration Areas: 1966





area, EA 409. Thus, 1961 EA 173 is comparable to 1966 EA 409.

EA 415 has approximately the same boundaries as the 1961 EA 174, with two exceptions. First, EA 415 also includes the population of Fort Mackay which was separately presented as EA 176 in 1961. This problem has been overcome by the fact that we have combined EA 174 and EA 176 for the 1961 census.

The second exception is that Tar Island has been assigned a separate enumeration area (EA 406). After careful consideration, we have decided to exclude the information on EA 406 from our analysis. Tar Island is an area where oil exploration and mining has been carried out since the early 1960s. It is not surprising, then, to learn that this location had no population in 1961 and that 114 of the 119 inhabitants living there in 1966 were males. Furthermore, 1966 census enumeration data indicate that the area contained no families, no households, and no occupied private dwellings. Enumeration area descriptions do indicate that Tar Island had five buildings in 1966, however. All of this points to the fact that the 1966 population of Tar Island represented a work camp. Because our main interest is in the four major communities in the study area and because of the unusual socioeconomic characteristics of Tar Island, we have excluded EA 406 from our calculations.

Having accounted for the differences between the 1966 EA 415 and the 1961 EA 174, we may conclude that the 1966 EA 415 is comparable to the 1961 EA 174 and EA 176. Because the boundary of EA 415 extends beyond the AOSERP Study Area, it is necessary to determine the magnitude of the extraneous population. Based upon township population counts, there were 481 people living both within EA 415 and within the Study Area in 1966. Since this EA enumerated 518 people, it is estimated that only 37 people living within EA 415 in 1966 resided outside the Study Area; virtually all of these people lived between townships 80 and 83 (south of the Study Area), according to the township figures. This small percentage of the population outside of the AOSERP Study Area permits us to use this geostatistical area with much confidence for the 1966 data.

Figure 3 also shows that EA 407 is comparable to the 1961 EA 171 and therefore is excluded from our analysis. As with EA 171, most of the population in EA 407 lives outside of the AOSERP Study Area.

With respect to Fort McMurray, census subdivision data is used, although this information may also be obtained by summing the data on EA 410 to EA 413, inclusive. Although the municipality of Fort McMurray annexed part of the surrounding area in 1964, only a small population shifted from the surrounding area statistics (EA 415) to the census subdivision of Fort McMurray.

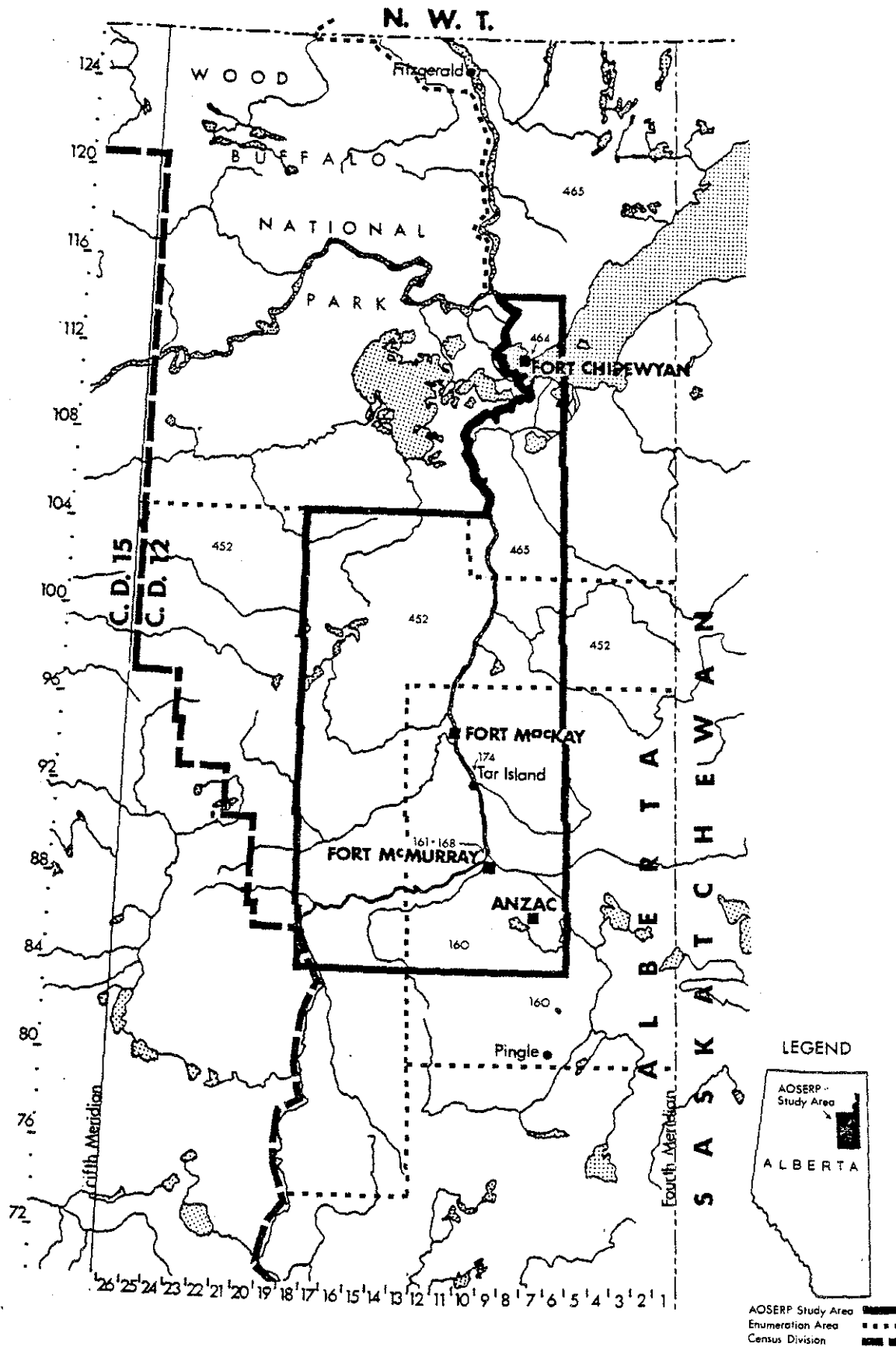
2.3.1.4 1971 Census. Turning to Figure 4 which shows the respective enumeration areas and census subdivisions in the AOSERP Study Area for the 1971 census, we find that considerable changes have occurred in the boundaries of some of the EAs. This dilemma is more apparent than real, however. EA 465, for example, is roughly comparable to the 1966 EA 407 which had no significant population within the Study Area. Even though the southern boundary for EA 465 extends further south than 1966 EA 407, this boundary shift does not greatly change the population within the latter enumeration area since the region is sparsely populated. Consequently, EA 465 is excluded from our analysis as were the comparable enumeration areas in the 1961 and 1966 censuses.

The 1966 EA 406 is divided into EA 452 and EA 160 for the 1971 census. Because EA 452 had less than 5 people living within its boundaries in 1971 and because these 5 people lived outside of the AOSERP Study Area, this EA has been excluded from our calculations. However, the statistical characteristics of EA 160 clearly include information on Fort Mackay, Anzac and most of the remaining area lying within the AOSERP Study Area. In this respect, we may say that EA 160 is comparable to 1966 EA 406.

Unfortunately, EA 160 also includes a relatively large population living outside of the Study Area. Population estimates from township data indicate that the combined population for Anzac, Fort Mackay, and the surrounding area had a 1971 census population

Figure 4

## Enumeration Areas: 1971



of 469. However, EA 160 reported a population of 605, leaving 136 people living outside of the AOSERP Study Area. Most of these people (approximately 109) resided in or around the unincorporated settlement of Pingle which lies south of the Study Area in Township 80 in the 6th Range. We are unable to explain the origin of this population since there were no inhabitants in or even near that township in either 1966 or 1976. Although this is a relatively large population, over three-quarters of the people in EA 160 reside within the Study Area. Moreover, this is an important population because it includes the inhabitants of both Anzac and Fort Mackay. Therefore, it is necessary to compromise here by including this area in our analysis, keeping in mind that a small proportion (22%) of its inhabitants live outside of the area we are investigating.

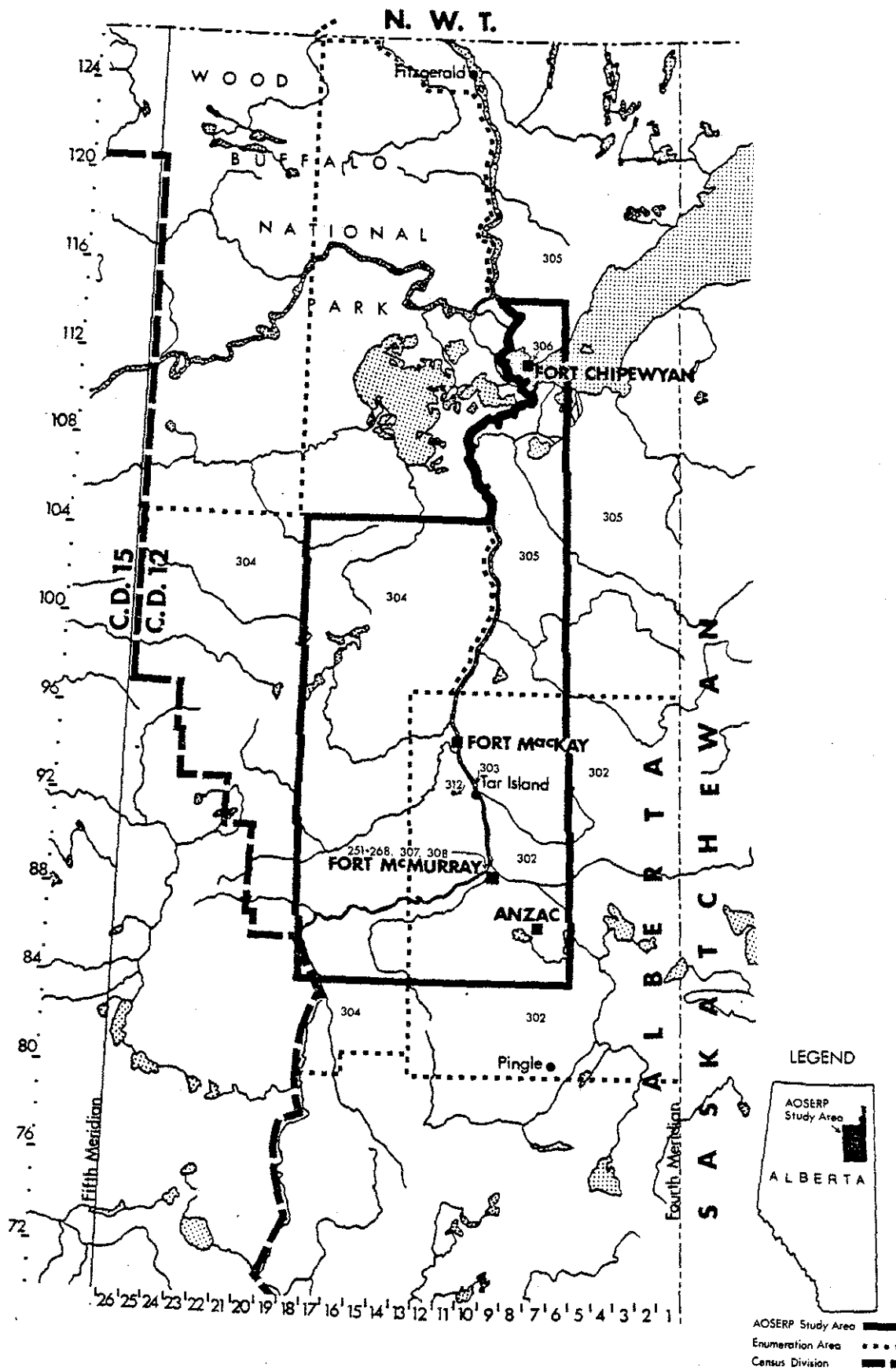
For the 1971 census, Fort Chipewyan is once again represented by its own enumeration area, EA 464. Thus, EA 464 is comparable to 1966 EA 409. EA 174, which represents Tar Island with a population of only 46 people in 1971, is excluded for the reasons outlined above in our discussion of the comparability of 1966 census geostatistical units. Finally, areal continuity has been maintained between the 1966 and 1971 censuses for the census subdivision of Fort McMurray. For 1971, Fort McMurray was also represented by EA 161 to EA 168, inclusive.

2.3.1.5 1976 Census. As illustrated in Figure 5, EA 302 has the same boundary as 1971 EA 160. The difference, however, is that the 1976 enumeration area includes virtually no population outside of the AOSERP Study Area. The relatively large group of people living in or around Pingle in 1971 no longer inhabits the area, and other small unorganized populations have apparently moved to more urban centers. The population of this geostatistical unit decreased considerably from 605 people enumerated in EA 160 in 1971 to only 355 people enumerated in EA 302 in 1976.

Because much of the population decline occurred outside of the AOSERP Study Area, the total population count for the geographical townships within the Study Area is almost the same as the

Figure 5

## Enumeration Areas: 1976



enumeration area total: 353 people. (The difference of two people may be due to the fact that EA data are rounded while township counts are not.)

As in previous censuses, Fort Chipewyan is assigned a separate enumeration area in the 1976 census, EA 306. Consequently, EA 306 is comparable to 1971 EA 464.

Tar Island, which is represented by EA 303, reported no permanent inhabitants in 1976. Another enumeration area near Tar Island, EA 312, also had no population. Less than five people resided within EA 304, all of whom lived outside of the AOSERP Study Area. Finally, geographical township counts indicate that the majority of the 65 people reported in EA 305 live outside the AOSERP Study Area. Consequently, EA 303, EA 304, EA 305, and EA 312 have been excluded from the tabulation of the 1976 census data in this report.

With respect to Fort McMurray, the boundary of this municipality expanded between 1971 and 1976 from 3.22 square miles to 14.4 square miles. However, the size of the population transferred to the town from the surrounding area is estimated at only 60 people. Considering the already large population of Fort McMurray and considering that we are primarily interested in the characteristics of the four communities stated above, we do not believe that the transfer of these 60 people from the enumeration area representing the surrounding area to the census subdivision representing Fort McMurray seriously affects the comparability of the respective data over time. For 1976, Fort McMurray is also represented by EA 251 to EA 268 inclusive, as well as EA 307 and EA 308.

2.3.1.6 Summary. The comparability of the geostatistical units over the past four censuses is summarized in Table 1 and Table 2. As may be seen in Table 1, the comparable enumeration areas representing Fort McMurray, Fort Chipewyan, Anzac, Fort Mackay, and the surrounding area are listed along with their respective federal electoral districts. The relevance and comparability of each enumeration area has been discussed above. Note that although the

Table 1. Alberta Oil Sands Environmental Research Program Study Area: locations by enumeration area (EA) and federal electoral district (FED) for census years 1961 to 1976.

Location	1961		1966		1971		1976	
	EA	(FED)	EA	(FED)	EA	(FED)	EA	(FED)
Fort McMurray	177,178	(802)	410-413	(802)	161-168	(801)	251-268, 307,308.	(001)
Fort Chipewyan	173	(802)	409	(802)	464	(801)	306	(001)
Anzac, Fort Mackay, and Surrounding Area	174,176	(802)	415	(802)	160	(801)	302	(001)

Sources: a) Relevant maps from Statistics Canada for 1961, 1966, 1971, 1976.

b) Statistics Canada. Equivalent 1976 and 1971 Enumeration Areas. Working Paper Document #DD-76-53, March 1979.

c) Statistics Canada. Unpublished compilation sheets for selected enumeration areas in 1961.

enumeration areas representing Fort McMurray have been included in this table, the census data on this municipality has actually been collected from census subdivision sources.

Table 2 summarizes the comparisons made above of the geographical township population totals from the relevant enumeration areas. As discussed before, the enumeration areas selected to represent Fort Mackay, Anzac, and the surrounding area underrepresent them in 1961 by 48 people. The relevant 1966 EA's overrepresent these areas by 37 people because the enumeration area data extends beyond the AOSERP Study Area boundaries. The overrepresentation is 136 for 1971, particularly because the relevant enumeration area includes 100 people living in or near Pingle which lies outside the Study Area boundary. For 1976, the enumeration area covering Fort Mackay, Anzac, and the surrounding area closely approximates the actual population based upon geographical township population counts of the relevant area within the AOSERP Study Area. This proximity, we explained, is due to the fact that, while the enumeration area still includes territory outside of the study area, the extraneous area reported no population in the 1976 census.

### 2.3.2 Comparison and 'Norming' of Data.

In this section, we review the various methods used in this report to compare and norm the data in order that analysis may be facilitated. The most common method of comparing and norming the data used in this study is to percentage the categories of a variable within a given year. This simple percentaging technique, which standardizes the data around the total value for a variable (e.g. the total population, total number of houses, etc.), enables researchers to compare the distribution of a given variable among different communities or within the same community at different points in time. For example, changes over time in the Fort McMurray residents under 25 years of age is more easily decipherable using percentaged data.



Table 2. Anzac, Fort Mackay and surrounding areas: comparison of population from township estimates with population from enumeration area estimates for census years 1961 to 1976.

Location by Year	Township Estimates	Enumeration Area Estimates	Enumeration Area Population Outside of AOSERP Study Area
<u>1961</u>			
Fort Mackay	187	188	(1)
Anzac	154	267	(47)
Surrounding Area	161		
TOTAL	502	455	(48) (1)
<u>1966</u>			
Anzac	224	N/A	N/A
Fort Mackay	230	N/A	N/A
Surrounding Area	27	N/A	N/A
TOTAL	481	518	37
<u>1971</u>			
Anzac	119	N/A	N/A
Fort Mackay	207	N/A	N/A
Surrounding Area	143	N/A	N/A
TOTAL	469	605	136 (2)
<u>1976</u>			
Anzac	138	N/A	N/A
Fort Mackay	169	N/A	N/A
Surrounding Area	46	N/A	N/A
TOTAL	353	355	2 (3)

NOTES: (1) Brackets indicate population within Study Area not included within E.A.'s used.

(2) This large population within the E.A. but outside of the AOSERP study area is primarily due to the existence of about 100 people in the township containing the unincorporated place of Pingle in 1971. For reasons unknown, there was no population in that township during either the 1966 or 1976 census.

(3) The difference of two people is probably due to rounding of the E.A. data.

Various rates are extensively used in this report. This norming technique is useful where the size of a particular population explains much of the variance. For example, one would logically believe that the number of live births in Edmonton is much larger than Fort McMurray because of the difference in the population and, in particular, because of the difference in the number of women in their childbearing years. Rates enable researchers to remove the population as a factor in the size of the variable so that the effect of other factors, such as cultural differences, may be more readily observed.

In this report, rates are typically based upon the permanent population of the community and may appear as a per capita figure (e.g. as in liquor sales per capita) or in terms of a larger population size (e.g. crime rates per 100,000 population). In either case, some caution must be exercised. Although rates remove the unwanted effect of the size of the permanent population upon the magnitude of the variable, it is not possible to control for the size of the temporary population even though this population may also affect the size of a given variable. Where it appears that the temporary population has inflated the values, this phenomenon will be noted.

For much of the quantitative information in this report, comparison is made with the relevant Alberta data. Since one of the main objectives of this report is to study the effects of oil sands development upon the communities within the AOSERP Study Area, comparison of socioeconomic data within the area with Alberta data enables the researchers to identify and remove any variance which has not been caused by these oil sands developments.

Finally, where random variation in the data occurs from year to year, the information has been averaged. This averaging technique has the effect of "smoothing out" yearly variation so that a clearer picture of the long term trend is presented. In order to present a more thorough data base of averaged values, overlapped averages are used for several variables (e.g. crime statistics).

## 2.4 DISCREPANCIES IN DATA FROM DIFFERENT SOURCES

### 2.4.1 Introduction

In this section, we address the issue of discrepancies that are occasionally found in the data from different sources. Since this report relies heavily upon information provided by Statistics Canada, most of these discrepancies occur between this source and information collected by other levels of government such as municipal censuses or private organizations in various reports. Below, several explanations are offered for these discrepancies. Several examples, observed in the preparation of this report, are cited throughout the discussion.

### 2.4.2 Definition of Population

Perhaps the most common cause of discrepancies between Statistics Canada census data and information collected by other agencies is that different definitions are assigned to the population being enumerated. This may be particularly problematic in the comparison of the Census Canada population of Fort McMurray with the annual census taken of the town by the Alberta Department of Municipal Affairs. Several differences have been found between these two enumerations over the years. For 1966, the provincial agency reported a population in Fort McMurray of 3,378 (Department of Municipal Affairs, 1979). The comparable figure from Statistics Canada was 2,614 - over 700 fewer inhabitants (Statistics Canada, 1966). Again, in 1971, the provincial census reported 7,146 people while the federal department enumerated only 6,847 (Department of Municipal Affairs, 1979; Statistics Canada, 1971).

It is possible that these differences may be due to different criteria set out for the population to be enumerated. For Statistics Canada, everyone in Canada alive at midnight on May 31st/June 1st is included in the census with the exception of the following groups: citizens of another country temporarily visiting in Canada; foreign government representatives and

members of the Armed Forces of another country and their families who are not citizens of Canada; students whose usual place of residence is outside of Canada; workers and their families in Canada on special employment visas. However, that portion of the Canadian population temporarily outside the country on the date of the census are included in the tabulations. These standards may differ from the calculations made for the municipal census and, therefore, account for the different population count.

While these criteria essentially dichotomize residents into Canadian and non-Canadian citizenship so that only Canadian citizens, landed immigrants, and similar groups are included in the census, Statistics Canada and other census agencies must develop a set of criteria for the residency status of people enumerated in a specific community. For the Census of Canada, the de jure system of census enumeration is used. That is, the individuals enumerated for the census are geographically characterized by their usual place of residence in Canada on the census date. In the case of the 1976 census, persons temporarily absent from their usual residence - such as students at university, persons away on visits or business, patients in hospital for less than six months, and persons temporarily abroad - are counted at their usual place of residence in Canada. This differs from the de facto approach used by some census agencies which geographically categorizes individuals by the place where they happen to be located on the census day.

The de jure system of enumeration is used in the Censuses of Canada primarily because the original objective of the census of Canada was to establish the boundaries of federal constituencies so that fair representation could be achieved. Other agencies may prefer the de facto criterion where government programming implications of the data are relevant to the magnitude of both permanent and temporary population. Thus, the possibility that other enumerations include "temporary" residents in the statistics may contribute to discrepancies with Statistics Canada census figures.

### 2.4.3 Absent Residents

The Alsands Project Group (1979) noted that the 1976 population of Fort McMurray differed by 2100 people between the Municipal Census (17,550) and the Census of Canada (15,425). As an explanation of this discrepancy, the authors suggested that "given the tendency among Fort McMurray residents to spend holiday time outside the community, it seems quite likely that there may be under-enumeration in the case of Canada Census" (p. 14). With respect to the 1976 population of Fort Chipewyan, the Alsands Project Group reported that Statistics Canada's figure of 1,190 might be in error because a "careful estimate" of the population made in 1974 by Ekistic Design Consultants (1976) set the population at 1500.<sup>1</sup> Again, the authors suggest that Census Canada figures are too low because several residents of Fort Chipewyan "were out at fishing camps when the Census enumerations were made at the end of 1976" (p. 30).

Aside from the fact that the Census of Canada is taken on June 1st and not at the end of the year, we do not believe that the absences of residents is a legitimate argument against the Statistics Canada figures. When one considers the elaborate techniques used by Statistics Canada to determine the socio-economic and demographic characteristics of Canada through the censuses, it is highly unlikely that people usually residing in Fort McMurray or Fort Chipewyan are excluded from the population counts.

With respect of the vacationing residents of Fort McMurray, Census Representatives across Canada are instructed to collect information on both permanent and temporary residents. Where the temporary residents enumerated are to be included in the census (i.e. where they are Canadian citizens or equivalent),

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<sup>1</sup> The Ekistic report was prepared for the Northeast Alberta Regional Commission. Yet later reports by the Commission (such as Northeast Alberta Regional Commission (1978, p. 8)) have used the Statistics Canada figure of nearly 1200.

a special computer process 'assigns' them to their permanent residence. Consider, for example, a family that permanently resides in Fort McMurray but is visiting friends or relatives in Edmonton during the census. The information on the members of the family is gathered in Edmonton but is added to the tabulations for the enumeration area in Fort McMurray where the family's permanent residence is located.

In the instance of the residents of Fort Chipewyan who are inaccessible during the Census of Canada, an alternative approach used by Statistics Canada minimizes the possibility of their exclusion. The Census Representative responsible for a given enumeration area is instructed to seek out the required information on people absent from their residences during the census period (i.e. the week of June 1st) from other fairly reliable sources. Typically, this involves soliciting information from members of the household who are present during the census or, more often, from neighbours. If the information collected on these people is still insufficient, then an "incomplete questionnaire card" is created. If no information at all is available on these individuals, a "missing questionnaire card" is prepared. In either case, the missing data are filled in by using a special computer program which randomly provides the missing information based upon the data on other residents. Thus it is highly unlikely that people temporarily living in remote areas (or out of the country) during the Census of Canada are excluded from the population counts. This is particularly true in Fort Chipewyan which is a small community and where, presumably, neighbours know each other.<sup>1</sup>

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<sup>1</sup> Note that Census Representatives might also take enumerations at the fishing camps if they are known. Where information is collected on an absent resident from neighbours and the individual is enumerated at his or her temporary residence, procedures are automatically executed in the computer system to prevent any duplication.

#### 2.4.4 Time of Enumeration

A third possible explanation for discrepancies in data presented by different surveys may be that the enumerations take place at a different time of year. In our opinion, this is the best explanation for the difference mentioned above between the 1976 Municipal Census and Census of Canada population count for Fort McMurray. The Census of Canada total of 15,425 is based upon an enumeration taken in June while the provincial total of 17,550 is from a census taken the following October. In addition to the possibility that different population criteria have been used, the later date of the municipal census would explain the higher population total.

#### 2.4.5 Judgemental Variation

Finally, discrepancies in the data from different sources might be explained by differences in judgement used by the respective census representatives. In our opinion, this is the best explanation for the different Fort Chipewyan population totals reported by Statistics Canada for 1976 and Ekistic Design Consultants for 1974. Over two-thirds of the community's population is Native Indian. It may be difficult to determine whether a particular individual is a resident of Fort Chipewyan or of the nearby Indian Reservation, particularly where there is much interaction with people in both population centres. Similarly, it is possible that different residency statuses (i.e. permanent or temporary) are assigned to people in the community who spend most of their time in nearby camps. In either case, the different residency status would result in a major discrepancy in the population totals of two different censuses.

### 3. POPULATION

#### 3.1 INTRODUCTION

In this chapter, we explore the characteristics of the population in the AOSERP Study Area. Although our main interest is in the socioeconomic patterns since 1961, we begin with an overview of the population changes in the AOSERP Study Area and its major communities since 1941, thereby providing an historical introduction.

In the second part of this chapter, we begin with an analysis of the demographic characteristics of Fort McMurray between 1961 and 1979. This includes the presentation of data on the age distribution of the population, vital statistics, ethnicity, religion, education, language, marital status, and migration. Next, we analyze the statistical material on Fort Chipewyan, followed by that of the area comprising Anzac, Fort Mackay and the surrounding area within the AOSERP Study Area boundary. Because only enumeration area level data is available on these two areas (compared with census subdivision level data for Fort McMurray), the amount of information available is considerably less than what is available for Fort McMurray.

We now turn to an historical review of the population in the AOSERP Study Area since 1941.

#### 3.2 POPULATION TRENDS SINCE 1941

##### 3.2.1 AOSERP Study Area

The change in the size of the population in the AOSERP Study Area may be summarized as a dramatic ebb and tide. As shown in Table 3, the total population of the study area in 1941 was 1,806, based upon the population counts from the relevant geographical townships. The 'ebb' in population occurred between 1941 and 1951 when the population fell to 1,560. As will be discussed in



more detail below, this decrease in population is largely due to the economic downturn in the area following World War II contributed by the withdrawal of American troops from the area.

Since 1951, however, the AOSERP Study Area has experienced a 'tide' of population growth. Growth was slow at first, rising to 2,500 in 1961. But by 1966, the population for this area had jumped over 70% to 4,254. The population doubled during the next five years, reaching 8,486 in 1971. By 1976, the population had reached 17,000. Estimates for 1979 set the population of the AOSERP Study Area at 28,000.

Of course, the dramatic population growth in the area is primarily caused by the two oil sands developments in the region - Great Canadian Oil Sands (GCOS, now Suncor) in the mid-1960's and Syncrude during the mid-1970's. Population growth has been particularly rapid during the construction phases, which explains the more rapid growth during the 1961-1966 period and the 1976-1979 period. A delineation of the population into the communities and surrounding area within the AOSERP Study Area, however, reveals that growth has been primarily in Fort McMurray.

### 3.2.2 Fort McMurray

Although Table 3 shows a relatively static population for Fort McMurray between 1941 and 1961, this community witnessed a 'boom' of sorts during World War II when nearly 3,000 American troops inhabited the nearby locality of Prairie. As well as defending Alaska as a strategic area in Pacific operations, the troops were stationed in the AOSERP Study Area in order to build a pipeline from Norman Wells on the Mackenzie River to Whitehorse in the Yukon. It was during this operation that much infrastructure - including dock facilities, an airport, and housing - was built in and around Fort McMurray.

It is not surprising that the withdrawal of the American troops resulted in an economic 'jolt' to the local economy. As one resident recalled:

and then when (the American troops) 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.  
(Parker, 1979, p. 37)

Following the Second World War, the population of Fort McMurray grew slowly from 926 in 1951 to 1,186 in 1961. As a proportion of the entire Study Area, the population of Fort McMurray between 1941 and 1961 was slightly over 50%. But as large-scale oil sands development began in the mid-1960's, (beginning with GCOS), the percentage of the AOSERP Study Area population living in Fort McMurray increased to 80.7% by 1971 and, in 1979, was estimated to be 94.0%. Indeed, the oil sands development is primarily responsible for the almost twenty-one fold increase in Fort McMurray's population between 1961 and 1979.

### 3.2.3 Fort Chipewyan

Fort Chipewyan experienced a decline in population between 1941 and 1956 from 705 people to only 304. Because only a few people lived in the unorganized territories around Fort Chipewyan during this period, the decline in population can only be attributed to the migration of Treaty Indians living in the community back to the large, nearby reservation which, for reasons outlined in Chapter 2, has not been included in the statistics. Between 1956 and 1961, the population jumped quickly to 717 and, by 1966, had reached well over 1,000. This rapid increase over the ten year period between 1956 and 1966 can be explained by a number of factors. First, it is believed that Fort Chipewyan was greatly affected by the development of Uranium City in Saskatchewan during the late 50's and early 60's. Even today, much of Fort Chipewyan's air transportation flies to this Saskatchewan community, although its importance has declined with the growth of Fort McMurray.

A second explanation suggested by Parker (1979), is that the distribution of family allowances and other forms of social services and support in Fort Chipewyan attracted many inhabitants

from the bush settlements to settle in the community. Third, Wood Buffalo Park regulations were changed to prohibit trading stores from operating within the Park boundaries. This forced owners of those trading stores to relocate in or near Fort Chipewyan which, for many, was the nearest community. Finally, the decline in the fur market made Fort Chipewyan - where social assistance is available - the logical choice to move (Parker, 1979).

Between the middle of the 1960's up to the present time, the population of Fort Chipewyan has grown very little. Although one estimate suggests that the population of this settlement is actually closer to 1,500 (Ekistic Design Consultants, 1976), the 1976 Census of Canada estimated the population to be closer to 1,200. This difference, which has been discussed in the previous chapter, may particularly be due to the proximity of the Indian Reservations and the confusion over the temporary or permanent status of Treaty Indians living in Fort Chipewyan at the time of either the Statistics Canada or Ekistic Design Consultants' enumerations. In either case, it is clear that the proportion of the AOSERP Study Area population residing in Fort Chipewyan has declined considerably over the past forty years.

#### 3.2.4 Fort Mackay

Prior to 1961, the population of Fort Mackay was very small, increasing only slightly from 36 people in 1941 to 59 people by 1956. During the latter part of the 1950's, however, the population increased quickly to reach 187 by 1961. Although a number of sources have similarly noted the rapid increase in population during this period (Van Dyke, 1978; Marieno, 1975), there has been little explanation given for this phenomenon. Although Parker (1979) suggested that the population increase at this time was due largely to the establishment of the Hudson's Bay Company in 1959, he also proposed that the population of Fort Mackay in that year was approximately 200 people. This very large deviation from the Statistics Canada estimates of the population living in Fort Mackay during the latter part of the 1940's and the early

1950's points, once again, to the discrepancies that may be created by the nearby existence of Indian Reservations and the question of residency status. In fact, we suggest that the rapid increase in population of this unincorporated settlement between 1956 and 1961 is largely caused by the migration of Treaty Indians from surrounding Indian Reservations and other people from nearby bush settlements to Fort Mackay.

Since 1961, the population of Fort Mackay increased slowly to 230 people by 1966, then decreased to its 1976 population of 169. This decline, it is suggested, is primarily caused by the migration of some Fort Mackay residents to the nearby work camps at Suncor and Syncrude. As Humphreys wrote:

up to 800 native people, many of them women, were employed on the Syncrude project. Many of them, though not all, lived in camp. Some whose homes were nearby in Fort Mackay would have preferred to commute daily but were unable to do so because of the lack of daily transportation to and from Fort Mackay. (1979, page 47).

### 3.2.5      Anzac

The unincorporated community of Anzac experienced rapid growth between 1941 and 1961, increasing from only 17 people during the war years to 154 people by 1961. Correspondingly, as a proportion of the entire AOSERP Study Area, the population of Anzac increased from less than 1% to over 6% during these years. There are a number of possible explanations for this rapid growth rate. Anzac experienced considerable economic development between World War II and the early 1960's. In 1939, Northern Alberta Railways built a station at Anzac which later created some employment. In 1957, a Mid-Canada radar site was established at Stony Mountain and in 1960 AMOCO Canadian Petroleum Company established a pilot project on Reserve 176. All of these contributed to Anzac's growth at this time.

But following a population peak in 1966, of 224 (5.3% of the entire population of the AOSERP Study Area), Anzac

experienced a rapid decline. Three major factors contributed to this. First, land dispensation was restricted by the Forestry Division of Alberta Energy and Natural Resources to people who were residents of Anzac before 1963 and who held a local job which kept them in this community. Second, the Mid-Canada radar site was abandoned in 1964. Finally, the completion of a road link between Anzac and Fort McMurray in 1963, combined with promising employment opportunities in Fort McMurray, encouraged the migration of many Anzac residents to the larger community.

Today, the population of Anzac is less than 150. This is somewhat higher than the 1971 figure of 119 people because of natural population increase and because of the recreational development of Gregoire Lake during the early 1970's. Because Anzac is located a considerable distance away from the area of oil sands activity, oil sands development has had relatively little impact upon the settlement except through the continued existence of AMOCO and, as a secondary effect, the recreational development of Gregoire Lake.

### 3.2.6 Surrounding AOSERP Study Area

The surrounding area - which includes the population in the AOSERP Study Area outside of Fort McMurray, Fort Chipewyan, Fort Mackay, Anzac and Indian Reservations - has remained very sparsely populated since 1941. As may be seen in Table 4 which shows the population counts for each geographical township in the study area which has reported any population since 1941, the population in the surrounding area has also become more concentrated in recent years. For example, out of over 300 geographical townships in the AOSERP Study Area, 13 reported any population (excluding those for Fort Chipewyan, Fort Mackay, and Anzac) in 1941. By 1976, only three townships were inhabited. In other words, the 1976 population living in the surrounding area resides in about one percent of the townships in the study area.

The notable areas of population in the surrounding area include: (1) Embarras Portage (Township 109 in Range 9) where the

population diminished after reaching 46 in 1951; (2) Township 88 in Range 8, which includes Draper and Lynton and had a population of 58 and 47 in 1956 and 1961, respectively; (3) Townships 88 and 89, both in Range 9, which surround Fort McMurray and had 1971 populations of 36 and 93 respectively, before partially annexed by the municipality; (4) Checham (Township 84 in Range 6) which suddenly reported no population after 1956.

### 3.3 DEMOGRAPHIC TRENDS SINCE 1961

#### 3.3.1 Fort McMurray

In the previous section, we noted that the population of the AOSERP Study Area has grown quickly in recent years and that most of this growth has occurred within Fort McMurray. As may be seen in Table 5, the average annual growth rate of Fort McMurray since the early 1960's has been nearly ten times the average annual growth rate for Alberta. In particular, the rate of growth for the community has been higher during the two periods of oil sands construction - the GCOS construction during the mid-1960's and the Syncrude construction during the mid-1970's.

Major changes have occurred in the age distribution of the Fort McMurray population since 1961 (Table 6). The percentage of the population between the ages of 20 and 44 years has grown from 27.9% in 1961 to 49.9% by 1979. Note that the greatest increase in this age cohort has been during the two periods of oil sands plant construction.

Meanwhile, the proportion of the population 45 years and older continued to decrease dramatically during the 1960's and 1970's from 20.8% in 1961 to only 7.0% by 1979. This decline is even more noticeable among older age cohorts. For example, the proportion of the population 65 years and older decreased from 5.6% in 1961 to only 0.4% by 1979. This reflects the fact that the in-migration into the community has consisted mainly of young people.

As exhibited in Table 7, males have continued to be over-represented in the population of Fort McMurray over the past two decades. In 1961, there were over 119 males for every 100 females. With the development of the GCOS oil sands plant during the mid-1960's, this ratio jumped to 128.7 males per 100 females. However, the infrastructural development of the community during the late 1960's encouraged the migration of families and young women, thereby reducing the male/female ratio to only 109.2 by 1971. Between 1971 and 1978, the ratio has remained relatively constant.

In Table 8, which displays the live births in Fort McMurray and Alberta between the years 1961 and 1976, the effect of oil sands development is evident. Prior to the GCOS construction, the live birth rate for Fort McMurray was considerably less than the comparable rate for Alberta. Beginning in 1965, however, the Fort McMurray rate jumped to 26.0 and, by 1968, reached a peak of 48.7 live births per 1,000 population. The live birth rate decreased following the completion of the GCOS plant, reaching a level of 23.0 live births per 1,000 population in 1974. With the beginning of Syncrude construction in 1975 and 1976, the birth rate once again increased.

In other words, the birth rate for Fort McMurray has fluctuated with the development of oil sands operations while the Alberta rate has continued to decline. It is probable that much of the fluctuation in the community's birth rate is due to the presence of a 'shadow' population (i.e. temporary residents) which are not included in the population base. In the long term, however, these statistics reflect the growing presence of young families in the community since the introduction of GCOS in the mid-1960's.

The relatively large decrease in Fort McMurray's death rate between 1961 and 1976 should not be surprising considering the relatively young population that moved into the community during this period (Table 9). While the Alberta death rate has, on average, decreased only slightly from 6.7 to 6.4 deaths per 1,000 population, the comparable rates for Fort McMurray have decreased from an average

of 6.0 between 1961 and 1964 to only 2.5 between 1973 and 1976.

While the decrease in Fort McMurray's death rate over the past two decades has been quite considerable, the decrease in its infant death rate - as shown in Table 10 - is quite extraordinary. During the first half of the 1960's, the infant death rate was over six times the comparable rate for Alberta. Specifically, infant mortalities per 1,000 live births averaged 151.0 in Fort McMurray between 1961 and 1964. For the last four years upon which data is available (1973 to 1976), there has been only an average of 10.7 infant deaths per 1,000 live births in the community. Thus, the infant death rate for Fort McMurray fell from over six times the Alberta rate to a figure which, in recent years, is considerably less than the Alberta rate.

Based upon the increase in population for Fort McMurray (Table 5) and the data on births and deaths for this community (Table 8 and Table 9), we have constructed the statistics for the natural population increase and total net migration between 1961 and 1976 for Fort McMurray. As may be seen from Table 11, the rate of natural increase in Fort McMurray's population was considerably less than that of Alberta between 1962 and 1964. With the introduction of GCOS construction, however, this situation rapidly changed so that the natural increase in Fort McMurray has been twice the Alberta figure since the mid-1960's combined with the significant decrease in the death rate has contributed to this rapid acceleration in Fort McMurray's population due to natural increase.

While the rate of natural increase in Fort McMurray's population has been relatively high since the mid-1960's, the largest source of population growth for the community has come from migration. Although the data on total net migration presented in Table 11 is a rough estimate, calculated as a residual difference of the total population increase minus the natural increase, the averages presented in the table demonstrate that the rate of net in-migration for Fort McMurray has typically been between 10 to 20 times the Alberta rate. Moreover, it shows



that total net in-migration for the community has represented over three-quarters of its population growth over the past two decades.

Turning to Table 12, there are several interesting trends in the marital status of the population for Fort McMurray which may be observed. First, the proportion of people who have never been married has decreased from 59.5% in 1961 to 51.0% by 1976. This decrease in the percentage of unmarried individuals is apparent for both sexes, although it is somewhat larger for males over this period of time.

Second, married women as a proportion of the female population has been consistently higher than married men as a proportion of the total male population over the past four census periods.

Third, the number of people who have been widowed as a percentage of the total Fort McMurray population has decreased for both males and females, reflecting the shift to a younger population in Fort McMurray in recent years.

Finally, the percentage of the population which is divorced has more than doubled, increasing from 0.4% in 1961 to 0.9% by 1976.

While most of the changes in the marital status of Fort McMurray residents parallel changes in the province, the increase in the married population may indicate the improved services and facilities over the past two decades for family living.

The number of marriages per 1,000 population in Fort McMurray has more than doubled between 1961 and 1976 (Table 13). During the years 1961 to 1964, there were only 2.4 marriages per 1,000 population in Fort McMurray on average, compared with 5.4 between 1973 and 1976. While the marriage rate for Fort McMurray is still below that of Alberta, it has increased from only one-third of the Alberta marriage rate during the early 1960's to almost two-thirds of the Alberta marriage rate during the mid-1970's. Note that the highest marriage rate in Fort McMurray occurred during the early operational phases of the GCOS plant (i.e. 1968-1970).

As may be seen in Table 14, the percentage of the Fort McMurray population whose mother tongue is English has increased from 71.8% in 1961 to 86.0% by 1976. While the actual number of French speaking residents in Fort McMurray has increased over the past two decades, this population has decreased as a percentage of the total population from 8.6% to only 4.2%. Similarly, the percentage of Fort McMurray residents whose mother tongue is neither English nor French has decreased between 1961 and 1976 from 19.6% to only 9.8%. Notably, there has been a rapid decrease - both in relative and absolute terms - in the size of the population whose mother tongue is either Eskimo or Native Indian.

Changes in the ethnicity of Fort McMurray residents between 1961 and 1971 parallel the changes in mother tongue. As illustrated in Table 15, the percentage of the population with ancestry from the British Isles has increased from 35.3% in 1961 to 47.9% by 1971. The population with French ancestry, however, decreased from 23.8% in 1961 to 13.1% by 1971. Similarly, the percentage of Native Indians and Eskimos decreased from 11.9% in 1961 to only 6.5% by 1971.

One important point that should be noted regarding Table 15 is that the ethnicity of the 1961 population of Fort McMurray is mostly European. Even if the entire population with French ancestry was Metis, the total 1961 population of Metis and Native Indians in Fort McMurray would have represented only 35.7% of the Fort McMurray population. Indeed, because of the lure of wealth from oil sands in the area, the migration of speculators into the community during the late 1800's and early 1900's had diluted the proportion of the population with an indigenous background. Consequently, Fort McMurray has been a community composed largely of people with European ancestry since World War 2 (if not before). This finding differs from the suggestions of other recent reports. Peter C. Nichols and Associates Ltd. (1980), for example, claimed that Fort McMurray was "largely native" before 1960 (p.1).

And Assheton-Smith (1976) stated that 700 of the 1300 residents in the community in 1963 were native. Based upon the data from Table 15 and Assheton-Smith's estimated 1963 population of 1,300 (it was probably closer to 1,600 - see Table 5), the number of Native Indians would have been less than 150 and the number of French-Canadians (including Metis) would have been 300 - much less than the 700 reported by the author.

With respect to religion, there has been a shift from Roman Catholic to Protestant residents of Fort McMurray between 1961 and 1971 (Table 16). The percentage of the population that reported their religion as Roman Catholic decreased from 60.5% in 1961 to 38.7% by 1971. At the same time, increases were reported in the percentage of the Fort McMurray population following other religions. In particular, the percentage of the population that belong to the United Church increased from 13.7% in 1961 to 21.1% by 1971.

As Table 17 reveals, the percentage of the Fort McMurray population with less than grade 9 education has decreased dramatically between 1961 and 1979. Although the 1961 data is not entirely comparable with later censuses, it is evident that the percentage of the population 15 years and over with less than grade 9 education decreased considerably between 1961 and 1971 to 22.4%. This percentage continued to decrease to only 12.7% in 1976 and, by 1979, represented only 5.4% of the Fort McMurray population. Overall, the Fort McMurray population with less than grade 9 education has decreased from a figure which was somewhat higher than that of Alberta in 1961 to a figure which is considerably less than that of Alberta in more recent years.

The percentage of the Fort McMurray population with university education has continued to lag behind that of Alberta. However, there has been a recent increase in the percentage of the community's population with community college education. In 1976 for example, 24.9% of Fort McMurray residents, compared with only 17.8% of Alberta residents, had postsecondary non-university education. This difference is most likely due to the presence of Keyano College and the human resource needs for the oil sands

operations in the area.

Table 18 shows the differences between Fort McMurray and Alberta with respect to the level of the schooling of the population 15 years and over by age for 1976. Two interesting points are worth mentioning here. First, the older population for both Fort McMurray and Alberta tends to be less educated. This is particularly evident for the Fort McMurray population 65 years and over where 80.8% had less than grade 9 education in 1976. Second, the percentage of the Fort McMurray population between the ages of 25 and 64 years with postsecondary non-university education is much higher than for Alberta. For example, 22.8% of the Fort McMurray population between 55 years and 64 years of age has postsecondary non-university education, compared with only 14.4% of the Alberta population. This phenomenon is most likely due to the presence of oil sands operations in the area which would attract people with community college education.

Turning to Table 19, we see that the majority of people migrating to Fort McMurray have previously resided in Alberta, followed by those who have arrived from other provinces, and from outside Canada.

Table 20 shows that the mobility status of Fort McMurray differs greatly from those living in Alberta. For example, only 16.8% of Fort McMurray residents in 1976 lived at the same address in 1971, compared with 44.4% of Alberta residents. Only one-third (34.3%) of Fort McMurray residents lived within the municipality in 1971, compared with over two-thirds (69.8%) of Alberta residents. It is interesting to note, too, that there is little difference in the mobility status of male and female residents in Fort McMurray.

To summarize the demographic characteristics of Fort McMurray, the population of this community has increased rapidly to represent all but 6% of the population in the AOSERP Study Area. Although the rate of natural increase has been about twice the Alberta rate, migration into Fort McMurray has accounted for most of the community's population growth. Moreover, in-migration has altered the characteristics of Fort McMurray's population from that of an older, less educated population with an over-representation

of males, to a much younger population with a more equalized male/female ratio.

Recent years have seen an increase in the percentage of married people in the community, indicating that more families have moved into the area. A higher marriage rate has also been reported in Fort McMurray since oil sands development began although this rate is still below that of Alberta.

Since 1961, the proportion of English speaking people in the community has increased. Not surprisingly, therefore, there has also been an increase in the percentage of the Fort McMurray population with British ancestry with a noticeable reduction in the percentage of the population with French and Native Indian ancestry. A shift in the population from Roman Catholic to Protestant religious orientation is also evident.

Finally, Fort McMurray's population may be characterized as being more mobile than the Alberta population. In fact, the majority of Fort McMurray's residents in 1976 had moved to the community during the preceding five years, particularly from other provinces and other localities within Alberta.

### 3.3.2 Fort Chipewyan

As shown in Table 21, the population of Fort Chipewyan is characterized by a relatively large percentage under the age of 20 years and by a large cohort 55 years and older. Furthermore, this bimodal population distribution has been in existence since 1961. While the Fort McMurray population under 30 years of age has decreased from 51.4% in 1961 to 43.0% by 1976, it increased in Fort Chipewyan from 52.1% of the total population in 1961 to 53.8% by 1976. With respect to the population 55 years and older, 11.3% of the Fort Chipewyan population was in this age group in 1976 compared with 12.5% in 1961. In contrast, only 2.1% of the Fort McMurray population in 1979 was 55 years and older.

Turning to Table 22, we see that the male/female ratio has decreased somewhat from 110.3 in 1961 to 100.9 by 1971, before increasing to 105.2 in 1976. Although this indicates some increase

in the percentage of women in the population, the change is not significant.

Similarly, there has been no major change in the marital status of the Fort Chipewyan population between 1961 and 1976. There was some increase in the percentage of unmarried residents in the community between 1961 and 1971, although it decreased again in 1976 (Table 23).

The English speaking population in Fort Chipewyan increased from 23.6% in 1961 to 44.2% by 1971, before decreasing to 34.5% in 1976 (Table 24). Moreover, males are more likely to be English speaking than females in this community.

Although the 1961 and 1976 data are not exactly comparable, it is evident that the percentage of the Fort Chipewyan population with less than grade 9 education has decreased over these years (Table 25). Nevertheless, the percentage of the population of Fort Chipewyan with less than grade 9 education has continued to be much higher than for Alberta. In 1976, 55.0% of the community's population 15 years and older had less than grade 9 education, compared with only 18.2% of those in Alberta.

In spite of the relatively low educational levels in Fort Chipewyan, an unexpectedly large percentage of the population has postsecondary non-university education. This is particularly evident among males where 15.8% had postsecondary non-university education in 1976, compared with 17.2% for Alberta.

To summarize the demographic characteristics of Fort Chipewyan, the age distribution of the community has changed very little since 1961 with a relatively large percentage of younger and older population. Similarly, the male/female ratio has decreased only slightly over the years. No significant alteration in the marital status of the community is evident, either.

The percentage of the English speaking population has increased since 1961, but was lower in 1976 than in 1971. The community is still mostly comprised of Native Indian speaking people.

While the educational level of the population in Fort

Chipewyan has increased somewhat between 1961 and 1976, it is still well below that of Alberta. An unusually large percentage of males with postsecondary non-university education was reported in the community in 1976, however.

### 3.3.3 Anzac, Fort Mackay and Surrounding Area

As may be seen in Table 26, there has been little change in the age distribution of the population of Anzac, Fort Mackay, and the surrounding area between 1961 and 1976. The percentage of the population under 20 years of age has remained at just over one-half of the population (52.6% in 1961, 52.2% in 1976). The percentage of the population 55 years and over has also remained relatively constant over the years, ranging from 12.9% in 1966 to 9.8% in 1976.

While little change has occurred in the age distribution of the population, the percentage of males in the area has continued to increase between 1961 and 1976. In 1961, the male/female ratio was 115.6; by 1976, it had increased to 133.3 (Table 27).

Turning to Table 28, we see that the marital status of the population has not changed significantly between 1961 and 1976. In 1961, 60.2% of the population was single, compared with 57.1% by 1976.

The percentage of the population in Anzac, Fort Mackay, and the surrounding area that speaks English as a mother tongue has increased from 47.3% in 1961 to 52.9% by 1976 (Table 29). Similar to Fort Chipewyan, the male population in the area is more likely to be English speaking than the female population. Native Indian is the other major mother tongue in the area.

The percentage of the population with less than grade 9 education has decreased somewhat between 1961 and 1976 (Table 30). However, this percentage was still two and one-half times higher than that for Alberta in 1976 (48.8% vs 18.2%).

Similar to the educational characteristics of Fort Chipewyan, there exists a relatively large cohort of male residents

in Anzac, Fort Mackay, and the surrounding area with a postsecondary non-university. Based on 1976 data, 17.4% of the male residents in the area had a postsecondary non-university education, compared with 17.2% of males living in Alberta. In contrast, only 5.6% of females in the area had a postsecondary non-university education. This compares with 18.4% of females living in Alberta.

To summarize, the age distribution and marital status characteristics for Anzac, Fort Mackay, and the surrounding area have not significantly changed since 1961. However, the percentage of females in the population has decreased considerably over this period of time. In addition, the percentage of the population whose mother tongue is English has increased slightly since 1961. Also, the overall educational level of the population is somewhat higher in recent years. Notably, males with postsecondary non-university education represent an unexpectedly large percentage of the population (the same percentage as for Alberta), considering that the overall educational level for the area is considerably lower than that for Alberta.



Table 3. Alberta Oil Sands Environmental Research Program Study Area<sup>(1)</sup>: Population by Location for Selected Years

Year	Ft. McMurray		Ft. Chipewyan		Ft. MacKay		Anzac		Tar Island		Surrounding AOSERP Study Area		Total Population of Area	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
1941	962 <sup>(2)</sup>	53.3	705	39.0	36	2.0	17	0.9	-	-	86	4.8	1806	100
1951	926 <sup>(2)</sup>	59.4	453	29.0	46	2.9	40	2.6	-	-	95	6.1	1560	100
1956	1110	64.9	304	17.8	59	3.5	84	4.9	-	-	152	8.9	1710	100
1961	1186	49.3	717	29.8	187	7.8	154	6.4	-	-	161	6.7	2405	100
1966	2614	61.5	1032	24.3	230	5.4	224	5.3	119	2.8	27	0.6	4254	100
1971	6847	80.7	1124	13.2	207	2.4	119	1.4	46	0.5	143	1.7	8486	100
1976	15424	90.9	1189	7.0	169	1.0	138	0.8	-	-	46	0.3	16966	100
1979 <sup>(3)</sup>	25800	94.0	1250	4.6	175	0.6	150	0.5	-	-	60	0.2	27435	100

Notes: (1) Does not include population on Indian reserves or temporary population in the Study Area.

(2) Includes total population within township for 1941. McMurray was not incorporated until 1947 as a village and 1948 as a town.

(3) Estimated

Sources: a) Statistics Canada. 1951 Census of Canada. Supply and Services Canada: Ottawa. Volume 1.

b) Statistics Canada. 1956 Census of Canada. Supply and Services Canada: Ottawa. Cat. #92-501.

c) Statistics Canada. 1961 Census of Canada. Supply and Services Canada: Ottawa. Cat. #92-530.

d) Statistics Canada. 1971 Census of Canada. Supply and Services Canada: Ottawa. Cat. #92-711.

e) Statistics Canada. Population for Geographical Townships in Quebec, Ontario and the Prairie Provinces, 1971 and 1976. Working Paper Document #DD-76-54. March, 1979

Table 4. Surrounding AOSERP Study Area: population by township and range for selected years.

Range <sup>(3)</sup>	Township	1941	1951	1956	1961	1966	1971	1976 <sup>(2)</sup>
6	84	14	17	33	-	-	-	-
6	85	2	-	-	-	-	-	-
6	108	-	-	-	-	-	-	6
6	109	-	-	11	-	-	-	-
7	85	-	11	-	23	-	-	-
7	87	-	13	-	-	-	-	-
7	108	8	-	-	-	-	-	-
7	114	13	-	-	-	-	-	-
8	85	-	-	13	-	-	-	-
8	88	-	2	58	47	-	-	-
8	108	3	-	-	-	-	-	-
8	109	-	-	10	5	-	-	-
9	85	-	-	-	23 (108)	-	-	-
9	88	12	-	-	-	-	36	-
9	89	-	-	-	-	-	93	6
9	90	-	-	-	8	7	-	-
9	92	3	-	-	-	-	-	-
9	104	-	-	-	13	15	-	-
9	106	-	-	-	16	-	13	34
9	109	10	46	17	9	2	-	-
10	93	1	-	-	2	-	-	-
10	97	12	-	-	-	-	-	-
11	95	5	-	10	-	-	-	-
11	96	2	-	-	14	-	-	-
11	97	1	6	-	1	3	1	-
TOTAL		86	95	152	161 (246)	27	143	46

Notes: (1) Excludes Fort McMurray, Fort Chipewyan, Fort Mackay, Anzac and Indian Reservations.

(2) Includes only geographical townships with populations of 5 or more in 1976.

(3) All ranges listed are west of the fourth meridian.

Sources: a) Statistics Canada. 1951 Census of Canada. Supply and Services Canada: Ottawa. Volume 1.

b) Statistics Canada. 1956 Census of Canada. Supply and Services Canada: Ottawa. Cat. #92-501

c) Statistics Canada. 1961 Census of Canada. Supply and Services Canada: Ottawa. Cat. #92-530

d) Statistics Canada. 1971 Census of Canada. Supply and Services Canada: Ottawa. Cat. #92-711.

e) Statistics Canada. Population for Geographical Townships in Quebec, Ontario, and the Prairie Provinces, 1971 and 1976. Working Paper Document # DD-76-54. March, 1979.

Table 5. Fort McMurray and Alberta: population<sup>(1)</sup> and population estimates<sup>(2)</sup> for selected years.

<u>Year</u>	<u>Ft. McMurray</u>	<u>Alberta</u>
1961	1,186	1,332,000
1962	1,389	1,369,000
1963	1,627	1,403,000
1964	1,906	1,430,000
1965	2,232	1,450,000
1966	2,614	1,463,200
1967	3,169	1,490,000
1968	3,842	1,524,000
1969	4,658	1,559,000
1970	5,648	1,595,000
1971	6,847	1,627,900
1972	8,055	1,657,300
1973	9,475	1,689,500
1974	11,146	1,722,400
1975	13,112	1,778,300
1976	15,424	1,838,000
1977	20,340	1,896,400
1978	24,580	1,952,100
1979	25,802	2,008,900

Average Annual Change

1961 - 1965	17.1%	2.2%
1966 - 1970	21.2%	1.9%
1971 - 1975	17.6%	2.2%
1976 - 1979	19.2%	3.1%

- NOTES: (1) For Ft. McMurray and Alberta, figures for 1961, 1966, 1971, 1976 are census population data.
- (2) Ft. McMurray intercensal figures before 1976 are based upon the author's interpolation of census figures by using logarithmic scaling. Figures for 1977, 1978, 1979 are from the Ft. McMurray Municipal census source. Alberta figures are from the Statistics Canada source for estimates of population.

- Sources: a) Statistics Canada. Estimates of Population for Canada and the Provinces. Supply and Services: Ottawa. Cat. #91-201. Latest issue.
- b) Statistics Canada. 1971 Census of Canada. Supply and Services Canada: Ottawa. Cat. #92-702.
- c) Statistics Canada. 1976 Census of Canada. Supply and Services Canada: Ottawa. Cat. #92-805
- d) New Town of Ft. McMurray. 1979 Municipal Census. December, 1979.

Table 6. Fort McMurray: population by age groups for selected years

Age	1961		1966		1971		1976		1979	
	N	%	N	%	N	%	N	%	N	%
0 - 4	196	16.5	423	16.2	1100	16.1	2030	13.2	3020	11.7
5 - 9	167	14.1	328	12.5	1050	15.3	1930	12.5	3045	11.8
10 - 14	143	12.1	267	10.2	795	11.6	1600	10.4	2685	10.4
15 - 19	103	8.7	195	7.5	580	8.5	1375	8.9	2350	9.1
20 - 24	55	4.6	262	10.0	675	9.9	1905	12.4	3455	13.4
25 - 29	137	11.6	220	8.4	760	11.1	1965	12.7	3405	13.2
30 - 34			194	7.4	535	7.8	1475	9.6	2940	11.4
35 - 39	139	11.7	165	6.3	445	6.5	1035	6.7	1830	7.1
40 - 44			144	5.5	270	3.9	715	4.6	1240	4.8
45 - 49	105	8.9	108	4.1	230	3.4	480	3.1	750	2.9
50 - 54			103	3.9	145	2.1	395	2.6	515	2.0
55 - 59	75	6.3	71	2.7	110	1.6	245	1.6	285	1.1
60 - 64			57	2.2	60	0.9	150	1.0	155	0.6
65 - 69	22	1.9	39	1.5	45	0.7	60	0.4	50	0.2
70 - 74	44	3.7	16	0.6	25	0.4	25	0.2	25	0.1
75 +			22	0.8	25	0.4	50	0.3	25	0.1
TOTAL	1186	100%	2614	100%	6850	100%	15425	100%	25800	100%

Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #10141, page 488.

b) Statistics Canada. 1966 Census of Canada. Microfilm #10103, pages 18499-18500.

c) Statistics Canada. 1971 Census of Canada. Microfilm #10305, page 977.

d) Statistics Canada. 1976 Census of Canada. Microfiche #SDDEMA11, pages 1594 - 1597.

3) New Town of Fort McMurray. 1979 Municipal Census. December 1979, page 4.

Table 7. Fort McMurray: males per 100 females by age groups for selected years.

Age	1961	1966	1971	1976	1978
0 - 4	127.9	118.0	102.8	100.0	101.5
5 - 9	108.8	102.5	90.9	99.0	100.7
10 - 14	116.7	128.2	114.9	97.5	98.9
15 - 19	90.7	116.7	114.8	103.7	102.9
20 - 24	129.2	79.5	90.1	99.0	99.4
25 - 29	101.5	150.0	100.0	105.2	114.6
30 - 34		165.8	127.7	122.6	120.2
35 - 39	127.9	153.8	128.2	130.0	139.3
40 - 44		140.0	130.4	155.4	136.7
45 - 49	69.4	157.1	125.0	137.5	165.4
50 - 54		145.2	141.7	119.4	140.0
55 - 59	240.9	184.0	144.4	140.0	157.5
60 - 64		307.1	300.0	163.6	125.4
65 - 69	214.3	143.8	80.0	175.0	173.7
70 +	300.0	322.2	233.3	100.0	93.8
ALL AGES	119.2	128.7	109.2	109.3	111.6

- Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #10141, page 488.  
b) Statistics Canada. 1966 Census of Canada. Microfilm #10103, pages 18499,18500.  
c) Statistics Canada. 1971 Census of Canada. Microfilm #10305, page 977.  
d) Statistics Canada. 1976 Census of Canada. Microfiche #SDDEMA11, pages 1594-1597.  
e) Alsands Project Group. Regional Socio-Economic Impact Assessment, Vol. 2  
January, 1979. Table V-3 (Original source: Alberta Dept. of Municipal Affairs)

Table 8. Fort McMurray and Alberta: live births for selected years.

Year	FT. McMURRAY				ALBERTA
	Male live Births	Female Live Births	Total live Births	Live Birth Rate (1)	Live Birt Rate (1)
1961	11	8	19	16.0	29.2
1962	10	9	29	20.9	28.3
1963	17	13	30	18.4	27.4
1964	20	14	34	17.8	25.3
1965	36	22	58	26.0	22.5
1966	45	48	93	35.6	20.9
1967	61	77	138	43.5	20.6
1968	101	86	187	48.7	19.8
1969	107	103	210	45.1	19.8
1970	99	95	194	34.3	20.0
1971	123	112	235	34.3	18.8
1972	123	142	265	32.9	17.7
1973	131	97	228	24.1	17.4
1974	118	138	256	23.0	17.4
1975	197	172	369	28.1	17.8
1976	246	101	447	29.0	18.0
<u>Average</u>					
1961-1964	15	14	29	18.3	27.5
1963-1966	30	24	54	24.5	24.0
1965-1968	61	58	119	38.5	21.0
1967-1970	92	90	182	42.8	20.2
1969-1972	113	113	226	36.5	19.1
1971-1974	124	122	246	28.5	17.8
1963-1976	173	152	325	26.0	17.7

NOTS: (1) Per 1,000 population. Ft. McMurray population based upon census data and the author's intercensal estimates.

Sources: (a) Statistics Canada. Vital Statistics. Supply and Services Canada: Ottawa. Cat. #84-204. For years 1961-1973.

(b) Statistics Canada. Principal Vital Statistics by Local Areas. Supply and Services Canada: Ottawa. Cat. #94-207. For years 1974-1976.

Table 9. Fort McMurray and Alberta: deaths for selected years.

Year	FT. McMURRAY				ALBERTA
	Male Deaths	Female Deaths	Total Deaths	Death Rate (1)	Death Rate (1)
1961		N/A	8	6.7	6.7
1962		N/A	10	7.2	6.8
1963		N/A	6	3.7	6.7
1964		N/A	12	6.3	6.6
1965		N/A	14	6.3	6.6
1966		N/A	10	3.8	6.6
1967		N/A	13	4.1	6.4
1968		N/A	17	4.4	6.5
1969		N/A	17	3.6	6.4
1970		N/A	14	2.5	6.3
1971	22	13	35	5.1	6.5
1972	12	5	17	2.1	6.5
1973	16	5	21	2.2	6.4
1974	15	6	21	1.9	6.6
1975	22	8	30	2.3	6.4
1976	40	16	56	3.6	6.3
<hr/>					
<u>Average</u>					
1961-1964		N/A	9	6.0	6.7
1963-1966		N/A	11	5.0	6.6
1965-1968		N/A	14	4.7	6.5
1967-1970		N/A	15	3.7	6.4
1969-1972		N/A	21	3.3	6.4
1971-1974	16	7	24	2.8	6.5
1973-1976	23	9	32	2.5	6.4

NOTES: (1) Per 1,000 population. Ft. McMurray population based upon census data and the author's intercensal estimates.

Sources: a) Statistics Canada. Vital Statistics. Supply and Services Canada: Ottawa. Cat.#84-204. For years 1961-1973.

b) Statistics Canada. Principal Vital Statistics by Local Areas. Supply and Services Canada: Ottawa. Cat. #84-207. For years 1974-1976.

Table 10. Fort McMurray and Alberta: infant deaths for selected years

Year	FT. McMURRAY				ALBERTA
	Neonatal Deaths (1)	Post-neonatal Deaths (2)	Total Infant Deaths	Infant Death Rate (3)	Infant Death Rate (3)
1961	1	2	3	157.9	26.8
1962	4	2	6	206.9	25.4
1963	-	1	1	331.3	23.6
1964	3	4	7	205.9	23.9
1965	2	1	3	51.7	24.0
1966	3	1	4	43.0	20.9
1967	4	3	7	50.7	20.0
1968	3	-	3	16.0	20.1
1969	2	2	4	19.0	19.0
1970	5	1	6	30.9	19.1
1971	5	4	9	38.3	17.9
1972	2	-	3	7.5	17.5
1973	2	1	3	13.2	14.2
1974	1	-	1	3.9	15.1
1975	2	-	2	5.4	14.9
1976	6	3	9	20.1	14.2
<hr/>					
Average					
1961-1964	2	2	4	151.0	24.9
1963-1966	2	2	4	83.5	23.1
1965-1968	3	1	4	40.4	21.3
1967-1970	4	2	5	29.2	19.6
1969-1972	4	2	5	23.9	18.4
1971-1974	3	1	4	15.7	16.2
1973-1976	3	1	4	10.7	14.6

- NOTES: (1) Infant deaths less than 28 days after birth.  
 (2) Infant deaths occurring between 28 days and 1 year after birth.  
 (3) Per 1,000 live births.

Sources: a) Statistics Canada. Vital Statistics. Supply and Services Canada: Ottawa. Cat. #84-204. For years 1961-1973.

b) Statistics Canada. Principal Vital Statistics by Local Areas. Supply and Services Canada: Ottawa. Cat. #84-207. For years 1974-1976.



Table 11. Fort McMurray and Alberta: Sources of population increase for selected years.  
(All figures expressed as rate per 1,000 population.)

Year	Natural Increase <sup>(1)</sup>		Total Net Migration <sup>(2)</sup>		Total Population Increase	
	Ft. McMurray	Alberta	Ft. McMurray	Alberta	Ft. McMurray	Alberta
1961	N/A	N/A	N/A	N/A	N/A	N/A
1962	13.7	21.5	132.4	5.5	146.1	27.0
1963	14.7	20.7	131.6	3.5	146.3	24.2
1964	11.5	18.7	134.9	0.2	146.4	18.9
1965	19.7	15.9	126.4	(2.1)	146.1	13.8
1966	31.8	14.3	114.4	(5.3)	146.2	9.0
1967	39.4	14.2	135.7	3.8	175.1	18.0
1968	44.3	13.3	130.9	9.0	175.2	22.3
1969	41.5	13.4	133.7	9.1	175.2	22.5
1970	31.8	13.7	143.5	8.9	175.3	22.6
1971	29.2	12.3	145.9	7.9	175.1	20.2
1972	30.8	11.2	119.2	6.5	150.0	17.7
1973	21.9	11.0	128.0	8.1	149.9	19.1
1974	21.1	10.8	128.8	8.3	149.9	19.1
1975	25.8	11.4	124.1	20.0	149.9	31.4
1976	25.4	11.7	124.5	20.8	149.9	32.5
<u>Average</u>						
1961 - 1964	13.3	20.3	133.0	3.1	146.3	23.4
1963 - 1966	19.4	17.4	126.8	(0.9)	146.3	19.9
1965 - 1968	33.8	14.4	126.8	1.4	160.7	15.8
1967 - 1970	39.3	13.7	136.0	7.7	175.2	21.4
1969 - 1972	33.3	12.7	135.5	8.1	168.9	20.8
1971 - 1974	25.8	11.3	130.5	7.7	156.2	19.0
1973 - 1976	23.6	11.2	126.4	14.3	149.9	25.5

NOTES: (1) Live births minus deaths

(2) Calculated as the residual difference of total population increase minus natural increase.  
Net out-migration is shown in brackets.

Sources: a) Statistics Canada. Vital Statistics. Supply and Services Canada: Ottawa. Cat. #84-204. For years 1961 - 1973.

b) Statistics Canada. Principal Vital Statistics by Local Area. Supply and Services Canada: Ottawa. Cat. #84-207. For years 1974 - 1976.

c) Statistics Canada. Estimates of Population for Canada and the Provinces. Supply and Services Canada: Ottawa. Cat. #91-201.

Table 12. Fort McMurray: Population by marital status by sex for selected years.

Marital Status	1961		1966		1971		1976	
	N	%	N	%	N	%	N	%
<u>MALES</u>								
Single	398	61.7	854	58.1	2045	57.1	4220	52.4
Married (1)	227	35.2	590	40.1	1445	40.4	3615	44.9
Separated	- N/A -		- N/A -		40	1.1	85	1.1
Widowed	16	2.5	19	1.3	25	0.7	30	0.4
Divorced	4	0.6	8	0.5	25	0.7	95	1.2
<u>Subtotal: Males</u>	<u>645</u>	<u>100%</u>	<u>1471</u>	<u>100%</u>	<u>3580</u>	<u>100%</u>	<u>8045</u>	<u>100%</u>
<u>FEMALES</u>								
Single	308	56.9	598	52.3	1765	54.0	3640	49.4
Married (1)	217	40.1	523	45.8	1400	42.8	3520	47.8
Separated	- N/A -		- N/A -		50	1.5	70	1.0
Widowed	16	3.0	20	1.7	40	1.2	90	1.2
Divorced	-	-	2	0.2	15	0.5	45	0.6
<u>Subtotal: Females</u>	<u>541</u>	<u>100%</u>	<u>1143</u>	<u>100%</u>	<u>3270</u>	<u>100%</u>	<u>7365</u>	<u>100%</u>
<u>BOTH SEXES</u>								
Single	706	59.5	1452	55.5	3810	55.6	7860	51.0
Married (1)	444	37.4	1113	42.6	2845	41.5	7135	46.3
Separated	- N/A -		- N/A -		90	1.3	155	1.0
Widowed	32	2.7	39	1.5	65	1.0	120	0.8
Divorced	4	0.4	10	0.4	40	0.6	140	0.9
<u>TOTAL POPULATION</u>	<u>1186</u>	<u>100%</u>	<u>2614</u>	<u>100%</u>	<u>6850</u>	<u>100%</u>	<u>15410</u>	<u>100%</u>

Notes: (1) Includes separated individuals in data before 1971.

- Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #10151, page 487.  
 b) Statistics Canada. 1967 Census of Canada. Microfilm #10113, page 513.  
 c) Statistics Canada. 1971 Census of Canada. Microfilm #MPP002, page 47.  
 d) Statistics Canada. 1976 Census of Canada. Microfiche #SDMA12, page 8661.

Table 13. Fort McMurray and Alberta: marriages for selected years.

Year	FT. McMURRAY		ALBERTA	
	Number of Marriages	Marriages per 1,000 population	Number of Marriages	Marriages per 1,000 population
1961	3	2.5	10,474	7.9
1962	5	3.6	10,423	7.6
1963	3	1.8	10,163	7.2
1964	3	1.6	10,643	7.4
1965	12	5.4	11,209	7.7
1966	16	6.4	11,879	8.1
1967	24	7.6	12,903	8.7
1968	29	7.6	13,640	8.9
1969	38	8.2	14,846	9.5
1970	38	6.7	15,285	9.6
1971	39	5.7	15,614	9.6
1972	56	7.0	16,345	9.9
1973	41	4.3	16,280	9.7
1974	51	4.6	16,691	9.7
1975	80	6.1	17,520	9.9
1976	101	6.6	17,750	9.7
<hr/>				
<u>Average</u>				
1961-1964	4	2.4	10,424	7.5
1963-1966	9	3.8	10,971	7.6
1965-1968	20	6.8	12,408	8.4
1967-1970	32	7.5	14,169	9.2
1969-1972	43	6.9	15,523	9.7
1971-1974	47	5.4	15,733	9.7
1973-1976	68	5.4	17,060	9.8

Sources: a) Statistics Canada. Vital Statistics. Supply and Services Canada: Ottawa. Cat #84-204. For years 1961-1973.

b) Statistics Canada. Principal Vital Statistics by Local Areas. Supply and Services Canada: Ottawa. Cat. #84-207, years 1974-1976.

Table 14. Fort McMurray: population by mother tongue for selected years.

Mother Tongue	1961		1971		1976	
	N	%	N	%	N	%
English	852	71.8	5625	82.1	13270	86.0
French	102	8.6	425	6.2	645	4.2
Non-English/French	232	19.6	805	11.7	1510	9.8
Eskimo	- N/A -		205	3.0	-	-
Native Indian	- N/A -				110	0.7
Italian	- N/A -		15	0.2	10	0.1
German	- N/A -		120	1.8	240	1.6
Netherlands	- N/A -		45	0.7	75	0.5
Polish	- N/A -		30	0.4	25	0.2
Ukranian	- N/A -		140	2.0	240	1.6
Other	- N/A -		250	3.6	810	5.3
<u>Of Which:</u>						
Baltic	- N/A -		- N/A -		10	0.1
Celtic	- N/A -		- N/A -		10	0.1
Chinese and Japanese	- N/A -		- N/A -		120	0.8
Croatian, Serbian, etc.	- N/A -		- N/A -		25	0.2
Czeck and Slovak	- N/A -		- N/A -		25	0.2
Greek	- N/A -		- N/A -		5	-
Indo-Pakistani	- N/A -		- N/A -		30	0.2
Magyar	- N/A -		- N/A -		20	0.1
Portugese	- N/A -		- N/A -		10	0.1
Russian, Scandinavian	- N/A -		- N/A -		-	-
Spanish	- N/A -		- N/A -		20	0.1
Yiddish	- N/A -		- N/A -		-	-
Not Stated	- N/A -		- N/A -		415	2.7
Other	- N/A -		- N/A -		85	0.6
TOTAL POPULATION	1186	100%	6855	100%	15425	100%

Sources: a) Statistics Canada. 1961 Census of Canada Microfilm #10144, page 479.

b) Statistics Canada. 1971 Census of Canada Microfilm #MPP003-2A, page 195.

c) Statistics Canada. 1976 Census of Canada Microfiche #SDDEMA41, pages 2533-2534.

Table 15. Fort McMurray: population by ethnic group for selected years.

Ethnic Origin	1961		1971	
	N	%	N	%
British Isles	419	35.3	3295	47.9
French	282	23.8	900	13.1
Asian	21	1.8	125	1.8
German	41	3.5	610	8.9
Italian	6	0.5	45	0.7
Native Indian/Eskimo	141	11.9	450	6.5
Jewish	1	0.1	-	-
Netherlands	24	2.0	165	2.4
Polish	21	1.8	175	2.5
Russian	23	1.9	40	0.6
Scandinavian	87	7.3	235	3.4
Ukrainian	63	5.3	515	7.5
Other	67	5.6	335	4.9
TOTAL POPULATION	1186	100%	6875	100%

Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #10148, page 488.

b) Statistics Canada. 1971 Census of Canada. Microfilm #MPP008-2B, page 99.

Table 16. Fort McMurray: population by religion for selected years.

Religion	1961		1971	
	N	%	N	%
Anglican	160	13.4	985	14.3
Baptist	24	2.0	285	4.1
Greek Orthodox	18	1.5	160	2.3
Jewish	1	0.1	-	-
Lutheran	35	3.0	250	3.6
Mennonite	-	-	40	0.6
Pentacostal	5	0.4	80	1.2
Presbyterian	14	1.2	130	1.9
Roman Catholic	717	60.5	2660	38.7
Salvation Army	-N/A-		5	0.1
Ukranian Catholic	2	0.2	90	1.3
United Church	163	13.7	1450	21.1
Other Religions	47	4.0	370	5.4
No Religion	-N/A-		355	5.2
TOTAL POPULATION	1186	100%	6880	100%

Sources: a) Statistics Canada. 1961 Census of Canada  
Microfilm #10156, page 488.

b) Statistics Canada. 1971 Census of Canada  
Microfilm #MPP009-2B, page 95.

Table 17. Fort McMurray and Alberta: specified population groups by level of schooling and sex for selected years.

Level Attained	1961, Population 5 Years and Over Not Attending		Population 15 Years and Over, Attending & Not Attending.				
			1971		1976		1979 <sup>(3)</sup>
	Ft. McMurray <sup>(2)</sup>	Alberta	Ft. McMurray	Alberta	Ft. McMurray	Alberta	Ft. McMurray
	%	%	%	%	%	%	%
<b>MALES</b>							
No Schooling	15.1	6.8	24.3	27.6	13.2	19.5	N/A
Less than Grade 5	11.9	6.2					
Grades 5 - 8	38.4	34.0	65.0	58.2	24.0	24.9	N/A
Grades 9 -10	14.6	22.6					
Grades 11-13	15.3	23.2					
Post-Secondary, Non-University	N/A	N/A	11.2	14.0	26.0	17.2	N/A
Post-Secondary, University (1)	4.8	7.2					
Subtotal: Males	100%	100%	100%	100%	100%	100%	N/A
<b>FEMALES</b>							
No Schooling	23.3	7.2	20.6	22.6	12.1	16.9	N/A
Less than Grade 5	8.5	4.8					
Grades 5 - 8	35.6	26.8	69.5	66.4	21.3	19.3	N/A
Grades 9 -10	14.8	23.2					
Grades 11-13	13.2	31.8					
Post-Secondary, Non-University	N/A	N/A	9.9	11.0	23.7	18.4	N/A
Post-Secondary, University (1)	4.4	6.2					
Subtotal: Females	100%	100%	100%	100%	100%	100%	N/A
<b>BOTH SEXES</b>							
No Schooling	18.8	7.0	22.4	25.3	12.7	18.2	5.4
Less than Grade 5	10.4	5.5					
Grades 5 - 8	37.1	30.5	67.0	62.2	19.8	19.3	16.6
Grades 9 -10	14.7	22.9					
Grades 11-13	14.4	27.3					
Post-Secondary, Non-University	N/A	N/A	10.6	12.5	24.9	17.8	25.7
Post-Secondary, University (1)	4.6	6.7					
TOTAL (N)	100% (695)	100% (832,906)	100% (3,920)	100% (1,113,420)	100% (9860)	100% (1,334,905)	100% (14405)

Notes: (1) For 1976, University also includes people with both university and other post-secondary education.

(2) Based upon data for level of schooling of all ages, children under 5 years have been removed from the "no schooling" category for comparability with Alberta figures.

(3) Total does not include 3039 non-respondents.

Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #10164, page 2428.

b) Statistics Canada. 1961 Census of Canada. Supply and Services Canada: Ottawa. Cat. #92-55, pages 73-9, 73-10.

c) Statistics Canada. 1971 Census of Canada. Microfilm #500-211-C, page 4968

d) Statistics Canada. 1971 Census of Canada. Supply and Services Canada: Ottawa. Cat. #92-743, page 5-19.

e) Statistics Canada. 1976 Census of Canada. Microfiche #SDCCB11, page 7465.

f) Statistics Canada. 1976 Census of Canada. Supply and Services Canada: Ottawa. Cat. #92-827, pages 30-11, 30-12.

g) New Town of Fort McMurray. 1979 Municipal Census. December, 1979, page 19.

68

Table 18. Fort McMurray and Alberta: population 15 years and over by level of schooling and age, 1976.

Level of Schooling	15-24 Years		25-34 Years		35-44 Years		45-54 Years		55-64 Years		65 + Years		All Ages (15 Years and Over)	
	Ft. McMurray	Alberta	Ft. McMurray	Alberta	Ft. McMurray	Alberta	Ft. McMurray	Alberta	Ft. McMurray	Alberta	Ft. McMurray	Alberta	Ft. McMurray	Alberta
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Less than Grade 9	6.2	6.8	8.7	6.9	16.6	16.0	23.0	24.9	38.0	35.4	80.8	57.4	12.7	18.2
Grades 9 - 10	24.2	24.0	15.6	12.2	20.9	20.0	22.4	21.6	13.9	20.6	7.7	15.4	19.8	19.3
Grades 11 - 13	38.2	39.0	24.2	27.3	20.2	24.2	16.1	21.4	15.2	18.7	7.7	10.8	26.7	27.5
Post-Secondary, Non-University	19.2	14.9	31.3	26.3	25.4	22.0	23.6	17.9	22.8	14.4	3.8	9.6	24.9	17.8
Post-Secondary, University	12.2	15.3	30.2	27.3	16.9	17.8	14.9	14.2	12.1	11.0	-	6.7	15.8	17.2
TOTAL (N)	100% (3285)	100% (379160)	100% (3455)	100% (294280)	100% (1750)	100% (204855)	100% (870)	100% (183340)	100% (395)	100% (135120)	100% (130)	100% (138140)	100% (9860)	100% (1334905)

Sources: a) Statistics Canada. 1976 Census of Canada. Microfiche #SDDEMB12, pages 8372-8374.

b) Statistics Canada. 1976 Census of Canada. Supply and Services Canada: Ottawa.  
Cat. #92-827, pages 30-11; Cat. #94-806, pages 14-17.



Table 19. Fort McMurray: population by previous place of residence for selected years.

Year	<u>Previous Residence</u>			Total
	Alberta	Other Provinces	Outside Canada	
	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>
1971 <sup>(1)</sup>	61.8	25.3	12.9	100%
1974	62.3	31.4	6.3	100%
1975	78.1	18.0	3.9	100%
1976 <sup>(2)</sup>	64.0	29.4	6.6	100%
1978	42.3	50.3	7.4	100%

Notes: (1) Based upon birthplace, not previous residence.

(2) Based upon migration of population 15 years and over between 1971-1976.

Sources: a) Peter C. Nichols and Associates Ltd. Overview of Local Economic Development in the Athabasca Oil Sands Region Since 1961.  
Alberta Oil Sands Environmental Research Program, March 1979.

b) Statistics Canada. 1976 Census of Canada. Microfiche  
# SDECOB12, pages 6779-6781.

Table 20. Fort McMurray and Alberta: population 15 years and over by mobility status and sex, 1976.

Mobility Status	Fort McMurray <sup>(1)</sup>		Alberta
	N	%	%
<u>MALES</u>			
Non-Movers	855	16.5	44.4
Movers Within Same Municipality	935	18.1	25.2
Migrants Within Same Province	1450	28.0	14.5
Migrants from Different Province	1605	31.0	10.9
Migrants from Outside Canada	330	6.4	3.8
<u>Subtotal: Males</u>	<u>5170</u>	<u>100%</u>	<u>100%</u>
<u>FEMALES</u>			
Non-Movers	765	16.9	44.5
Movers Within Same Municipality	765	16.9	25.6
Migrants Within Same Province	1365	30.2	15.0
Migrants from Different Province	1290	28.6	10.2
Migrants from Outside Canada	320	7.1	3.7
<u>Subtotal: Females</u>	<u>4515</u>	<u>100%</u>	<u>100%</u>
<u>BOTH SEXES</u>			
Non-Movers	1630	16.8	44.4
Movers Within Same Municipality	1695	17.5	25.4
Migrants Within Same Province	2815	29.1	14.8
Migrants from Different Province	2895	29.9	10.5
Migrants from Outside Canada	655	6.8	3.7
<u>TOTAL</u>	<u>9690</u>	<u>100%</u>	<u>100%</u>

Notes: (1) The 110 male and 60 female non-respondents are excluded.

Sources: a) Statistics Canada. 1976 Census of Canada.  
Microfiche #SDECOB12, pages 6779-6781.

b) Statistics Canada. 1976 Census of Canada.  
Supply and Services Canada: Ottawa.  
Cat. #94-807. pages 16-67 to 16-70.

Table 21. Fort Chipewyan: population by age groups for selected years.

Age	1961		1966		1971		1976	
	N	%	N	%	N	%	N	%
0 - 4	135	18.8	209	20.4	165	14.7	150	12.6
5 - 9	106	14.8	155	15.1	200	17.8	155	13.0
10 - 14	66	9.2	97	9.5	170	15.1	190	16.0
15 - 19	67	9.3	85	8.3	125	11.1	145	12.2
20 - 24	52	7.3	81	7.9	80	7.1	105	8.8
25 - 29	74	10.3	75	7.3	55	4.9	80	6.7
30 - 34			68	6.6	65	5.8	60	5.0
35 - 39	76	10.6	29	2.8	50	4.4	60	5.0
40 - 44			50	4.9	30	2.7	50	4.2
45 - 49	52	7.3	35	3.4	40	3.6	35	2.9
50 - 54			24	2.3	30	2.7	40	3.4
55 - 59	45	6.3	37	3.6	20	1.8	25	2.1
60 - 64			20	1.9	30	2.7	35	2.9
65 - 69	14	2.0	23	2.2	25	2.2	30	2.5
70 - 74	30	4.2	16	1.6	10	0.9	25	2.1
75 +			22	2.1	35	3.1	20	1.7
TOTAL	717	100%	1026	100%	1125	100%	1190	100%

- Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #10143, page 2018.
- b) Statistics Canada. 1966 Census of Canada. Microfilm #10107, page 2253.
- c) Statistics Canada. 1971 Census of Canada. Microfilm #10324, page 3188.
- d) Statistics Canada. 1976 Census of Canada. Microfiche #EAD6M11, pages 3978-3979.

Table 22. Fort Chipewyan: males per 100 females by age groups for selected years.

Age	1961	1966	1971	1976
0 - 4	73.1	86.6	100.0	76.5
5 - 9	130.0	84.5	100.0	93.8
10 - 14	127.6	102.1	73.7	94.7
15 - 19	131.0	203.6	92.3	86.7
20 - 24	92.6	107.7	166.7	133.3
25 - 29	117.6	92.3	100.0	88.9
30 - 34		126.7	85.7	140.0
35 - 39	94.9	123.1	150.0	120.0
40 - 44		117.4	100.0	150.0
45 - 49	100.0	94.4	100.0	100.0
50 - 54		60.0	100.0	125.0
55 - 59	150.0	94.7	50.0	100.0
60 - 64		233.3	150.0	100.0
65 - 69	250.0	91.7	150.0	100.0
70 +	172.7	171.4	166.7	200.0
ALL AGES	110.3	105.2	100.9	105.2

Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm # 10143, page 2018.

b) Statistics Canada. 1966 Census of Canada. Microfilm # 10107, page 2253.

c) Statistics Canada. 1971 Census of Canada. Microfilm # 10324, page 3188.

d) Statistics Canada. 1976 Census of Canada. Microfiche # EADEM11, pages 3978-3979.

Table 23. Fort Chipewyan: population by marital status and sex for selected years.

Marital Status	1961		1966		1971		1976	
	N	%	N	%	N	%	N	%
<u>MALES</u>								
Single	250	66.5	360	68.4	405	71.7	395	64.2
Married (1)	110	29.3	155	29.5	155	27.4	180	29.3
Separated	-N/A-		-N/A-		-N/A-		15	2.4
Widowed	16	4.3	9	1.7	5	0.9	15	2.4
Divorced	-	-	2	0.4	-	-	5	0.8
<u>Subtotal: Males</u>	<u>376</u>	<u>100%</u>	<u>526</u>	<u>100%</u>	<u>565</u>	<u>100%</u>	<u>615</u>	<u>100%</u>
<u>FEMALES</u>								
Single	208	61.0	311	62.2	390	69.6	365	62.9
Married (1)	117	34.3	164	32.8	150	26.8	180	31.0
Separated	-N/A-		-N/A-		-N/A-		10	1.7
Widowed	16	4.7	25	5.0	20	3.6	20	3.4
Divorced	-	-	-	-	-	-	-	-
<u>Subtotal: Females</u>	<u>341</u>	<u>100%</u>	<u>500</u>	<u>100%</u>	<u>560</u>	<u>100%</u>	<u>580</u>	<u>100%</u>
<u>BOTH SEXES</u>								
Single	458	63.9	671	65.4	790	70.2	755	63.4
Married (1)	227	31.7	319	31.1	300	26.7	360	30.3
Separated	-N/A-		-N/A-		-N/A-		25	2.1
Widowed	27	3.8	34	0.3	30	2.7	40	3.4
Divorced	-	-	2	0.2	-	-	5	0.4
<u>TOTAL POPULATION</u>	<u>717</u>	<u>100%</u>	<u>1026</u>	<u>100%</u>	<u>1125</u>	<u>100%</u>	<u>1190</u>	<u>100%</u>

Notes: (1) Includes separated individuals in data before 1976.

Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #10153, page 2427.

b) Statistics Canada. 1966 Census of Canada. Microfilm #10116, page 2253.

c) Statistics Canada. 1971 Census of Canada. Microfilm #10344, page 2975.

d) Statistics Canada. 1976 Census of Canada. Microfiche #EAD6MA12, page 3501.

Table 24. Fort Chipewyan: population by mother tongue and sex for selected years.

Mother Tongue	1961		1971		1976	
	N	%	N	%	N	%
<u>MALES</u>						
English	91	24.2	265	46.9	210	34.4
French	13	3.5	15	2.7	15	2.5
Native Indian	272	72.3	285	50.4	370	60.7
All Others					15	2.5
<u>Subtotal: Males</u>	<u>376</u>	<u>100%</u>	<u>565</u>	<u>100%</u>	<u>610</u>	<u>100%</u>
<u>FEMALES</u>						
English	78	22.9	225	40.2	195	33.6
French	17	5.0	15	2.7	10	1.7
Native Indian	246	72.1	315	56.3	345	59.5
All Others					30	5.2
<u>Subtotal: Females</u>	<u>341</u>	<u>100%</u>	<u>560</u>	<u>100%</u>	<u>580</u>	<u>100%</u>
<u>BOTH SEXES</u>						
English	169	23.6	495	44.2	410	34.5
French	30	4.2	30	2.7	25	2.1
Native Indian	518	72.2	605	54.0	720	60.5
All Others					35	2.9
<u>TOTAL POPULATION</u>	<u>717</u>	<u>100%</u>	<u>1120</u>	<u>100%</u>	<u>1190</u>	<u>100%</u>

Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #10146, page 2427.

b) Statistics Canada. 1971 Census of Canada. Microfilm #10329, page 3231.

c) Statistics Canada. 1976 Census of Canada. Microfiche #EADMA21, page 8660.

Table 25. Fort Chipewyan and Alberta: specified population groups by level of schooling and sex for selected years.

Level Attained	1961, Population 5 Years and Over, Not Attending		1976, Population 15 Years and Over, Attending and Not Attending	
	Ft. Chipewyan (2)	Alberta	Ft. Chipewyan	Alberta
	%	%	%	%
<b>MALES</b>				
No Schooling	34.2	6.8	56.6	19.5
Less than Grade 5	21.4	6.2		
Grades 5 - 8	28.6	34.0		
Grades 9 -10	7.7	22.6	14.5	19.2
Grades 11-13	5.1	23.2	7.9	24.9
Post-Secondary, Non-University	N/A	N/A	15.8	17.2
Post-Secondary, University (1)	3.0	7.2	5.3	19.2
<b>Subtotal: Males</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>FEMALES</b>				
No Schooling	34.2	7.2	53.8	16.9
Less than Grade 5	10.0	4.8		
Grades 5 - 8	39.5	26.8		
Grades 9 -10	8.4	23.2	20.0	19.3
Grades 11-13	6.3	31.8	10.8	30.2
Post Secondary, Non-University	N/A	N/A	10.8	18.4
Post-Secondary, University (1)	1.6	6.7	4.6	15.2
<b>Subtotal: Females</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>BOTH SEXES</b>				
No Schooling	34.2	7.0	55.0	18.2
Less than Grade 5	16.3	5.5		
Grades 5 - 8	33.5	30.5		
Grades 9 -10	8.0	22.9	17.9	19.3
Grades 11-13	5.7	27.3	8.6	27.5
Post-Secondary, Non-University	N/A	N/A	12.9	17.8
Post-Secondary, University (1)	2.4	6.7	5.7	17.7
<b>TOTAL (N)</b>	<b>100% (424)</b>	<b>100% (832,906)</b>	<b>100% (700)</b>	<b>100% (1,334,905)</b>

Notes: (1) For 1976 University also includes people with both university and other post-secondary education.

(2) Based upon data for level of schooling of all ages. Children under 5 years have been removed from the "no schooling" category for compatibility with Alberta figures.

Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #10164, page 2427.  
 b) Statistics Canada. 1961 Census of Canada. Supply and Services Canada: Ottawa. Cat. #92-550. pages 73-9, 73-10.  
 c) Statistics Canada. 1976 Census of Canada. Microfiche #EADMB12, page 7020.  
 d) Statistics Canada. 1976 Census of Canada. Supply and Services Canada: Ottawa. Cat. #92-827, pages 30-11, 30-12.

Table 26. Anzac, Fort Mackay and Surrounding Area: population by age groups for selected years.

Age	1961		1966		1971		1976	
	N	%	N	%	N	%	N	%
0 - 4	83	18.0	90	17.4	85	14.2	40	11.3
5 - 9	64	14.1	64	12.4	100	16.7	50	14.1
10 - 14	54	11.9	58	11.2	70	11.7	60	16.9
15 - 19	39	8.6	43	8.3	60	10.0	35	9.9
20 - 24	40	8.8	45	8.7	45	7.5	20	5.6
25 - 29	55	12.1	40	7.7	50	8.3	35	9.9
30 - 34			25	4.8	30	5.0	25	7.0
35 - 39	49	10.8	32	6.2	30	5.0	15	4.2
40 - 44			22	4.2	25	4.2	20	5.6
45 - 49	33	7.3	18	3.5	20	3.3	15	4.2
50 - 54			14	2.7	20	3.3	5	1.4
55 - 59	19	4.2	17	3.3	15	2.5	15	4.2
60 - 64			15	2.9	20	3.3	5	1.4
65 - 69	8	1.8	11	2.1	10	1.7	10	2.8
70 - 74	12	2.6	12	2.3	5	0.8	5	1.4
75 +			12	2.3	10	1.7	-	-
TOTAL	455	100%	518	100%	600	100%	355	100%

Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #10143, page 2018.

b) Statistics Canada. 1966 Census of Canada. Microfilm #10107, page 2254.

c) Statistics Canada. 1971 Census of Canada. Microfilm #10324, page 3180.

d) Statistics Canada. 1976 Census of Canada. Microfiche #EADEmall, page 3977.



Table 27. Anzac, Fort Mackay, and Surrounding Area: males per 100 females by age groups for selected years.

Age	1961	1966	1971	1976
0 - 4	74.5	119.5	183.3	150.0
5 - 9	88.2	100.0	100.0	200.0
10 - 14	86.2	61.1	100.0	100.0
15 - 19	85.7	87.0	100.0	133.3
20 - 24	150.0	136.8	125.0	150.0
25 - 29	] 139.1	166.7	100.0	133.3
30 - 34		212.5	100.0	66.7
35 - 39	] 133.0	220.0	200.0	200.0
40 - 44		175.0	100.0	300.0
45 - 49	] 371.4	125.0	150.0	50.0
50 - 54		180.0	200.0	no females
55 - 59	] 171.4	183.0	100.0	200.0
60 - 64		66.7	no females	-
65 - 69	no females	450.0	100.0	no females
70 +	140.0	242.9	150.0	no females
ALL AGES	115.6	126.2	128.3	133.3

- Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #10143, page 2018.  
 b) Statistics Canada. 1966 Census of Canada. Microfilm #10107, page 2254.  
 c) Statistics Canada. 1971 Census of Canada. Microfilm #10324, page 3180.  
 d) Statistics Canada. 1976 Census of Canada. Microfiche ##ADEM11, page 3977.

Table 28. Anzac, Fort Mackay, and Surrounding Area: population by marital status and sex for selected years.

Marital Status	1961		1966		1971		1976	
	N	%	N	%	N	%	N	%
<u>MALES</u>								
Single	146	59.8	175	60.6	220	65.7	115	57.5
Married (1)	90	36.9	99	34.3	100	29.9	70	35.0
Separated	-N/A-		-N/A-		-N/A-		5	2.5
Widowed	8	3.2	8	2.8	15	4.5	5	2.5
Divorced	-	-	7	2.4	5	1.5	5	2.5
Subtotal: Males	244	100%	289	100%	335	100%	200	100%
<u>FEMALES</u>								
Single	128	60.7	140	61.1	160	60.4	85	56.7
Married (1)	81	38.4	82	35.8	95	35.8	65	43.3
Separated	-N/A-		-N/A-		-N/A-		-	-
Widowed	2	0.9	5	2.2	15	5.7	5	3.3
Divorced	-	-	2	0.9	5	1.9	-	-
Subtotal: Females	211	100%	229	100%	265	100%	150	100%
<u>BOTH SEXES</u>								
Single	274	60.2	315	60.8	380	62.8	200	57.1
Married (1)	171	37.6	181	34.9	195	32.2	130	37.1
Separated	-N/A-		-N/A-		-N/A-		5	1.4
Widowed	10	2.2	13	2.5	25	4.1	10	2.9
Divorced	-	-	9	1.7	5	0.8	5	1.4
TOTAL POPULATION	455	100%	518	100%	605	100%	350	100%

Notes: (1) Includes separated individuals in data before 1976.

Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #10153, pages 2427-2428.

b) Statistics Canada. 1966 Census of Canada. Microfilm #10116, page 2254.

c) Statistics Canada. 1971 Census of Canada. Microfilm #10344, page 2967.

d) Statistics Canada. 1976 Census of Canada. Microfiche #EADFM12, page 3500.

Table 29. Anzac, Fort Mackay, and Surrounding Area: population by mother tongue and sex for selected years.

Mother Tongue	1961		1971		1976	
	N	%	N	%	N	%
<u>MALES</u>						
English	121	49.6	160	47.8	115	57.5
French	13	5.3	5	1.5	5	2.5
Native Indian	]110	45.1	]175	52.5	75	37.5
All Others					5	2.5
Subtotal: Males	244	100%	335	100%	200	100%
<u>FEMALES</u>						
English	94	44.5	120	45.3	70	45.2
French	6	2.8	5	1.9	-	-
Native Indian	]111	52.6	]145	54.7	70	45.2
All Others					15	9.7
Subtotal: Females	211	100%	265	100%	155	100%
<u>BOTH SEXES</u>						
English	215	47.3	280	46.3	185	52.9
French	19	4.2	10	1.7	10	2.9
Native Indian	]221	48.6	]310	51.2	145	41.4
All Others					10	2.9
TOTAL POPULATION	455	100%	605	100%	350	100%

Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #10146, pages 2427-2428.

b) Statistics Canada. 1971 Census of Canada. Microfilm #10329, page 3223.

c) Statistics Canada. 1976 Census of Canada. Microfiche #EADMA21, page 8659.

Table 30. Anzac, Fort Mackay, and Surrounding Area and Alberta: specified population groups by level of schooling and sex for selected years.

Level Attained	1961, Population 5 years and Over Not Attending		1976, Population 15 years and Over Attending & Not Attending	
	Anzac, etc. (2)	Alberta	Anzac, etc.	Alberta
	%	%	%	%
<b>MALES</b>				
No Schooling	37.7	6.8	43.5	19.5
Less than Grade 5	14.9	6.2		
Grades 5 - 8	14.3	34.0	17.4	19.2
Grades 9 - 10	20.1	22.6		
Grades 11 - 13	9.7	23.2	8.7	24.9
Post-Secondary, Non-University	N/A	N/A	17.4	17.2
Post-Secondary, University (1)	3.2	7.2	8.7	19.2
Subtotal: Males	100%	100%	100%	100%
<b>FEMALES</b>				
No Schooling	55.1	7.2	55.6	16.9
Less than Grade 5	11.2	4.8		
Grades 5 - 8	20.4	26.8	22.2	19.3
Grades 9 - 10	10.2	23.2		
Grades 11 - 13	2.0	31.8	11.1	30.2
Post-Secondary, Non-University	N/A	N/A	5.6	18.4
Post-Secondary, University (1)	1.0	6.2	5.6	15.2
Subtotal: Females	100%	100%	100%	100%
<b>BOTH SEXES</b>				
No Schooling	44.4	7.0	48.8	18.2
Less than Grade 5	13.5	5.5		
Grades 5 - 8	16.7	30.5	19.5	19.3
Grades 9 - 10	16.3	22.9		
Grades 11 - 13	6.7	27.3	9.8	27.5
Post-Secondary, Non-University	N/A	N/A	12.2	17.8
Post-Secondary, University (1)	2.4	6.7	7.3	17.2
TOTAL	100%	100%	100%	100%
(N)	(252)	(832,906)	(205)	(1,334,905)

Notes: (1) For 1976, University also includes people with both university and other post-secondary education.

(2) Based upon data for level of schooling of all ages. Children under 5 years have been removed from the "no schooling" category for compatibility with Alberta figures.

Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #10164, pages 2427, 2428.

b) Statistics Canada. 1961 Census of Canada. Supply and Services Canada: Ottawa. Cat. #92-550, pages 73-9, 73-10.

c) Statistics Canada. 1976 Census of Canada. Microfiche #EADMB12, page 7019.

d) Statistics Canada. 1976 Census of Canada. Supply and Services Canada: Ottawa. Cat. #92-827, pages 30-11, 30-12.

#### 4. FAMILIES

##### 4.1 INTRODUCTION

In this chapter we investigate the socioeconomic statistics dealing with family characteristics in the AOSERP Study area. The reader will recall from Chapter 2 that a census family consists of a husband and wife (with or without children who have never been married, regardless of age) or a parent with one or more children never married, living the same dwelling. A family may also consist of a man or woman living with a guardianship child or ward under twenty-one years for whom no pay was received. The 'head of the family' is the husband in a husband-wife family, or the parent in a one-parent family.

##### 4.2 FORT McMURRAY

Although most families in Fort McMurray have maintained their own household over the past two decades (i.e. primary families), this percentage has continued to increase between 1966 and 1976 (Table 31). In 1966, 94.7% of families maintained their own household, compared with 99.6% in 1976.

As may be seen in Table 32, there has been a large decrease in the average number of persons per family between 1961 and 1976 in Fort McMurray. Notably, the percentage of families with five or more persons has decreased between 1961 and 1976 from 44.0% to only 26.3%. Conversely, the percentage of four-person families has almost doubled over this period.

The percentage of family heads under the age of 35 years increased from 29.5% in 1961 to 41.1% in 1966 and 53.3% by 1971 (Table 33). Over this same time period, the percentage of family heads 55 years of age and older decreased from 23.7% to only 7.8% of all family heads in Fort McMurray.

Turning to Table 34, there have been no significant changes in the marital status of family heads between 1966 and

1976. One minor exception may be that the percentage of divorced family heads increased from 0.4% in 1966 to 1.4% by 1976.

The number of children in families living at home decreased from an average of 2.63 children per family in 1961 to only 1.78 children per family by 1976 (Table 35). In particular, the percentage of families with 4 or more children decreased from 31.7% in 1961 to only 12.0% by 1976.

Although Table 36 reveals that there has been no major change in the age distribution of children living in families between 1961 and 1976, Table 37 illustrates that there had been some change in the age groupings of children within families between 1971 and 1976. For example, the percentage of families with no children increased from 15.2% in 1971 to 22.8% by 1976. Also, families with all children between the ages of 6 and 14 years increased from 4.7% to 14.9%. Conversely, there has been a decline in the percentage of families with some or all children between the ages of 15 and 24 years.

With respect to the household relationship of non-family persons, there has been an increase between 1971 and 1976 in the percentage of non-family persons who are head of their own household (Table 38).

To summarize, it may be said that Fort McMurray families are more autonomous than in earlier years. They are less likely to have lodgers and are more likely to be maintaining their own household. Moreover, Fort McMurray families have become smaller with fewer children. Finally, Fort McMurray families are younger than before either Syncrude or GCOS. Family heads are younger and there is a smaller percentage of children over 14 years of age.

#### 4.3 FORT CHIPEWYAN

As may be seen from Table 39, there has been no significant change in the types of families found in Fort Chipewyan between 1966 and 1976.

With respect to the number of persons in Fort Chipewyan

families, the trend differs significantly from that of Fort McMurray. While the average number of persons in Fort McMurray families has continued to decline over the last two decades, there was an increase from 4.87 persons per family in 1961 to 5.97 persons per family in 1971 in Fort Chipewyan. Between 1971 and 1976, however, the average number of persons decreased to 4.7 (Table 40).

With respect to the age of family heads in Fort Chipewyan, Table 41 illustrates that there has been no major change between 1961 and 1971. However, Table 42 shows that the percentage of families with married family heads decreased from 86.6% in 1966 to 74.4% by 1976.

Similar to the trend in the number of persons in families, the number of children in Fort Chipewyan families increased between 1961 and 1971 from an average of 2.95 to 3.98. This average decreased to 2.88 by 1976 (Table 43).

Several interesting changes have occurred between 1971 and 1976 in the age groupings of children in Fort Chipewyan families. As may be seen from Table 44, there has been a major increase in the percentage of families where all children are between the ages of 15 and 24 years. Over the same period, the percentage of families with some children less than 6, some 6 to 14, and some 15 to 24 years decreased from 18.2% to only 2.3%.

To summarize, Fort Chipewyan families are larger than in Fort McMurray or Alberta, although the family size has been getting smaller since 1971. Moreover, Fort Chipewyan families are more likely than Fort McMurray families to have children. Heads of Fort Chipewyan families show a normal distribution of age which has not changed significantly over the past two decades. In recent years, however, family heads have been more likely to be separated, widowed, divorced, or never married than previously.

#### 4.4 ANZAC, FORT MACKAY, AND SURROUNDING AREA

The percentage of primary families in Anzac, Fort Mackay

and the surrounding area (i.e. those maintaining their own household) increased from 91.4% in 1966 to 100% by 1976 (Table 45).

With respect to the average number of persons per family in this area, the trend is quite similar to that of Fort Chipewyan. An increase in the average number of persons per family occurred between 1961 (4.67) to 1971 (5.08), then declined to 4.13 persons per family in 1976. Notably, the number of families with 5 or more persons decreased from 57.1% in 1971 to 37.5% by 1976 (Table 46).

The typical age of family heads in Anzac, Fort Mackay, and the surrounding area appears to be older in 1971 than ten years earlier (Table 47). In 1961, only 17.2% of family heads were 55 years of age or older while, in 1971, this percentage increased to 28.6%. Meanwhile, the percentage of family heads under the age of 35 years decreased from 41.3% in 1961 to only 28.6% by 1971.

No noticeable change occurred in the marital status of family heads in this area between 1966 and 1976 (Table 48).

The average number of children per family in Anzac, Fort Mackay, and the surrounding area increased from 2.68 in 1961 to 3.06 by 1971 and decreased to an average of 2.33 for 1976 (Table 49).

With respect to Table 50, no major changes have occurred in the age groupings of children in the area. It is difficult to determine the significance of any minor changes because of the small numbers involved and the random rounding system used by Statistics Canada.

To summarize, families in Anzac, Fort Mackay, and the surrounding area tend to be somewhat larger than those in Fort McMurray and somewhat smaller than those in Fort Chipewyan. Families are highly independent with respect to shelter as each family maintains its own household in 1976. Finally, the heads of families are typically much older than they were in 1961.



Table 31. Fort McMurray: Families by Type for Selected Years

Family Structure	1966		1971		1976 <sup>(1)</sup>	
	N	%	N	%	N	%
<u>Maintaining Own Household (Primary)</u>						
Without Additional Persons	- N/A -		1255	85.1	3110	87.1
With Additional Persons	- N/A -		190	12.9	445	12.5
<u>Subtotal: Primary Families</u>	<u>504</u>	<u>94.7</u>	<u>1445</u>	<u>98.0</u>	<u>3555</u>	<u>99.6</u>
<u>Not Maintaining Own Household (Secondary)</u>						
Related to Primary Family	15	2.8	20	1.4	-N/A-	
Lodging with Primary Family	13	2.4	15	1.0	-N/A-	
Other	-	-	-	-	-N/A-	
<u>Subtotal: Secondary Families</u>	<u>28</u>	<u>5.2</u>	<u>35</u>	<u>2.4</u>	<u>15</u>	<u>0.4</u>
<u>TOTAL FAMILIES</u>	<u>532</u>	<u>100%</u>	<u>1475</u>	<u>100%</u>	<u>3570</u>	<u>100%</u>

Notes: (1) 1976 figures estimated from household data with non-family households excluded.

Sources: a) Statistics Canada. 1966 Census of Canada. Microfilm #22004, page 170.

b) Statistics Canada. 1971 Census of Canada. Microfilm #22067, page 013.

c) Statistics Canada. 1976 Census of Canada. Microfiche #SDDHHA12, page 1550.

Table 32. Fort McMurray: families by number of persons for selected years.

Number of persons	1961		1966		1976	
	N	%	N	%	N	%
2	49	21.6	131	24.6	895	24.7
3	42	18.5	99	18.6	765	21.1
4	36	15.9	99	18.6	1005	27.7
5 or more	100	44.0	203	38.2	955	26.3
TOTAL FAMILIES	227	100%	532	100%	3625	100%
TOTAL PERSONS IN FAMILIES	1039		2225		13860	
AVERAGE PERSONS PER FAMILY	4.577		4.182		3.823	

Sources: a) Statistics Canada. 1961 Census of Canada.  
Microfilm #22029, p. 49.

b) Statistics Canada. 1966 Census of Canada.  
Microfilm #22007

c) Statistics Canada. 1976 Census of Canada.  
Microfiche # SDFAMA14A

Table 33. Fort McMurray: families by age of head for selected years.

Age of Head	1961		1966		1971	
	N	%	N	%	N	%
Under 20	13	5.7	1	0.4	15	1.0
20 - 24			26	9.3	165	11.1
25 - 34	54	23.8	88	31.4	610	41.2
35 - 44	65	28.6	65	23.2	375	25.3
45 - 54	41	18.1	46	16.4	190	12.8
55 - 64	37	16.3	29	10.4	85	5.7
65 - 69	11	4.8	10	3.6	10	0.7
70 and over	6	2.6	15	5.4	20	1.4
TOTAL FAMILY HEADS	227	100%	280	100%	1480	100%

Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #22045, page 595.

b) Statistics Canada. 1966 Census of Canada. Microfilm #22004, page 496.

c) Statistics Canada. 1971 Census of Canada. Microfilm #22067, page 29.

Table 34. Fort McMurray: families by marital status of head for selected years.

Marital Status	1966		1971		1976	
	N	%	N	%	N	%
Married						
Both Spouses at home	507	95.3	1385	93.6	-N/A-	
One Spouse at home (1)	13	2.4	10	0.7	-N/A-	
Subtotal: Married	520	97.7	1395	94.3	3475	95.9
Separated	- N/A -		35	2.4	60	1.7
Widowed	8	1.5	25	1.7	35	1.0
Divorced	2	0.4	10	0.7	50	1.4
Never Married	2	0.4	15	1.0	-N/A-	
TOTAL FAMILIES	532	100%	1480	100%	3625	100%

Notes: (1) Includes separated family heads in 1966 data.

(2) 1976 figures estimated from household data with single household heads excluded.

Sources: (a) Statistics Canada. 1966 Census of Canada. Microfilm #22004, p. 200.  
 (b) Statistics Canada. 1971 Census of Canada. Microfilm #22067, p. 18.  
 (c) Statistics Canada. 1976 Census of Canada. Microfiche #SDDHHA22, p. 6514.

Table 35. Fort McMurray: families by number of children (0-24 years) living at home for selected years.

Number of Children	1961		1966		1971		1976	
	N	%	N	%	N	%	N	%
0	46	20.3	125	23.5	220	14.9	825	22.8
1	46	20.3	104	19.5	280	19.0	790	21.8
2	33	14.5	98	18.4	425	28.8	1035	28.6
3	30	13.2	88	16.5	255	17.3	540	14.9
4	29	12.8	47	8.8	160	10.8	275	7.6
5 or more	43	18.9	70	13.2	140	9.5	160	4.4
of which:								
5	13	5.7	39	7.3	75	5.1	- N/A -	
6	26	11.5	13	2.4	30	2.0	- N/A -	
7			5	1.0	20	1.4	- N/A -	
8			8	1.5	10	0.7	- N/A -	
9 or more	4	1.8	5	1.0	5	0.3	- N/A -	
TOTAL FAMILIES	227	100%	532	100%	1475	100%	3625	100%
TOTAL CHILDREN IN FAMILIES	598		1172		3375		6460	
AVERAGE CHILDREN PER FAMILY	2.63		2.203		2.281		1.78	

Sources: a) Statistics Canada. 1961 Census of Canada, Microfilm #22029, page 49  
 b) Statistics Canada. 1966 Census of Canada, Microfilm #22004, page 170  
 c) Statistics Canada. 1971 Census of Canada, Microfilm #22067, page 13  
 d) Statistics Canada. 1976 Census of Canada, Microfiche #SDFAM11, page 1073

Table 36. Fort McMurray: unmarried children 0-24 years in families by age for selected years.

Age	1961		1966		1976	
	N	%	N	%	N	%
Under 6 years	234	39.2	494	42.2	2365	36.6
6 - 14	272	45.5	517	44.1	3025	46.8
15 - 18 <sup>(1)</sup>	66	11.0	114	9.7	630	9.8
19 - 24 <sup>(2)</sup>	26	4.3	47	4.0	440	6.8
TOTAL CHILDREN	598	100%	1172	100%	6460	100%
Average Children per family	2.63		2.203		1.78	

NOTES: (1) 15 - 17 for 1976 data

(2) 18 - 24 for 1976 data

- Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #22029, page 237.
- b) Statistics Canada. 1966 Census of Canada. Microfilm #22004, page 170.
- c) Statistics Canada. 1976 Census of Canada. Supply and Services Canada: Ottawa. Cat. #93-831, pages 5 - 17, 5 - 18.

Table 37. Fort McMurray: families by age groups of children 0-24 years at home for selected years.

Age Groupings of Children	1971		1976	
	N	%	N	%
All 0 - 5 Years	445	30.1	945	26.1
Some 0 - 5, some 6 - 14	295	19.9	610	16.8
Some 0 - 5, some 6 - 14, some 15-24	55	3.7	60	1.7
Some 0 - 5, some 15 - 24 <sup>(1)</sup>	10	0.7	10	2.8
Some 6 - 14, some 15 - 24 <sup>(1)</sup>	160	10.8	305	8.4
All 15 - 24 years <sup>(1)</sup>	220	14.9	325	9.0
All 6 - 14 years	70	4.7	540	14.9
No Children	225	15.2	825	22.8
TOTAL FAMILIES	1480	100%	3625	100%

Notes: (1) 1976 figures in these categories are estimates because slightly different age groupings were used in that census.

Sources: a) Statistics Canada. 1971 Census of Canada. Microfilm #22067, page 13.

b) Statistics Canada. 1976 Census of Canada. Microfiche # SDFAMA15, page 1556.

Table 38. Fort McMurray: non-family persons by household relationship and sex for selected years.

Household Relationship	1971		1976	
	N	%	N	%
<u>MALES</u>				
Head of Household	140	40.6	505	47.6
Related to Household Head	60	17.4	160	15.1
Lodgers	125	36.2	395	37.3
Employee or Partner	20	5.8		
<u>Subtotal: Males</u>	<u>345</u>	<u>100%</u>	<u>1060</u>	<u>100%</u>
<u>FEMALES</u>				
Head of Household	40	23.5	160	31.7
Related to Household Head	50	29.4	115	22.8
Lodgers	60	35.3	235	46.5
Employee or Partner	15	8.8		
<u>Subtotal: Females</u>	<u>170</u>	<u>100%</u>	<u>505</u>	<u>100%</u>
<u>BOTH SEXES</u>				
Head of Household	180	35.3	660	42.2
Related to Household Head	110	21.6	280	17.9
Lodgers	185	36.3	625	39.9
Employee or Partner	35	6.9		
<u>TOTAL NON-FAMILY PERSONS</u>	<u>510</u>	<u>100%</u>	<u>1565</u>	<u>100%</u>

Sources: a) Statistics Canada. 1971 Census of Canada. Microfilm #22068, page 280.

b) Statistics Canada. 1976 Census of Canada. Microfiche #SDNFM11, page 750.



Table 39. Fort Chipewyan: families by type for selected years.

Family Type	1966		1971		1976 <sup>(1)</sup>	
	N	%	N	%	N	%
Maintaining Own Household (Primary)						
Without Additional Persons	- N/A -		115	67.6	125	58.1
With Additional Persons	- N/A -		40	23.5	70	32.6
<u>Subtotal: Primary Families</u>	<u>168</u>	<u>89.8</u>	<u>160</u>	<u>94.1</u>	<u>195</u>	<u>90.7</u>
Not Maintaining Own Household (Secondary)						
Related to Primary Family	16	8.6	5	2.9	-N/A-	
Lodging with Primary Family	3	1.6	5	2.9	-N/A-	
Other	-	-	-	-	-N/A-	
<u>Subtotal: Secondary Families</u>	<u>19</u>	<u>10.2</u>	<u>10</u>	<u>5.9</u>	<u>20</u>	<u>9.3</u>
<u>TOTAL FAMILIES</u>	<u>187</u>	<u>100%</u>	<u>170</u>	<u>100%</u>	<u>215</u>	<u>100%</u>

Notes: (1) 1976 figures estimated from household data with non-family households excluded.

Sources: a) Statistics Canada. 1966 Census of Canada. Microfilm #22011, page 1241.

b) Statistics Canada. 1971 Census of Canada. Microfilm #22008, page 1571.

c) Statistics Canada. 1976 Census of Canada. Microfiche #EADHHA13, page 8578.

Table 40. Fort Chipewyan: families by number of persons for selected years.

Number of Persons	1961		1966		1971		1976	
	N	%	N	%	N	%	N	%
2	25	18.9	39	20.9	20	12.1	50	23.3
3	23	17.4	29	15.5	30	18.2	40	18.6
4	20	15.2	21	11.2	15	9.1	25	11.6
5	18	13.6	28	15.0	20	12.1	30	14.0
6	16	12.1	23	12.3	15	9.1	15	7.0
7	8	6.1	15	8.0	15	9.1	15	7.0
8	10	7.6	13	7.0	10	6.1	20	9.3
9 or more	12	9.1	9	4.8	40	24.2	20	9.3
TOTAL FAMILIES	132	100%	187	100%	165	100%	215	100%
TOTAL PERSONS IN FAMILIES	643		931		1005		1010	
AVERAGE PERSONS PER FAMILY	4.871		4.978		5.970		4.702	

- Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #22044, page 589.
- b) Statistics Canada. 1966 Census of Canada. Microfilm #22008, page 1241.
- c) Statistics Canada. 1971 Census of Canada. Microfilm #22000, page 1462.
- d) Statistics Canada. 1976 Census of Canada. Microfiche #EAFAMA25, page 2367; Microfiche #EAFAMA26A, page 2366; Microfiche #EAFAMA26B, page 2366.

Table 41. Fort Chipewyan: families by age of head for selected years.

Age of Head	1961		1966		1971	
	N	%	N	%	N	%
Under 20	5	3.8	1	0.5	-	-
20 - 24			13	7.0	10	6.1
25 - 34	28	21.2	49	26.2	40	24.2
35 - 44	29	22.0	34	18.2	40	24.2
45 - 54	24	18.2	30	16.0	30	18.2
55 - 64	25	18.9	30	16.0	20	12.1
65 - 69	7	5.3	12	6.4	15	9.1
70 and Over	14	10.6	18	9.6	10	6.1
TOTAL FAMILY HEADS	132	100%	187	100%	165	100%

Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #22045, page 594.

b) Statistics Canada. 1966 Census of Canada. Microfilm #22013, page 3491.

c) Statistics Canada. 1971 Census of Canada. Microfilm #22010, page 1706.

Table 42. Fort Chipewyan: families by marital status of head for selected years.

Marital Status	1966		1971		1976 <sup>(2)</sup>	
	N	%	N	%	N	%
Married						
Both Spouses at Home	150	80.2	135	79.4	155	72.1
One Spouse at Home(1)	12	6.4	10	5.9	5	2.3
Subtotal: Married	162	86.6	145	85.3	160	74.4
Separated	-N/A-		10	5.9	15	7.0
Widowed	18	9.6	15	8.8	30	14.0
Divorced	1	0.5	-	-	5	2.3
Never Married	6	3.2	10	5.9	-N/A-	
TOTAL FAMILIES	187	100%	170	100%	215	100%

Notes: (1) Includes separated family heads in 1966 data.

(2) 1976 figures estimated from household data with single household heads excluded.

Sources: a) Statistics Canada. 1966 Census of Canada. Microfilm #22014, page 1163.

b) Statistics Canada. 1971 Census of Canada. Microfilm #22018, page 1706.

c) Statistics Canada. 1976 Census of Canada. Microfiche #EADHHA21, page 3781.

Table 43. Fort Chipewyan: families by number of children 0-24 years for selected years.

Number of Children	1961		1966		1971		1976	
	N	%	N	%	N	%	N	%
0	20	15.2	35	18.7	20	11.8	40	18.6
1	25	18.9	32	17.1	25	14.7	50	23.3
2	19	14.4	24	12.8	20	11.8	25	11.6
3	24	18.2	26	13.9	15	8.8	30	14.0
4	15	11.4	20	10.7	20	11.8	25	11.6
5 or more	29	22.0	50	26.7	70	41.2	50	23.3
of which:								
5	- N/A -		20	10.7	15	8.8	- N/A -	
6	- N/A -		10	5.3	15	8.8	- N/A -	
7	- N/A -		7	3.7	15	8.8	- N/A -	
8	- N/A -		8	4.3	15	8.8	- N/A -	
9 or more	- N/A -		5	2.7	10	5.9	- N/A -	
TOTAL FAMILIES	132	100%	187	100%	170	100%	215	100%
TOTAL CHILDREN	389		568		670		620	
AVERAGE CHILDREN PER FAMILY	2.947		3.01		3.982		2.884	

Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #22045, page 594.

b) Statistics Canada. 1966 Census of Canada. Microfilm #22009, page 1241.

c) Statistics Canada. 1971 Census of Canada. Microfilm #22002, page 1625.

d) Statistics Canada. 1976 Census of Canada. Microfiche #EAFAMA13, page 2366; Microfiche #EAFAMA14, page 2184.

Table 44. Fort Chipewyan: families by age groups of children 0-24 years at home for selected years.

Age Groupings of Children	1971		1976	
	N	%	N	%
All 0 - 5 Years	25	15.2	45	20.9
Some 0 - 5, some 6 - 14	35	21.2	25	11.6
Some 0 - 5, some 6 - 14, some 15 - 24	30	18.2	5	2.3
Some 0 - 5, some 15 - 24 <sup>(1)</sup>	-	-	5	2.3
Some 6 - 14, some 15 - 24 <sup>(1)</sup>	25	15.2	30	14.0
All 15 - 24 Years <sup>(1)</sup>	15	9.1	50	23.3
All 6 - 14 Years	15	9.1	20	9.3
No Children	25	15.2	40	18.6
TOTAL FAMILIES	165	100%	215	100%

Notes: (1) 1976 figures in these categories are estimates because slightly different age groupings were used in that census.

Sources: a) Statistics Canada. 1971 Census of Canada. Microfilm #22007, page 1572.

b) Statistics Canada. 1976 Census of Canada. Microfiche #EAFMAI5, page 8728.

Table 45. Anzac, Fort Mackay, and Surrounding Area: families by type for selected years.

Family Type	1966		1976 <sup>(1)</sup>			
	N	%	N	%	N	%
Maintaining Own Household (Primary)						
Without Additional Persons	-N/A-		85	77.3	60	80.0
With Additional Persons	-N/A-		15	13.6	15	20.0
<u>Subtotal: Primary Families</u>	<u>81</u>	<u>91.4</u>	<u>100</u>	<u>90.9</u>	<u>75</u>	<u>100%</u>
Not Maintaining Own Household (Secondary)						
Related to Primary Family	8	8.6	5	4.5	-N/A-	
Lodging with Primary Family	-	-	-	-	-N/A-	
Other	-	-	-	-	-N/A-	
<u>Subtotal: Secondary Families</u>	<u>8</u>	<u>8.6</u>	<u>5</u>	<u>4.5</u>	<u>-</u>	<u>-</u>
<u>TOTAL FAMILIES</u>	<u>93</u>	<u>100%</u>	<u>110</u>	<u>100%</u>	<u>75</u>	<u>100%</u>

Notes: (1) 1976 figures estimated from household data with non-family households excluded.

Sources: a) Statistics Canada. 1966 Census of Canada. Microfilm #22011, page 1241.

b) Statistics Canada. 1971 Census of Canada. Microfilm #22008, page 1567.

c) Statistics Canada. 1976 Census of Canada. Microfiche #EADHHA13, page 8577.

Table 46. Anzac, Fort Mackay, and Surrounding Area: families by number of persons for selected years.

Number of Persons	1961		1966		1971		1976	
	N	%	N	%	N	%	N	%
2	13	14.9	21	22.6	15	14.3	15	18.8
3	25	28.7	15	16.1	25	23.8	20	25.0
4	13	14.9	9	9.7	15	14.3	15	18.8
5	9	10.3	13	14.0	20	19.0	10	12.5
6	9	10.3	12	12.9	10	9.5	15	18.8
7	4	4.6	6	6.5	10	9.5	-	-
8	7	8.0	6	6.5	10	9.5	-	-
9 or more	7	8.0	11	11.8	10	9.5	5	6.3
TOTAL FAMILIES	87	100%	93	100%	105	100%	80	100%
TOTAL PERSONS IN FAMILIES	406		456		540		310	
AVERAGE PERSONS PER FAMILY	4.667		4.903		5.075		4.133	

- Sources. a) Statistics Canada. 1961 Census of Canada. Microfilm #22044, page 589.
- b) Statistics Canada. 1966 Census of Canada. Microfilm #22008, page 1241.
- c) Statistics Canada. 1971 Census of Canada. Microfilm #22000, page 1462.
- c) Statistics Canada. 1976 Census of Canada. Microfiche #EAFAMA25, page 2367; Microfiche #EAFAMA26A, page 2366; Microfiche #EAFAMA26B, page 2366.



Table 47. Anzac, Fort Mackay, and Surrounding Area: families by age of head for selected years.

Age of Head	1961		1966		1971	
	N	%	N	%	N	%
Under 20	15	17.2	1	1.1	-	-
20 - 24			5	5.4	5	4.8
25 - 34	21	24.1	22	23.7	25	23.8
35 - 44	22	25.3	20	21.5	25	23.8
45 - 54	14	16.1	12	12.9	20	19.0
55 - 64	6	6.9	13	14.0	15	14.3
65 - 69	3	3.4	8	8.6	5	4.8
70 and over	6	6.9	12	12.9	10	9.5
TOTAL FAMILY HEADS	87	100%	93	100%	105	100%

Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #22045, pages 594-595.

b) Statistics Canada. 1966 Census of Canada. Microfilm #22013, page 3491.

c) Statistics Canada. 1971 Census of Canada. Microfilm #22010, page 1701.

Table 48. Anzac, Fort Mackay, and Surrounding Area: families by marital status of head for selected years.

Marital Status	1966		1971		1976 <sup>(2)</sup>	
	N	%	N	%	N	%
Married						
Both spouses at home	80	86.0	90	81.8	65	86.7
One spouse at home (1)	3	3.2	-	-	-	-
Subtotal: Married	83	89.2	90	81.8	65	86.7
Separated	-N/A-		-	-	5	6.7
Widowed	6	6.5	10	9.0	5	6.7
Divorced	4	4.3	-	-	-	-
Never Married	-	-	5	4.5	- N/A -	
TOTAL FAMILIES	93	100%	110	100%	75	100%

Notes: (1) Includes separated family heads in 1966 data.

(2) 1976 figures estimated from household data with single household heads excluded.

Sources: a) Statistics Canada. 1966 Census of Canada. Microfilm #22014, page 1163.

b) Statistics Canada. 1971 Census of Canada. Microfilm #22018, page 1701.

c) Statistics Canada. 1976 Census of Canada. Microfiche #EADHHA21, page 3781.

Table 49. Anzac, Fort Mackay and Surrounding Area: families by number of children 0-24 years for selected years.

Number of Children	1961		1966		1971		1976	
	N	%	N	%	N	%	N	%
0	12	5.7	21	22.6	10	9.5	10	13.3
1	25	28.7	15	16.1	20	19.0	20	26.7
2	15	17.2	10	10.8	25	23.8	15	20.0
3	7	8.0	11	11.8	20	19.0	10	13.3
4	10	11.5	14	15.1	5	4.8	15	20.0
5 or more	18	20.7	23	24.7	20	19.0	10	13.3
of which:								
5	-N/A-		5	5.4	10	9.5	-N/A-	
6	-N/A-		6	6.5	10	9.5	-N/A-	
7	-N/A-		6	6.5	-	-	-N/A-	
8	-N/A-		4	4.3	-	-	-N/A-	
9 or more	-N/A-		1	1.1	-	-	-N/A-	
TOTAL FAMILIES	87	100%	93	100%	105	100%	75	100%
TOTAL CHILDREN	233		269		325		175	
AVERAGE CHILDREN PER FAMILY	2.678		2.892		3.056		2.333	

Sources: a) Statistics Canada. 1961 Census of Canada Microfilm #22045, pages 594-595.

b) Statistics Canada 1966 Census of Canada Microfilm #22009, page 1241.

c) Statistics Canada. 1971 Census of Canada Microfilm #22002, page 1621.

d) Statistics Canada. 1976 Census of Canada Microfiche #EAFAMA13, page 2366; Microfiche #EAFAMA14, page 2184.

Table 50. Anzac, Fort Mackay and Surrounding Area: families by age groups of children 0-24 years at home for selected years.

Age Groupings of Children	1971		1976	
	N	%	N	%
All 0 - 5 Years	25	22.7	15	20.0
Some 0-5, some 6-14	20	18.2	10	13.3
Some 0-5, some 6-14, some 15-24	10	9.1	-	-
Some 0-5, some 15-24 <sup>(1)</sup>	-	-	5	6.7
Some 6-14, some 15-24 <sup>(1)</sup>	10	9.1	5	6.7
All 15 - 24 years <sup>(1)</sup>	10	9.1	10	13.3
All 6 - 24 years	15	13.6	15	20.0
No Children	10	9.1	15	20.0
TOTAL FAMILIES	110	100%	75	100%

Notes: (1) 1976 figures in these categories are estimates because slightly different age groupings were used in that census.

Sources: a) Statistics Canada. 1971 Census of Canada. Microfilm #22007, page 1568.

b) Statistics Canada. 1976 Census of Canada. Microfiche EEAFAA15, page 8727

## 5. HOUSEHOLDS

### 5.1 INTRODUCTION

As defined in Chapter 2 of this report, a census household is a person or group of persons occupying one dwelling. While it usually consists of a family group with or without non-family persons (such as lodgers, partners, relatives, etc.), a census household may also consist of two or more families sharing a dwelling, a group of unrelated persons sharing a dwelling, or one person living alone.

The information on households presented in this chapter refers to private households. In other words, a person or group of persons occupying a collective dwelling - hotels, hospitals, institutions, work camps, etc. - are excluded from the data.

### 5.2 FORT McMURRAY

As may be seen from Table 51, the percentage of one family households increased from 73.4% in 1961 to 88.6% in 1971, then decreased to 83.4% by 1976. In particular, the percentage of family households with additional persons nearly doubled between 1961 and 1971, and decreased only slightly in 1976. The percentage of non-family households decreased from 25.6% in 1961 to only 10.2% by 1971, before increasing to 15.3% in 1976. The decrease in the percentage of non-family households between 1961 and 1971 is largest for one person households.

Turning to Table 52, we see that the percentage of non-family households was higher during the construction periods of 1966 and 1976 than in 1971 when no major oil sands construction occurred. Also, the percentage of households with two or more families has continued to decline from 2.8% in 1966 to only 1.3% in 1976.

Perhaps because of the increased shortage of dwelling units up to the early 1970s, the average number of persons per household increased from 3.85 in 1961 to 4.2 in 1971. By 1976,

however, the average number of persons per household had decreased to 3.6 (Table 53).

Although the average number of persons per household increased between 1961 and 1971, the percentage of households with 6 or more persons actually decreased slightly from 25.3% in 1961 to 21.5% by 1971. In 1976, only 12.7% of households were inhabited by 6 or more people. This suggests, therefore, that the increase in the average number of persons per household between 1961 and 1971 is due to the reduction in the percentage of households with one or two persons rather than an increase in the percentage with 6 or more people.

As may be seen in Table 54, there was a slight increase in the percentage of households with one or more non-family persons between 1971 and 1976. The average number of non-family persons per household increased from 0.3 in 1971 to 0.4 in 1976.

Heads of households in Fort McMurray were typically older in 1971 than in 1976 (Table 55). In particular, the percentage of household heads between the ages of 15 and 24 years increased from 12.7% in 1971 to 16.8% in 1976. Over this same period, the percentage of household heads 45 years and over decreased from 22.6% to 18.9%. With respect to marital status, there was a slightly larger percentage of single household heads in 1976 than in 1971 (Table 56).

To summarize the characteristics of Fort McMurray households, a division must be made between pre-1971 and post-1971 characteristics. Between 1961 and 1971, there was a noticeable increase in the percentage of one family households and a relative decline in the percentage of non-family households. Consequently, the percentage of households with only one person also decreased. Between 1971 and 1976, there was an increase in the percentage of non-family households. Related to this change was an increase in the number of one person and two person households. Also, the typical age of household heads decreased and the percentage of single household heads increased. Over the entire period of 1961 to 1976, there has been a continual decline in the percentage of very large households.

## 5.3 FORT CHIPEWYAN

Between 1966 and 1976, there has been a continual decrease in the percentage of one family households without additional persons and an increase in the percentage of one family households with additional persons (Table 57). Multiple family households also increased between 1971 and 1976 as did non-family households. Within the non-family household category, the largest increase has occurred in non-family households with two or more persons. Table 58, reaffirms the findings of Table 57 - that percentages of non-family and multiple family households have increased between 1971 and 1976 in Fort Chipewyan.

The average number of persons per household in Fort Chipewyan increased from 4.69 in 1961 to 5.74 in 1971 before decreasing to 4.91 in 1976 (Table 59). The large decrease between 1971 and 1976 was largely due to an increase in the percentage of households with fewer than 4 persons from 31.5% to 41.7%. Over this same time, however, there was no significant decrease in the percentage of households with 6 or more persons.

Turning to Table 60, we see that there has been a decrease in the average number of lodgers per household between 1966 and 1976.

In summary, there has been an increase in the percentage of one family households with additional persons in Fort Chipewyan and a decrease in the percentage of one family households without additional persons between 1961 and 1976. Moreover, there were more non-family persons in 1976 than in earlier years, especially non-family households with two or more persons. Finally, following an increase in the average number of persons per household between 1961 and 1971 in Fort Chipewyan, a decrease occurred between 1971 and 1976. This lower average was due to an increase in the percentage of small households rather than to any decrease in the percentage of large households.

#### 5.4 ANZAC, FORT MACKAY, AND SURROUNDING AREA

Contrary to Fort McMurray and Fort Chipewyan, the data on household types for Anzac, Fort Mackay, and the surrounding area (Table 61) shows no significant changes between 1966 and 1976.

Following a decrease between 1961 and 1966, the percentage of one family households increased between 1966 and 1976 (Table 62).

As exhibited in Table 63, the average number of persons per household in Anzac, Fort Mackay and the surrounding area decreased from 4.9 in 1971 to 3.7 in 1976. Between these two census years, the percentage of households with 3 persons jumped from 12.0% to 21.1%. At the same time, the percentage of households with 7 or more persons decreased from 24.0% to only 10.6%.

Finally in Table 64, we see that there have been no major changes in the number of lodgers in households in this area between 1961 and 1976.

To summarize the household characteristics of Anzac, Fort Mackay and the surrounding area, it may be said that there have been no major changes over the last four census periods with the exception of a general reduction in the average number of persons per household between 1971 and 1976.



Table 51. Fort McMurray: households by type for selected years.

Type of Household	1961		1966		1971		1976	
	N	%	N	%	N	%	N	%
<u>One Family Households</u>								
Family of Household Head								
- without additional persons	203	67.4	442	72.5	1255	77.7	3110	73.7
- with additional persons	17	5.6	44	7.2	165	10.2	390	9.2
Family Not of Household Head	1	0.3	4	0.7	5	0.3	15	0.4
<u>Subtotal: One Family Households</u>	<u>221</u>	<u>73.4</u>	<u>490</u>	<u>80.3</u>	<u>1430</u>	<u>88.6</u>	<u>3515</u>	<u>83.4</u>
<u>Multiple Family Households</u>								
Family of Household Head	3	1.0	17	2.8	20	1.2	55	1.3
Family Not of Household Head	-	-	-	-	-	-	-	-
<u>Subtotal: Multiple Family Households</u>	<u>3</u>	<u>1.0</u>	<u>17</u>	<u>2.8</u>	<u>20</u>	<u>1.2</u>	<u>55</u>	<u>1.3</u>
<u>Non-Family Households</u>								
One Person Only	58	19.3	65	10.7	110	6.8	415	9.8
Two or More Persons	19	6.3	38	6.2	55	3.4	230	5.5
<u>Subtotal: Non-Family Households</u>	<u>77</u>	<u>25.6</u>	<u>103</u>	<u>16.9</u>	<u>165</u>	<u>10.2</u>	<u>645</u>	<u>15.3</u>
<u>TOTAL HOUSEHOLDS</u>	<u>301</u>	<u>100%</u>	<u>610</u>	<u>100%</u>	<u>1615</u>	<u>100%</u>	<u>4220</u>	<u>100%</u>

Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #27013, page 217

b) Statistics Canada. 1966 Census of Canada. Microfilm #27001, page 201

c) Statistics Canada. 1971 Census of Canada. Microfilm #MPHH01-2B, pages 88-89.

d) Statistics Canada. 1976 Census of Canada. Microfiche #SDDHHA12, page 1550.

Table 52. Fort McMurray: households by number of families for selected years.

Number of Families	1966		1971		1976	
	N	%	N	%	N	%
0 Families	103	16.9	165	10.2	650	15.4
1 Family	490	80.3	1430	88.3	3315	83.4
2 or More Families	17	2.8	25	1.5	55	1.3
<u>of Which</u>						
2 Families	17	2.8	25	1.5	- N/A -	
3 Families	-	-	-	-	- N/A -	
4 or More Families	-	-	-	-	- N/A -	
TOTAL HOUSEHOLDS	610	100%	1620	100%	4215	100%
TOTAL FAMILIES	532		1480		3625	
AVERAGE FAMILIES PER HOUSEHOLD	0.872		0.913		0.860	

- Sources: a) Statistics Canada 1966 Census of Canada Microfilm #27001, page 201.
- b) Statistics Canada 1971 Census of Canada Microfilm #27002, page 710.
- b) Statistics Canada 1976 Census of Canada Microfiche #SDDHHA21, page 665.

Table 53. Fort McMurray: households by number of persons for selected years.

Number of Persons	1961		1966		1971		1976	
	N	%	N	%	N	%	N	%
1	58	19.2	65	10.6	110	6.8	415	9.8
2	60	20.0	123	20.2	235	14.6	880	20.9
3	43	14.3	106	17.4	275	17.0	780	18.5
4	35	11.6	94	15.4	385	23.8	1020	24.2
5	29	9.6	86	14.1	265	16.4	585	13.9
6	35	11.6	48	7.9	170	10.5	325	7.7
7	8	2.7	44	7.2	95	5.9	115	2.7
8	13	4.3	18	3.0	35	2.1	55	1.3
9	9	3.0	10	1.6	30	1.8	20	0.5
10 or more	11	3.7	16	2.6	20	1.2	20	0.5
TOTAL HOUSEHOLDS	301	100%	610	100%	1615	100%	4220	100%
TOTAL PERSONS IN HOUSEHOLDS	1160		2438		6783		15124	
AVERAGE PERSONS PER HOUSEHOLD	3.85		3.996		4.2		3.6	

Sources: a) Statistics Canada 1961 Census of Canada  
Microfilm #27013, page 217.

b) Statistics Canada 1966 Census of Canada  
Microfilm #27001, page 201

c) Statistics Canada 1971 Census of Canada  
Microfilm #MPHH02-2A, page 75

d) Statistics Canada 1976 Census of Canada  
Supply and Services Canada: Ottawa.  
Cat. #93-805, pages 19-27

Table 54. Fort McMurray: households by number of non-family persons for selected years.

Number of Non-Family Persons	1971		1976	
	N	%	N	%
0	1280	79.0	3145	74.6
1	240	14.8	755	17.9
2	70	4.3	210	5.0
3	20	1.2	75	1.8
4 or more	5	0.3	35	0.8
TOTAL HOUSEHOLDS	1620	100%	4215	100%
TOTAL NON-FAMILY PERSONS	485		1365	
AVERAGE NON-FAMILY PERSONS PER HOUSEHOLD	0.3		0.4	

Sources: a) Statistics Canada. 1971 Census of Canada.  
Microfilm #MPHH04.

b) Statistics Canada. 1976 Census of Canada.  
Supply and Services Canada: Ottawa.  
Cat. #93-807, page 34-8.

Table 55. Fort McMurray: households by age of head for selected years.

Age	1971		1976	
	N	%	N	%
15 - 24	205	12.7	710	16.8
25 - 34	660	40.7	1710	40.6
35 - 44	390	24.1	1005	23.8
45 - 54	210	13.0	485	11.5
55 - 64	105	6.5	235	5.6
65 and over	50	3.1	75	1.8
of which:				
65 - 69	20	1.2	- N/A -	
70 and over	30	1.9	- N/A -	
TOTAL HOUSEHOLDS	1620	100%	4215	100%

Sources: a) Statistics Canada. 1971 Census of Canada.  
Microfilm # MPPH06-2A, page 67.

b) Statistics Canada. 1976 Census of Canada.  
Microfiche #SDDHHA22, pages 6514-6515.

Table 56. Fort McMurray: households by marital status of head for selected years.

Marital Status	1971		1976	
	N	%	N	%
Married (1)	1435	88.6	3475	82.4
Separated	- N/A -		110	2.6
Widowed	45	2.8	70	1.6
Divorced	25	1.5	95	2.2
Single	115	7.1	470	11.2
TOTAL HOUSEHOLDS	1620	100%	4215	100%

Notes: (1) Includes separated household heads in 1971 data.

Sources: a) Statistics Canada. 1971 Census of Canada Microfilm  
# MPH05 - 2A.

b) Statistics Canada. 1976 Census of Canada  
Microfiche #SDDHHA22, page 6514. ;

Table 57. Fort Chipewyan: households by type for selected years.

Type of Household	1966		1971		1976	
	N	%	N	%	N	%
<u>One Family Households</u>						
Family of Household Head						
- without additional persons	134	65.4	115	59.0	120	50.0
- with additional persons	20	9.8	35	17.9	50	20.8
Family Not of Household Head	2	1.0	5	2.6	5	2.1
<u>Subtotal: One Family Households</u>	<u>156</u>	<u>76.1</u>	<u>155</u>	<u>79.5</u>	<u>175</u>	<u>72.9</u>
<u>Multiple Family Households</u>						
Family of Household Head	14	6.8	10	5.1	20	12.5
Family Not of Household Head	1	0.5	-	-	-	-
<u>Subtotal: Multiple Family Households</u>	<u>15</u>	<u>7.3</u>	<u>10</u>	<u>5.1</u>	<u>20</u>	<u>12.5</u>
<u>Non-Family Households</u>						
One Person Only	28	13.7	20	10.3	30	12.5
Two or More Persons	6	2.9	10	5.1	20	8.3
<u>Subtotal: Non-Family Households</u>	<u>34</u>	<u>16.6</u>	<u>30</u>	<u>15.4</u>	<u>50</u>	<u>20.8</u>
<u>TOTAL HOUSEHOLDS</u>	<u>205</u>	<u>100%</u>	<u>195</u>	<u>100%</u>	<u>240</u>	<u>100%</u>

Sources: a) Statistics Canada. 1966 Census of Canada. Microfilm #27003, page 1189.

b) Statistics Canada. 1971 Census of Canada. Microfilm #27008, page 1576.

c) Statistics Canada. 1976 Census of Canada. Microfiche #EADH1A13, page 8578.

Table 58. Fort Chipewyan: households by number of families for selected years.

Number of Families	1961		1966		1971		1976	
	N	%	N	%	N	%	N	%
0 Families	27	18.2	34	16.6	35	18.2	50	20.8
1 Family	110	74.3	156	76.1	155	81.6	175	72.9
2 or more Families	11	7.4	15	7.3	10	5.3	20	8.3
<u>of which:</u>								
2 Families	-N/A-		14	6.8	10	5.3	-N/A-	
3 Families	-N/A-		1	0.5	-	-	-N/A-	
4 or more Families	-N/A-		-	-	-	-	-N/A-	
TOTAL HOUSEHOLDS	148	100%	205	100%	190	100%	240	100%
TOTAL FAMILIES	132		187		170		215	
AVERAGE FAMILIES PER HOUSEHOLD	0.892		0.912		0.870		0.896	

Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm # 27022, page 1285.

b) Statistics Canada. 1966 Census of Canada. Microfilm # 27007, page 1189.

c) Statistics Canada. 1971 Census of Canada. Microfilm # 27011, page 1515.

d) Statistics Canada. 1976 Census of Canada. Microfiche #EADHHA29, page 2366.



Table 59. Fort Chipewyan: households by number of persons for selected years.

Number of Persons	1961		1966		1971		1976	
	N	%	N	%	N	%	N	%
1	22	14.9	28	13.7	20	10.5	25	10.4
2	20	13.5	27	13.2	20	10.5	40	16.7
3	17	11.5	28	13.7	20	10.5	35	14.6
4	18	12.2	19	9.3	15	7.9	20	8.3
5	17	11.5	28	13.7	20	10.5	25	10.4
6	42	28.4	21	10.2	15	7.9	20	8.3
7			10	4.9	20	10.5	15	6.3
8			16	7.8	15	7.9	25	10.4
9			9	4.4	15	7.9	10	4.2
10 or more	12	8.1	19	9.3	30	15.8	25	10.4
TOTAL HOUSEHOLDS	148	100%	205	100%	190	100%	240	100%
TOTAL PERSONS IN HOUSEHOLDS	694		1004		1105		1179	
AVERAGE PERSONS PER HOUSEHOLD	4.689		4.897		5.735		4.913	

Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #27022, page 1285.

b) Statistics Canada. 1966 Census of Canada. Microfilm #27004, page 1189.

c) Statistics Canada. 1971 Census of Canada. Microfilm #27009, page 1519.

d) Statistics Canada. 1976 Census of Canada. Microfiche #EADHHA27, page 7685; EADHHA28B.

Table 60. Fort Chipewyan: households by number of lodgers for selected years.

Number of Lodgers	1961		1966		1971		1976	
	N	%	N	%	N	%	N	%
0	139	93.9	191	93.2	180	92.3	225	93.8
1 or more	9	6.1	14	6.8	10	5.1	15	6.3
of which								
1	-N/A-		10	6.8	10	5.1	10	4.2
2	-N/A-		-	-	-	-	5	2.1
3	-N/A-		-	-	-	-	-	-
4	-N/A-		2	1.0	-	-	-	-
5 or more	-N/A-		2	1.0	-	-	-	-
TOTAL HOUSEHOLDS	148	100%	205	100%	195	100%	240	100%
TOTAL LODGERS	-N/A-		31		25		20	
AVERAGE LODGERS PER HOUSEHOLD	-N/A-		0.151		0.124		0.083	

- Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm # 27022, page 1285.
- b) Statistics Canada. 1966 Census of Canada. Microfilm # 27006, page 1189.
- c) Statistics Canada. 1971 Census of Canada. Microfilm # 27012, page 1519.
- d) Statistics Canada. 1976 Census of Canada. Microfiche #EADHHA23, page 2366; Microfiche #EADHHA24A, page 2366.

Table 61. Anzac, Fort Mackay, and Surrounding Area: households by type for selected years.

Type of Household	1966		1971		1976	
	N	%	N	%	N	%
<u>One Family Households</u>						
Family of Household Head						
- without additional persons	67	61.5	85	68.0	60	63.2
- with additional persons	10	9.2	15	12.0	10	10.5
Family Not of Household Head	-	-	-	-	-	-
<u>Subtotal: One Family Households</u>	<u>77</u>	<u>70.7</u>	<u>100</u>	<u>80.0</u>	<u>75</u>	<u>78.9</u>
<u>Multiple Family Households</u>						
Family of Household Head	8	7.3	5	4.0	-	-
Family Not of Household Head	-	-	-	-	-	-
<u>Subtotal: Multiple Family Households</u>	<u>8</u>	<u>7.3</u>	<u>5</u>	<u>4.0</u>	<u>-</u>	<u>-</u>
<u>Non-Family Households</u>						
One Person Only	23	21.1	20	16.0	20	21.1
Two or More Persons	1	0.9	5	4.0	-	-
<u>Subtotal: Non-Family Households</u>	<u>24</u>	<u>22.0</u>	<u>25</u>	<u>20.0</u>	<u>20</u>	<u>21.1</u>
<u>TOTAL HOUSEHOLDS</u>	<u>109</u>	<u>100%</u>	<u>125</u>	<u>100%</u>	<u>95</u>	<u>100%</u>

Sources: a) Statistics Canada. 1966 Census of Canada. Microfilm #27003, page 1189.

b) Statistics Canada. 1971 Census of Canada. Microfilm #27008, page 1572.

c) Statistics Canada. 1976 Census of Canada. Microfiche #EADHHA13, page 8577.

Table 62. Anzac, Fort Mackay, and Surrounding Area: households by number of families for selected years.

Number of Families	1961		1966		1971		1976	
	N	%	N	%	N	%	N	%
0 Families	19	18.3	24	22.0	25	19.2	15	15.8
1 Family	83	79.8	77	70.6	100	76.9	75	78.9
2 or More Families	2	1.9	8	8.3	5	3.8	-	-
of which:								
2 Families	- N/A -		8	8.3	5	3.8	- N/A -	
3 Families	- N/A -		-	-	-	-	- N/A -	
4 or More Families	- N/A -		-	-	-	-	- N/A -	
TOTAL HOUSEHOLDS	104	100%	109	100%	130	100%	95	100%
TOTAL FAMILIES	87		93		105		75	
AVERAGE FAMILIES PER HOUSEHOLD	0.837		0.853		0.825		0.789	

Source: a) Statistics Canada. 1961 Census of Canada. Microfilm #27022, page 1285

b) Statistics Canada. 1966 Census of Canada. Microfilm #27007, page 1189

c) Statistics Canada. 1971 Census of Canada. Microfilm #27011, page 1515.

d) Statistics Canada. 1976 Census of Canada. Microfiche #EADHHA29, page 2366.

Table 63. Anzac, Fort Mackay, and Surrounding Area: households by number of persons for selected years.

Number of Persons	1961		1966		1971		1976	
	N	%	N	%	N	%	N	%
1	18	17.3	23	21.1	20	16.0	15	15.8
2	11	10.6	14	12.8	15	12.0	10	10.5
3	24	23.1	12	11.0	15	12.0	20	21.1
4	12	11.5	9	8.3	20	16.0	15	15.8
5	11	10.6	12	11.0	20	16.0	5	5.3
6	22	21.2	10	9.2	5	4.0	15	15.8
7			11	10.1	10	8.0	5	5.3
8			6	5.5	10	8.0	-	-
9			4	3.7	5	4.0	5	5.3
10 or more	6	5.8	8	7.3	5	4.0	-	-
TOTAL HOUSEHOLDS	104	100%	109	100%	125	100%	95	100%
TOTAL PERSONS IN HOUSEHOLDS	441		494		575		352	
AVERAGE PERSONS PER HOUSEHOLD	4.24		4.532		4.590		3.702	

Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #27022, page 1285.  
 b) Statistics Canada. 1966 Census of Canada. Microfilm #27004, page 1189.  
 c) Statistics Canada. 1971 Census of Canada. Microfilm #27009, page 1515.  
 d) Statistics Canada. 1976 Census of Canada. Microfiche #EADHHA27, page 7685; Microfiche #EADHHA28B.

Table 64. Anzac, Fort Mackay and Surrounding Area: households by number of lodgers for selected years.

Number of Lodgers	1961		1966		1971		1976	
	N	%	N	%	N	%	N	%
0	101	97.1	107	98.2	115	92.3	90	94.7
1 or more	3	2.9	2	1.8	10	7.7	5	5.3
<u>of which:</u>								
1	-N/A-		1	0.9	10	7.7	-	-
2	-N/A-		1	0.9	-	-	-	-
3	-N/A-		-	-	-	-	-	-
4	-N/A-		-	-	-	-	-	-
5 or more	-N/A-		-	-	-	-	-	-
TOTAL HOUSEHOLDS	104	100%	109	100%	130	100%	95	100%
TOTAL LODGERS	N/A		3		10		5	
AVERAGE LODGERS PER HOUSEHOLD	N/A		0.027		0.071		0.0526	

Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #27022, page 1285.

b) Statistics Canada. 1966 Census of Canada. Microfilm #27006, page 1189.

c) Statistics Canada. 1971 Census of Canada. Microfilm #27012, page 1515.

d) Statistics Canada. 1976 Census of Canada. Microfiche #EADHHA23, page 2367.

## 6. LABOUR FORCE AND EMPLOYMENT

### 6.1 INTRODUCTION

In this chapter, we analyze the statistics on the labour force and its employment characteristics in the AOSERP Study Area. Based on Statistics Canada definitions, the labour force is comprised of several groups. The employed labour force includes those individuals (either in the civilian population or in the Armed Forces) who worked last week for pay or profit, those who worked last week in unpaid family work, and those with a job but not at work last week for reasons other than temporary lay-off or looking for other work. In each case the employed labour force includes only those individuals 15 years and over.

The second labour force group - the unemployed labour force - consists of all non-inmates 15 years and over who, during the week prior to enumeration, were not working but were "looking for work", or were "on temporary lay-off". This definition also includes persons seeking their first job as well as those who would have looked for work except that they were temporarily ill or believed that no suitable work was available in the community.

The percentage of the population 15 years and over who were either employed or unemployed one week prior to the enumeration represents the participation rate. The unemployment rate represents the percentage of the total labour force which is unemployed.

### 6.2 FORT McMURRAY

As may be seen in Table 65, the percentage of males and females 15 years and over in the labour force has increased between 1961 and 1976. For the male population, the percentage in the population increased from 72.0% in 1961 to 88.6% by 1976. For the female population, the participation rate more than doubled from 20.4% in 1961 to 46.9% by 1976. Although this increase

parallels the trend among women in Alberta, the Fort McMurray participation rate is still somewhat lower than among women in Alberta.

With respect to the unemployment rate in Fort McMurray, there has been a continual increase between 1961 and 1976. While the increase in unemployment occurs both among males and females, it is particularly noticeable for the female labour force. Compared with a negligible unemployment rate among women in 1961, the rate increased to 6.6% by 1971 and in 1976, was reported as 9.8% - nearly three times the male unemployment rate.

In Table 66, we see that the overall unemployment rate was higher in Alberta than in Fort McMurray in 1971, and this is reflected in every age group. For both Fort McMurray and Alberta, the population between 15 and 24 years of age had the highest unemployment rate in 1971. The large difference in the Fort McMurray and Alberta unemployment rates (1.8% and 4.3% respectively), for the population 25 to 44 years of age is most likely due to the large cohort of young workers with a community college or university education in Fort McMurray, attracted by the oil sands development in the area.

The participation rate is somewhat higher among Fort McMurray residents than among those living in Alberta. This is particularly true of those individuals between the ages of 55 and 64 years where the participation rate is 79.4% and 61.7% for Fort McMurray and Alberta, respectively.

Turning to Table 67, we see that the Fort McMurray unemployment rate increased considerably between 1971 and 1976, while the comparable Alberta rate dropped to almost one-half its 1971 level. This may be largely due to the influx between 1971 and 1976 of a large number of individuals to Fort McMurray whose labour market skills do not closely match the job requirements in the area. The unemployment rate is highest among those 15 to 24 years of age. As in 1971, the 1976 participation rate is higher in Fort McMurray than in Alberta. Also, the participation rate among those 55 to 64 years is much higher among Fort McMurray residents than among those in Alberta.



With respect to level of schooling, there are interesting differences in the 1971 unemployment and participation rates between Fort McMurray and Alberta. As illustrated in Table 68, low unemployment rates are found among those with less than grade 12 education. This is possibly due to the fact that people in this educational group are older and have resided in Fort McMurray for several years. Those who have attended university (including community college) also experienced low unemployment during 1971 because of better employment opportunities than those with a high school diploma.

For both Fort McMurray and Alberta in 1971, there was a positive relationship between education and participation rate. However, the participation rate for those with less than grade 12 education is somewhat higher than the comparable figure for Alberta; this again, reflects the possibility that this labour force group has received more labour force experience and permanency in Fort McMurray.

1976 data on the labour force activity of Fort McMurray residents by level of schooling more closely parallels the information provided on Alberta residents in general. As may be seen from Table 69, the unemployment rate is highest in Fort McMurray among those with less than grade 9 education and is lowest among those with some postsecondary education, particularly university. This would suggest that there was considerable in-migration of individuals with lower education to Fort McMurray between 1971 and 1976. Higher unemployment rates are found among those with less education because they are less likely to have the required skills to secure employment in the area. They differ from those in 1971 with less education because they have not been in Fort McMurray long enough to develop the community ties which would contribute to their employment opportunity.

Consistent with the 1971 statistics on labour force activity by level of schooling, those with higher education are more likely to participate in the labour force. It is worth noting, however, that the participation rate among those with

less than grade 12 education is lower in 1976 even though the overall participation rate for Fort McMurray in that year is above the 1971 rate. The in-migration of less educated and more transient people to the area between 1971 and 1976 also explains this phenomenon.

Turning to Table 70, we see that those who have remained in Fort McMurray between 1971 and 1976 have an unemployment rate which is at least one-half of the rate found among those who have moved between 1971 and 1976. With the exception of migrants from outside Canada, the unemployment rate is higher with the distance that the individual has moved. For example, movers within the same municipality had an average unemployment rate of only 5.2%; migrants from other communities in Alberta had a 6.1% unemployment rate; it was 7.1% among migrants from different provinces.

As shown in Table 71, there have been a number of changes in the distribution of the labour force in Fort McMurray by the class of worker. Among males, for example, the percentage of self-employed workers decreased from 14.6% to only 3.7%, while a comparable increase occurred in the percentage of wage earners. While a slight decrease occurred between 1961 and 1971 in the percentage of self-employed female workers, the comparable increase was in the percentage of unpaid female family workers rather than wage earners.

Major changes have occurred in the distribution of the employed labour force in Fort McMurray by industry, as illustrated in Table 72. As expected, oil sands development in the area boosted the percentage of the employed labour force in mining from only 2.8% in 1961 to 35.6% by 1971, and 40.2% by 1979. Similarly, the rapid development of the area increased the percentage of the work force in the construction industry from only 6.2% in 1961 to 35.2% by 1976. With the Syncrude plant nearly completed by 1978, the percentage decreased to 18.3% and, by 1979, was reported at 16.6% of the employed labour force.

While major increases occurred in the proportion of the employed labour force in mining and construction, there has been a

relative decline in the percentage of workers in agriculture and forestry, transportation and communication, and health and welfare services.

With the introduction of oil sands development into the AOSERP Study Area, the percentage of the Fort McMurray work force in professional and technical occupations has almost doubled from 17.0% in 1961 to 32.0% by 1979 (Table 73). In addition, there has been an increase in the percentage of the work force in mining occupations over this period of time.

As may be seen in Table 74, the average wage and salary income for both males and females was lower in Fort McMurray than in Alberta in the twelve months prior to June 1st, 1961. The discrepancy between the average income of males and females for Fort McMurray was larger than for males and females in Alberta. In fact, the average income of males working in Fort McMurray in 1961 was over twice the average female income for that year.

In contrast to the 1961 data for employment income, the 1970 total income for males in Fort McMurray was much higher than that for males in Alberta (Table 75). Specifically, the average total income among male workers in Fort McMurray in 1970 was \$8,403, compared with \$6,774 among the male labour force in Alberta. The average income among females in Fort McMurray was slightly lower than the comparable Alberta figure (\$2,524 vs. \$2,759).

The discrepancy in the average income between males and females increased between 1961 and 1970 in both Fort McMurray and Alberta. While the average wage and salary income for females in Fort McMurray in 1961 was about 50% of the male income, the total income for females in 1970 was only one-third the average income for males. In Alberta, female income dropped from 53.6% of male income in 1961 to only 42.6% in 1970.

Statistics on the income and taxation figures for selected years in Fort McMurray and Alberta, presented in Table 76, supports the above findings that the average income in Fort McMurray has increased faster than that of Alberta, and that the Fort McMurray income is now considerably higher than the Alberta average.

To summarize the labour force and employment statistics for Fort McMurray, the following characteristics may be generalized. First, there has been a rapid increase in the unemployment rate in the community, especially among the younger, more mobile, less educated, and female workers. In fact, the large in-migration of these groups in recent years into Fort McMurray undoubtedly contributed to an overall unemployment rate which was almost twice the Alberta rate in 1976.

The participation rate has increased since 1961 in Fort McMurray, particularly among the female population. There has been a move away from self-employment toward wage earning employment for males and unpaid labour for females.

A third characteristic of the labour force in Fort McMurray is that there has been a massive shift toward employment in the mining and construction industries. With respect to occupation, there has been a much higher percentage of workers in professional, technical, and mining occupations in recent years in the community.

Finally, it is quite evident that the female labour force is not receiving the same employment gains as the male labour force. In 1976, the unemployment rate in the female work force in Fort McMurray was nearly three times the male unemployment rate. In addition, the average total income for women in 1970 was less than one-third the average total income for males - a wage gap that was wider than in the 1961 census. Finally, the percentage of women in unpaid family labour jumped between 1961 and 1971 to over 10% of the female labour force.

### 6.3 FORT CHIPEWYAN

As exhibited in Table 77, the 1976 unemployment rate for Fort Chipewyan was almost eight times the Alberta rate (27.5% vs 3.5%). Moreover, the male unemployment rate was over 50% higher than the female unemployment rate (30.9% vs 20.0%). Considering these high unemployment rates, it is not surprising that the

participation rate for both males and females was lower than the Alberta average.

Turning to Table 78, we see that the highest unemployment is found among those in the 15 to 24 years age group where 40% of the labour force is unemployed. In contrast, there was no noticeable unemployment among those 45 to 54 years of age or 65 years and over in 1976.

Except for the population 65 years and over, the participation rates for the various age groups in Fort Chipewyan are between 15 to 25 percentage points lower than the Alberta average. Overall, the participation rate was 56.7% vs 65.4% for Alberta. Perhaps because of the more traditional form of employment in the area among the older population, the participation rate among those 65 years and over was nearly twice the comparable rate for Alberta in 1976.

The average income among males in Fort Chipewyan in 1970 was one-half of the comparable income among males in Alberta (Table 79). For females, the average income was 81% of the comparable income among females in Alberta.

With respect to the male/female wage gap in Fort Chipewyan, the 1970 income for females in the area was two-thirds the male income. In contrast, females in Alberta earning income in 1970 had an average income of only 42.6% of the Alberta male income.

The labour force and employment situation in Fort Chipewyan has been highlighted by a very high unemployment rate particularly among the younger members of the work force. Income in the area is very low, especially among the male work force. Finally, participation rates for the male and female work force are lower than the comparable Alberta figures.

#### 6.4 ANZAC, FORT MACKAY, AND SURROUNDING AREA

In Table 80, which exhibits the labour force activity for the population 15 years and over in Anzac, Fort Mackay and the surrounding area, we see that the overall unemployment rate

was four times the Alberta rate in 1976 (14.3% vs 3.5%). (Although it appears that the unemployment rate is much higher for females, the technique of random rounding used by Statistics Canada has distorted these data.)

The participation rate for this area in 1976 was much lower than that of Alberta (51.2% vs 65.4%). In fact, the female participation rate was less than one-half the comparable rate for Alberta in that year.

Turning to Table 81, we see that there are apparently very high unemployment rates among those 45 to 54 years of age and 55 to 64 years of age. However, one must be cautious of the fact that there are only 25 people in the former and 15 people in the latter category because the random rounding effect used by Statistics Canada may have distorted these small numbers.

The participation rate was particularly low in 1976 among the labour force under 25 years of age compared to the Alberta rate (33.3% vs 67.4%). As was the case for Fort Chipewyan, the participation rate among those 65 years and over in Anzac, Fort Mackay and the surrounding area was much higher in 1976 than the comparable Alberta rate (25.0% vs 15.8%), possibly because of traditional employment found among residents in this age group.

For both males and females in this area in 1970, the average income was approximately two-thirds of the comparable figure for Alberta (Table 82). As in Alberta, females in the area earning income in 1970 had an average total income of slightly more than 40% of the average total income of males.

Based upon data presented by Peter C. Nichols and Associates Limited (1970) and reproduced in Table 83, we see that the average taxable return income among individuals in most parts of the AOSERP Study Area outside of Fort McMurray has been much lower than the comparable Alberta income. In fact, between 1967 and 1976, the average income in these outlying settlements has not increased as quickly as the average Alberta income.

To summarize, Anzac, Fort Mackay, and the surrounding area have a labour force which is characterized by high unemployment, although not as high as in Fort Chipewyan. In addition, the

average income for the area is considerably lower than the Alberta average for both male and female workers. Finally, there is some indication that the income of individuals living in most parts of the AOSERP Study Area except Fort McMurray is falling behind the average income of people in Alberta.

Table 65. Fort McMurray: population 15 years and over by labour force activity by sex for selected years.

Labour Force Activity	1961		1971		1976	
	N	%	N	%	N	%
<u>MALES</u>						
In Labour Force						
Employed	262	70.6	1875	89.3	4505	85.2
Unemployed	5	1.3	55	2.6	170	3.2
<u>Subtotal: Males in Labour Force</u>	<u>267</u>	<u>72.0</u>	<u>1930</u>	<u>91.9</u>	<u>4680</u>	<u>88.6</u>
Not in Labour Force	104	28.0	170	8.1	605	11.4
<u>Total: Males 15 Years and Over</u>	<u>371</u>	<u>100%</u>	<u>2100</u>	<u>100%</u>	<u>5285</u>	<u>100%</u>
<u>FEMALES</u>						
In Labour Force						
Employed	63	20.4	685	37.6	1930	42.2
Unemployed	-	-	45	2.5	210	4.6
<u>Subtotal: Females in Labour Force</u>	<u>63</u>	<u>20.4</u>	<u>730</u>	<u>40.1</u>	<u>2145</u>	<u>46.9</u>
Not in Labour Force	246	79.6	1090	59.1	2430	53.1
<u>Total: Females 15 Years and Over</u>	<u>309</u>	<u>100%</u>	<u>1820</u>	<u>100%</u>	<u>4575</u>	<u>100%</u>
<u>BOTH SEXES</u>						
In Labour Force						
Employed	325	47.8	2555	65.2	6435	65.3
Unemployed	5	0.7	100	2.6	390	4.0
<u>Subtotal: Both Sexes in Labour Force</u>	<u>330</u>	<u>48.5</u>	<u>2655</u>	<u>67.7</u>	<u>6825</u>	<u>69.2</u>
Not in Labour Force	350	51.5	1265	32.3	3035	30.8
<u>TOTAL</u>	<u>680</u>	<u>100%</u>	<u>3920</u>	<u>100%</u>	<u>9860</u>	<u>100%</u>
<u>Participation Rate</u>						
	<u>%</u>		<u>%</u>		<u>%</u>	
Males	72.0		91.9		88.6	
Females	20.4		40.1		46.9	
Both Sexes	48.5		67.7		69.2	
<u>Unemployment Rate</u>						
	<u>%</u>		<u>%</u>		<u>%</u>	
Males	1.9		2.9		3.6	
Females	-		6.6		9.8	
Both Sexes	1.5		3.9		5.7	

Sources: (a) Statistics Canada. 1961 Census of Canada. Supply and Services Canada: Ottawa. Cat. #94-533, pages 5-25, 5-26.

(b) Statistics Canada. 1971 Census of Canada. Microfilm # pages 4968-4970.

(c) Statistics Canada. 1976 Census of Canada. Supply and Services Canada. Cat. #94-801, pages 4-17, 4-18.



Table 66. Fort McMurray and Alberta: population 15 years and over by labour force activity and age, 1971.

Labour Force Activity	15-24 Years		25-44 Years		45-54 Years		55-64 Years		65 Years and Over		All Ages (15 Years and Over)	
	Ft.McMurray	Alberta	Ft.McMurray	Alberta	Ft.McMurray	Alberta	Ft.McMurray	Alberta	Ft.McMurray	Alberta	Ft.McMurray	Alberta
	%	%	%	%	%	%	%	%	%	%	%	%
In Labour Force												
Employed	58.4	55.5	67.7	69.2	75.3	69.8	79.4	58.7	15.4	15.8	65.2	58.7
Unemployed	5.0	7.4	1.2	3.1	2.6	2.8	2.9	3.0	-	1.1	2.6	4.0
Subtotal: In Labour Force	63.4	62.9	69.0	72.3	77.9	72.6	82.3	61.7	15.4	16.9	67.8	62.7
Not in Labour Force	36.6	37.1	31.0	27.7	22.1	27.4	17.7	38.3	84.6	83.1	32.2	37.3
TOTAL %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
(N)	(1285)	(302780)	(2015)	(412145)	(385)	(162705)	(170)	(117205)	(65)	(118590)	(3920)	(1113425)
	%	%	%	%	%	%	%	%	%	%	%	%
Participation Rate	63.4	62.9	69.0	72.3	77.9	72.6	79.4	61.7	15.4	16.9	67.8	62.7
Unemployment Rate	8.0	11.8	1.8	4.3	3.3	3.8	3.7	4.8	-	6.5	3.8	6.4

Sources: a) Statistics Canada. 1971 Census of Canada. Microfilm #500-211-C, pages 4968-4970.

b) Statistics Canada. 1971 Census of Canada. Supply and Services Canada: Ottawa, Cat. #94-772, pages 1-19, 1-20.

Table 67. Fort McMurray and Alberta: population 15 years and over by labour force activity and Age, 1976.

Labour Force Activity	15-24 Years		25-44 Years		45-54 Years		55-64 Years		65 Years and Over		All Ages (15 Years and older)	
	Ft. McMurray	Alberta	Ft. McMurray	Alberta	Ft. McMurray	Alberta	Ft. McMurray	Alberta	Ft. McMurray	Alberta	Ft. McMurray	Alberta
	%	%	%	%	%	%	%	%	%	%	%	%
In Labour Force												
Employed	59.3	62.5	69.4	73.2	67.8	73.4	70.9	59.2	19.2	15.6	65.3	62.8
Unemployed	6.5	4.9	2.7	2.2	2.9	1.6	2.5	1.5	-	0.2	4.0	2.6
Subtotal: In Labour Force	65.8	67.4	72.1	75.4	70.7	75.0	73.4	60.7	19.2	15.8	69.2	65.4
Not in Labour Force	34.2	32.6	27.9	24.6	29.3	25.0	26.6	29.3	80.8	84.2	30.8	34.6
TOTAL % (N)	100% (3285)	100% (379150)	100% (5180)	100% (500045)	100% (870)	100% (183190)	100% (395)	100% (134580)	100% (130)	100% (137930)	100% (9860)	100% (1334905)
	%	%	%	%	%	%	%	%	%	%	%	%
Participation Rate	65.8	67.4	72.1	75.4	70.7	75.0	73.4	60.7	19.2	15.8	69.2	65.4
Unemployment Rate	10.0	7.3	3.7	2.9	4.1	2.1	3.8	2.4	-	1.2	5.7	3.5

Sources: a) Statistics Canada. 1976 Census of Canada. Microfiche #EACOB11, pages 9037-9050, 9053-9055.

b) Statistics Canada. 1976 Census of Canada. Supply and Services Canada: Ottawa  
Cat. #94-806, pages 15-58 to 15-66.

Table 68. Fort McMurray and Alberta: population 15 years and over by labour force activity and level of schooling, 1971.

Labour Force Activity	Less than Grade 9		Grades 9 - 11		Grades 12 - 13		University (With or Without Degree)		All Ages (15 Years and Over)	
	Ft.McMurray	Alberta	Ft.McMurray	Alberta	Ft.McMurray	Alberta	Ft.McMurray	Alberta	Ft.McMurray	Alberta
	%	%	%	%	%	%	%	%	%	%
In Labour Force										
Employed	61.9	47.8	61.7	55.4	67.5	65.7	79.5	76.7	65.2	58.7
Unemployed	1.7	3.3	1.9	4.5	4.2	4.3	2.4	3.7	2.6	4.0
Subtotal: In Labour Force	63.6	51.1	63.6	59.9	71.7	70.0	81.9	80.4	67.8	62.7
Not In Labour Force	36.4	48.9	36.4	40.1	28.3	30.0	18.1	19.6	32.2	37.3
TOTAL %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
(N)	(880)	(281215)	(1565)	(414620)	(1060)	(278220)	(415)	(139365)	(3920)	(1113425)
	%	%	%	%	%	%	%	%	%	%
Participation Rate	63.6	51.1	63.6	59.9	71.7	70.0	81.9	80.4	67.8	62.7
Unemployment Rate	2.7	6.4	3.0	7.5	5.9	6.0	2.9	4.6	3.8	6.4

Sources: a) Statistics Canada. 1971 Census of Canada. Microfilm #500-211-C, pages 4968-4970.

b) Statistics Canada. 1971 Census of Canada. Supply and Services Canada: Ottawa. Cat. #94-772, pages 1-19, 1-20.

Table 69. Fort McMurray and Alberta: population 15 years and over by Labour force activity and level of schooling 1976.

Labour Force Activity	Less than Grade 9		Grades 9 - 11		Grades 12 - 13		Post-Secondary Non-University		University With or Without Degree		All Ages (15 years and Over)	
	Ft. McMurray	Alberta	Ft. McMurray	Alberta	Ft. McMurray	Alberta	Ft. McMurray	Alberta	Ft. McMurray	Alberta	Ft. McMurray	Alberta
	%	%	%	%	%	%	%	%	%	%	%	%
In Labour Force												
Employed	53.2		57.4		64.8		73.4		77.6		65.3	62.8
Unemployed	3.6		4.1		3.6		4.6		3.2		3.9	2.6
Subtotal: In Labour Force	56.8		61.5		68.4		78.0		80.8		69.2	65.4
Not in Labour Force	43.2		39.5		31.6		22.0		19.2		30.8	34.6
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
(N)	(1250)		(3075)		(1520)		(2460)		(1560)		(9860)	(1334905)
Participation Rate	56.8		61.5		68.4		78.0		80.8		69.2	65.4
Unemployment Rate	7.0		6.6		5.2		4.5		3.5		5.7	3.5

Sources: a) Statistics Canada 1976 Census of Canada. Microfiche #SDECOB11, page 7465.

b) Statistics Canada 1976 Census of Canada.

Table 70. Fort McMurray and Alberta: population 15 years and over by labour force activity and mobility status, 1976.

Labour Force Activity	Non-Movers		Movers within same Municipality (Non-Migrants)		Migrants Within Same Province		Migrants From Different Province		Migrants from Outside Canada		Total Population 15 Years and Over (1)	
	Ft.McMurray	Alberta	Ft.McMurray	Alberta	Ft.McMurray	Alberta	Ft.McMurray	Alberta	Ft.McMurray	Alberta	Ft.McMurray	Alberta
	%	%	%	%	%	%	%	%	%	%	%	%
In Labour Force												
Employed	67.1	59.3	64.6	65.0	65.2	66.1	65.6	67.8	58.8	65.9	65.3	62.8
Unemployed	1.9	1.8	3.5	2.7	4.2	2.9	5.2	4.5	4.6	3.8	4.0	2.6
Subtotal: In Labour Force	69.0	61.2	68.1	67.7	69.4	69.0	70.8	72.3	63.4	69.6	69.3	65.4
Not in Labour Force	31.1	38.8	31.9	32.3	30.6	31.0	29.2	27.7	36.6	30.4	30.7	34.6
TOTAL %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
(N)	(1630)	(591850)	(1695)	(338220)	(2815)	(197055)	(2895)	(140265)	(655)	(49915)	(9860)	(1333730)
Participation Rate	69.0	61.2	68.1	67.7	69.4	69.0	70.8	72.3	63.4	69.6	69.3	65.4
Unemployment Rate	2.7	3.0	5.2	4.0	6.1	4.2	7.1	6.2	6.0	5.4	5.7	4.0

Notes: (1) Total includes 170 non-respondents for Fort McMurray.

Sources: a) Statistics Canada. 1976 Census of Canada. Microfiche #SDECOB12, pages 6779-6781.

b) Statistics Canada. 1976 Census of Canada. Supply and Services Canada: Ottawa, Cat. #94-807, pages 16-67 to 16-70.

Table 71. Fort McMurray: population 15 years and over experienced in labour force by class of worker and sex for selected years.

Class of Worker	1961		1971	
	N	%	N	%
<u>MALES</u>				
Self Employed				
Incorporated	- N/A -		30	1.6
Unincorporated	- N/A -		40	2.1
<u>Sub-total: Self-Employed Males</u>	<u>39</u>	<u>14.6</u>	<u>70</u>	<u>3.7</u>
Wage Earners	227	85.0	1840	96.1
Unpaid Family Workers	1	0.4	5	0.3
<u>Total: Males Experienced in Labour Force</u>	<u>267</u>	<u>100%</u>	<u>1915</u>	<u>100%</u>
<u>FEMALES</u>				
Self-Employed				
Incorporated	- N/A -		10	1.4
Unincorporated	- N/A -		15	2.1
<u>Sub-total: Self-Employed Females</u>	<u>3</u>	<u>4.8</u>	<u>25</u>	<u>3.5</u>
Wage Earners	57	90.5	640	86.1
Unpaid Family Workers	3	4.8	75	10.4
<u>Total: Females Experienced in Labour Force</u>	<u>63</u>	<u>100%</u>	<u>720</u>	<u>100%</u>
<u>BOTH SEXES</u>				
Self-Employed				
Incorporated	- N/A -		35	1.3
Unincorporated	- N/A -		55	2.1
<u>Subtotal: Self-Employed Both Sexes</u>	<u>42</u>	<u>12.7</u>	<u>90</u>	<u>3.4</u>
Wage Earners	284	86.1	2465	93.5
Unpaid Family Workers	4	1.2	80	3.0
<u>TOTAL EXPERIENCED LABOUR FORCE</u>	<u>330</u>	<u>100%</u>	<u>2635</u>	<u>100%</u>

Sources: a) Statistics Canada 1961 Census of Canada Microfilm #11112, page 2006.

b) Statistics Canada 1971 Census of Canada Microfilm #500-189-C, page 6206.

Table 72. Fort McMurray: employed labour force by industry for selected years.

Industry	1961	1971	1976	1977	1978	1979
	%	%	%	%	%	%
Agriculture and Forestry	7.4	1.3	0.1	0.1	0.2	0.1
Mining	2.8	35.6	22.0	22.4	39.6	40.2
Manufacturing	5.6	2.6	0.6	0.7	0.4	0.5
Construction	6.2	12.6	35.2	35.4	18.3	16.6
Transportation, Communications, Utilities	37.0	6.9	N/A	4.8	4.1	4.1
Wholesale Trade	3.4	0.9	N/A	1.7	2.1	1.9
Retail Trade	7.1	9.3	6.5	7.2	7.1	8.0
Finance, Insurance, Real Estate	0.6	3.0	N/A	5.3	4.9	3.5
Education	3.7	8.2	N/A	5.8	5.6	6.0
Health, Welfare Services	8.0	4.8	N/A	2.8	2.1	2.6
Accommodation, Food Services	5.6	5.2	N/A	3.7	3.3	3.1
Other Community/Personal Business Services	3.7	4.8	N/A	4.2	5.9	7.0
Government	9.0	4.8	N/A	5.9	6.5	6.2
TOTAL	100%	100%	100%	100%	100%	100%
(N)	(324)	(2305)	(7597)	(8605)	(10649)	(11548)

- Sources: a) Peter C. Nichols and Associates Ltd. Overview of Local Economic Development in the Athabasca Oil Sands Region Since 1961 Alberta Oil Sands Environmental Research Program, March, 1979. (For 1976, 1977, and 1978 municipal census data.)  
 b) Statistics Canada. 1961 Census of Canada, Microfilm #11010, page 134.  
 c) Statistics Canada. 1971 Census of Canada Microfilm #500-189-C.  
 d) New Town of Fort McMurray. Municipal Census, 1979. page 16.

Table 73. Fort McMurray: experienced labour force by occupation for selected years.

Occupation	1961	1971	1977 <sup>(4)</sup>	1978	1979
	%	%	%	%	%
Professional and Technical Occupations					
Managerial and Administrative	10.0	4.0	10.3	11.7	8.0
Natural Sciences, Engineering, Maths	7.0	5.6	10.8	15.8	16.5
Teaching		6.3	4.1	4.0	3.8
Medicine and Health		3.7	1.5	1.7	1.9
Other Professional and Technical <sup>(1)</sup>		1.2	0.9	1.5	1.8
Subtotal: Professional and Technical	17.0	20.8	27.6	34.7	32.0
Production Occupations and Construction Trades					
Product Fabrication, Assembling, Repairing	30.3	6.3	5.6	12.3	13.0
Construction Trades		11.4	34.2	6.9	8.0
Machining and Processing		9.5	2.7	4.0	0.7
Subtotal: Production Occupations and Construction Trades	30.3	27.2	42.5	23.2	21.7
Farming, Fishing, Forestry, Mining Occupations					
Mining	-	6.0	0.5	7.5	8.1
Farming, Fishing, Forestry	3.3			0.2	0.3
Subtotal: Farming, Fishing, Forestry, Mining Occupations	3.3	6.0	0.5	7.7	8.4
Clerical	7.0	14.9	13.3	11.2	11.4
Sales and Service <sup>(2)</sup>	21.5	19.8	10.9	14.9	15.3
Transport Equipment Occupations <sup>(3)</sup>	15.5	4.7	3.7	4.0	3.6
Occupations not elsewhere classified	5.4	6.6	1.5	4.3	7.6
TOTAL	100%	100%	100%	100%	100%
(N)	(330)	(2150)	(9013)	(10063)	(10597)

Notes: (1) Includes social sciences, religion, artistic, literary, performing arts, sport and recreation

(2) Includes recreation occupations for 1961 only.

(3) Includes communications occupations for 1961 only.

(4) It is probable that the low percentage for mining is due to an error.

Sources: (a) Statistics Canada. 1961 Census of Canada. Supply and Services Canada: Ottawa Cat. #94-507

(b) Statistics Canada. 1971 Census of Canada. Microfilm #500-289-C, pages 6292-6295.

(c) New Town of Fort McMurray. Municipal Census. (For 1977 to 1979)



Table 74. Fort McMurray and Alberta: population 15 years and over by wage and salary income level based upon earnings during the 12 months prior to June 1, 1961 by sex.

Wage and Salary Income Level	Fort McMurray	Alberta
	<u>%</u>	<u>%</u>
<u>MALES</u>		
Zero Income, Not Working in 1960	38.8	45.6
Zero Income, Working in 1960	0.3	0.6
Less than \$1000	5.4	5.5
\$1000 - 1999	7.8	5.5
\$2000 - 2999	16.4	7.6
\$3000 - 3999	11.9	12.2
\$4000 - 5999	13.7	15.7
\$6000 and Over	5.4	7.3
<u>Subtotal: Males 15 Years &amp; Over</u>	<u>100%</u>	<u>100%</u>
<u>FEMALES</u>		
Zero Income, Not Working in 1960	81.6	74.8
Zero Income, Working in 1960	3.6	0.7
Less than \$1000	3.2	6.7
\$1000 - 1999	9.4	5.5
\$2000 - 2999	2.9	6.3
\$3000 - 3999	1.6	3.8
\$4000 - 5999	1.3	1.9
\$6000 and Over	-	0.3
<u>Subtotal: Females 15 Years &amp; Over</u>	<u>100%</u>	<u>100%</u>
<u>BOTH SEXES</u>		
Zero Income, Not Working in 1960	58.2	59.6
Zero Income, Working in 1960	1.8	0.7
Less than \$1000	4.4	6.1
\$1000 - 1999	7.6	5.5
\$2000 - 2999	9.4	6.9
\$3000 - 3999	6.6	8.2
\$4000 - 5999	8.1	9.1
\$6000 and Over	2.9	3.9
<u>TOTAL %</u>	<u>100%</u>	<u>100%</u>
(N)	(680)	(862620)
<u>Average Income (Population with Income Only)</u>		
	\$	\$
Males	3207	3733
Females	1585	2001
Both Sexes	2933	3220

Source: a) Statistics Canada. 1961 Census of Canada. Supply and Services Canada: Ottawa. Cat. #94-534.

Table 75. Fort McMurray and Alberta: population 15 years and over by employment income and total income level in 1970 by sex.

Income Level	Fort McMurray		Alberta
	Employment Income	Total Income	Total Income
	%	%	%
<u>MALES</u>			
Zero Income, Not Working in 1970	7.5	5.5	8.2
Zero Income, Working in 1970	0.2		
Less than \$3000	13.8	15.0	27.8
\$3000 - 5999	14.0	13.6	47.2
\$6000 - 9999	31.9	30.7	
\$10000 and Over	32.6	34.5	16.7
Subtotal: Males 15 Years & Over	100%	100%	100%
<u>FEMALES</u>			
Zero Income, Not Working in 1970	53.0	50.0	36.3
Zero Income, Working in 1970	3.8		
Less than \$3000	26.1	31.9	39.6
\$3000 - 5999	11.5	12.1	23.0
\$6000 - 9999	4.7	5.2	
\$10000 and Over	0.8	0.8	1.2
Subtotal: Females 15 Years & Over	100%	100%	100%
<u>BOTH SEXES</u>			
Zero Income, Not Working in 1970	28.3	26.0	22.1
Zero Income, Working in 1970	2.0		
Less than \$3000	19.8	22.8	33.6
\$3000 - 5999	13.1	13.5	35.3
\$6000 - 9999	19.1	18.9	
\$10000 and Over	17.7	18.2	9.1
TOTAL %	100%	100%	100%
(N)	(3920)	(3920)	(1113425)
<u>Average Income (Population with Income Only)</u>			
	\$	\$	\$
Males	8304	8403	6774
Females	2663	2524	2759
Both Sexes	6673	6575	4978

Sources: a) Statistics Canada. 1971 Census of Canada. Microfilm #500-331-C. pages 6780-6782b) Statistics Canada. 1971 Census of Canada. Microfilm #500-336-C. pages 8447-8449c) Statistics Canada. 1971 Census of Canada. Supply and Services Canada: Ottawa. Cat. #94-760

Table 76. 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: Peter C. Nichols and Associates Ltd. Overview of Local Economic Development in the Athabasca Oil Sands Region Since 1961.

Alberta Oil Sands Environmental Research Program. March 1979.

Table 77. Fort Chipewyan and Alberta: population 15 years and over by labour force activity and sex, 1976.

Labour Force Activity	Ft. Chipewyan		Alberta
	N	%	%
<u>MALES</u>			
In Labour Force			
Employed	190	50.0	76.7
Unemployed	85	22.4	2.9
<u>Subtotal: Males in Labour Force</u>	<u>275</u>	<u>72.4</u>	<u>79.6</u>
Not in Labour Force	105	27.6	20.4
<u>Total: Males 15 Years and Over</u>	<u>380</u>	<u>100%</u>	<u>100%</u>
<u>FEMALES</u>			
In Labour Force			
Employed	105	32.3	48.6
Unemployed	25	7.7	2.4
<u>Subtotal: Females in Labour Force</u>	<u>125</u>	<u>38.5</u>	<u>51.0</u>
Not in Labour Force	200	61.5	49.0
<u>Total: Females in Labour Force</u>	<u>325</u>	<u>100%</u>	<u>100%</u>
<u>BOTH SEXES</u>			
In Labour Force			
Employed	290	41.1	62.8
Unemployed	110	15.6	2.6
<u>Subtotal: Both Sexes in Labour Force</u>	<u>400</u>	<u>56.7</u>	<u>65.4</u>
Not in Labour Force	305	43.3	34.6
<u>TOTAL</u>	<u>705</u>	<u>100%</u>	<u>100%</u> (N=1334905)
<u>Participation Rate</u>			
		%	%
Males		72.4	79.6
Females		38.5	51.0
Both Sexes		56.7	65.4
<u>Unemployment Rate</u>			
Males		30.9	3.7
Females		20.0	3.1
Both Sexes		27.5	3.5

Sources: a) Statistics Canada. 1976 Census of Canada. Microfiche #EAECOB11, page 9053.

b) Statistics Canada. 1976 Census of Canada. Supply and Services Canada: Ottawa. Cat. #94-802, page 5-25.

Table 78. Fort Chipewyan and Alberta: population 15 years and over by labour force activity and age, 1976.

Labour Force Activity	15-24 Years		25-44 Years		45-54 Years		55-64 Years		65 Years and Over		All Ages (15 Years and Over)	
	Ft. Chipewyan	Alberta	Ft. Chipewyan	Alberta	Ft. Chipewyan	Alberta	Ft. Chipewyan	Alberta	Ft. Chipewyan	Alberta	Ft. Chipewyan	Alberta
	%	%	%	%	%	%	%	%	%	%	%	%
In Labour Force												
Employed	36.0	62.5	51.0	73.2	53.3	73.4	36.4	59.2	26.7	15.6	41.1	62.8
Unemployed	24.0	4.9	16.3	2.2	-	1.6	9.1	1.5	-	0.2	15.6	2.6
Subtotal: In Labour Force	60.0	67.4	67.3	75.4	53.3	75.0	45.5	60.7	26.7	15.8	56.7	65.4
Not in Labour Force	40.0	32.6	32.7	24.6	46.7	25.0	54.5	29.3	73.3	84.2	43.3	34.6
TOTAL %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
(N)	(250)	(378150)	(245)	(500045)	(75)	(183190)	(55)	(134580)	(75)	(137930)	(705)	(1334905)
	%	%	%	%	%	%	%	%	%	%	%	%
Participation Rate	60.0	67.4	67.3	75.4	53.3	75.0	45.5	60.7	26.7	15.8	56.7	65.4
Unemployment Rate	40.0	7.3	24.2	2.9	-	2.1	20.0	2.4	-	1.2	27.5	3.5

Sources: a) Statistics Canada. 1976 Census of Canada. Microfiche #EABC0B11, page 9053.

b) Statistics Canada. 1976 Census of Canada. Supply and Services Canada: Ottawa.  
Cat. #94-806, pages 15-58 to 15-66.

Table 79. Fort Chipewyan and Alberta: population 15 years and over by employment income and total income level in 1970 by sex.

Income Level	Fort Chipewyan		Alberta
	Employment Income	Total Income	Total Income
	%	%	%
<u>MALES</u>			
Zero Income, Not Working in 1970	22.6	] 9.7	] 8.2
Zero Income, Working in 1970	3.2		
Less than \$3000	45.2	54.8	27.8
\$3000 - 5999	16.1	19.4	] 47.2
\$6000 - 9999	9.7	9.7	
\$10000 and Over	4.8	4.8	16.7
Subtotal: Males 15 years & over	100%	100%	100%
<u>FEMALES</u>			
Zero Income, Not Working in 1970	55.4	] 35.7	] 36.3
Zero Income, Working in 1970	3.6		
Less than \$3000	28.6	50.0	39.6
\$3000 - 5999	7.1	8.9	] 23.0
\$6000 - 9999	3.6	3.6	
\$10000 and Over	1.8	1.8	1.2
Subtotal: Females 15 Years & over	100%	100%	100%
<u>BOTH SEXES</u>			
Zero Income, Not Working in 1970	38.7	] 21.8	] 22.1
Zero Income, Working in 1970	3.4		
Less than \$3000	36.1	52.9	33.6
\$3000 - 5999	12.6	15.1	] 35.3
\$6000 - 9999	5.9	6.7	
\$10000 and Over	3.4	4.2	9.1
TOTAL %	100%	100%	100%
(N)	(595)	(595)	(1113425)
<u>Average Income (Population with Income Only)</u>			
	\$	\$	\$
Males	3269	3268	6474
Females	2668	2251	2759
Both Sexes	3068	2873	4978

Sources: a) Statistics Canada. 1971 Census of Canada. Microfilm #500-331-C, page 6798.

b) Statistics Canada. 1971 Census of Canada. Microfilm #500-336-C, page 8470.

c) Statistics Canada. 1971 Census of Canada. Supply & Services Canada: Ottawa. Cat. #94-760.

Table 80. Anzac, Fort Mackay, and Surrounding Area and Alberta: population 15 years and over by labour force activity and sex, 1976.

Labour Force Activity	Anzac, Ft. Mackay, & Surrounding Area		Alberta
	N	%	%
<u>MALES</u>			
In Labour Force			
Employed	70	60.9	76.7
Unemployed	15	13.0	2.9
<u>Subtotal: Males in Labour Force</u>	<u>85</u>	<u>73.9</u>	<u>79.6</u>
Not in Labour Force	35	30.4	20.4
<u>Total: Males 15 Years &amp; Over</u>	<u>115</u>	<u>100%</u>	<u>100%</u>
<u>FEMALES</u>			
In Labour Force			
Employed	20	22.2	48.6
Unemployed	5	5.6	2.4
<u>Subtotal: Females in Labour Force</u>	<u>20</u>	<u>22.2</u>	<u>51.0</u>
Not in Labour Force	70	77.8	49.0
<u>Total: Females in Labour Force</u>	<u>90</u>	<u>100%</u>	<u>100%</u>
<u>BOTH SEXES</u>			
In Labour Force			
Employed	90	43.9	62.8
Unemployed	15	7.3	2.6
<u>Subtotal: Both Sexes in Labour Force</u>	<u>105</u>	<u>51.2</u>	<u>65.4</u>
Not in Labour Force	100	48.8	34.6
<u>TOTAL</u>	<u>205</u>	<u>100%</u>	<u>100%</u>
			(N= 1334905)
<u>Participation Rate</u>			
		<u>%</u>	<u>%</u>
Males		73.9	79.6
Females		22.2	51.0
Both Sexes		51.2	65.4
<u>Unemployment Rate</u>			
Males		17.6	3.7
Females		25.0	3.1
Both Sexes		14.3	3.5

Sources: a) Statistics Canada. 1976 Census of Canada. Microfiche #EAECOB11, page 9051.

b) Statistics Canada. 1976 Census of Canada. Supply and Services Canada: Ottawa. Cat.#94-802. page 5-25.

Table 81. Anzac, Fort Mackay, and Surrounding Area and Alberta: population 15 years and over by labour force activity and age, 1976.

Labour Force Activity	15-24 Years		25-44 Years		45-54 Years		55-64 Years		65 Years and Over		All Ages (15 Years and Over)	
	Anzac, etc.	Alberta	Anzac, etc.	Alberta	Anzac, etc.	Alberta	Anzac, etc.	Alberta	Anzac, etc.	Alberta	Anzac, etc.	Alberta
	%	%	%	%	%	%	%	%	%	%	%	%
In Labour Force												
Employed	25.0	62.5	61.1	73.2	40.0	73.4	33.3	59.2	25.0	15.6	43.9	62.8
Unemployed	8.3	4.9	5.5	2.2	20.0	1.6	33.3	1.5	-	0.2	7.3	2.6
Subtotal: In Labour Force	33.3	67.4	66.7	75.4	60.0	75.0	66.7	60.7	25.0	15.8	51.2	65.4
Not in Labour Force	66.7	32.4	33.3	24.6	40.0	25.0	33.3	29.3	75.0	84.2	48.8	34.6
TOTAL %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
(N)	(60)	(378150)	(90)	(500045)	(25)	(183190)	(15)	(134580)	(20)	(137930)	(205)	(1334905)
	%	%	%	%	%	%	%	%				
Participation Rate	33.3	67.4	66.7	75.4	60.0	75.0	66.7	60.7	25.0	15.8	51.2	65.4
Unemployment Rate	25.0	7.3	8.3	2.9	33.3	2.1	50.0	2.4	-	1.2	14.3	3.5

Sources: a) Statistics Canada. 1976 Census of Canada. Microfiche #EABCOB11, page 9051.

b) Statistics Canada. 1976 Census of Canada. Supply and Services Canada: Ottawa. Cat. #94-806, pages 15-58 to 15-66.



Table 82. Anzac, Fort Mackay, and Surrounding Area and Alberta: population 15 years and over by employment income and total income level in 1970 by sex.

Income Level	<u>Anzac, Ft. Mackay &amp; Surrounding Area</u>		<u>Alberta</u>
	Employment Income	Total Income	Total Income
	<u>%</u>	<u>%</u>	<u>%</u>
<u>MALES</u>			
Zero Income, Not Working in 1970	28.1	] 12.3	] 8.2
Zero Income, Working in 1970	-		
Less than \$3000	26.3	38.6	27.8
\$3000 - 5999	22.8	24.6	] 47.2
\$6000 - 9999	14.0	15.8	
\$10000 and Over	<u>7.0</u>	<u>7.0</u>	<u>16.7</u>
Subtotal: Males 15 Years & Over	<u>100%</u>	<u>100%</u>	<u>100%</u>
<u>FEMALES</u>			
Zero Income, Not Working in 1970	80	] 63.3	] 36.3
Zero Income, Working in 1970	-		
Less than \$3000	16.7	33.3	39.6
\$3000 - 5999	3.3	3.3	] 23.0
\$6000 - 9999	-	-	
\$10000 and over	<u>-</u>	<u>-</u>	<u>1.2</u>
Subtotal: Females 15 Years & Over	<u>100%</u>	<u>100%</u>	<u>100%</u>
<u>BOTH SEXES</u>			
Zero Income, Not Working in 1970	44.8	] 31.0	] 22.1
Zero Income, Working in 1970	-		
Less than \$3000	24.1	36.8	33.6
\$3000 - 5999	16.1	16.1	] 35.3
\$6000 - 9999	9.2	11.5	
\$10000 and Over	<u>5.7</u>	<u>4.6</u>	<u>9.1</u>
TOTAL %	100%	100%	100%
(N)	(435)	(435)	(1113425)
<u>Average Income (Population with Income Only)</u>			
	\$	\$	\$
Males	4719	4330	6474
Females	1941	1734	2759
Both Sexes	4364	3859	4978

Sources: a) Statistics Canada. 1971 Census of Canada. Microfilm #500-331-C, page 6780.

b) Statistics Canada. 1971 Census of Canada. Microfilm #500-336-C, page 8447.

c) Statistics Canada. 1971 Census of Canada. Supply and Services Canada: Ottawa. Cat. #94-760.

Table 83. Outlying Settlements<sup>(1)</sup> and Alberta: income and taxation statistics for selected years.

Year	<u>Average Income of Taxable Returns</u>			<u>Percentage of Returns That Are Not Taxable</u>	
	<u>Outlying Settlements</u>	<u>Alberta</u>	<u>Percentage of Alberta<sup>(2)</sup></u>	<u>Outlying Settlements</u>	<u>Alberta</u>
	<u>\$</u>	<u>\$</u>	<u>%</u>	<u>%</u>	<u>%</u>
1967	4727	5408	87.4	40.9	20.0
1968	4958	5695	87.1	37.4	19.7
1969	5034	6035	83.4	34.8	19.2
1970	5540	6355	87.2	35.1	19.0
1971	6046	7189	84.1	41.2	24.7
1972	6636	7792	85.2	36.7	22.4
1973	6947	8570	81.1	29.9	20.4
1974	7059	10112	69.8	28.1	19.2
1975	9658	12959	74.5	39.0	28.7
1976	11352	14323	79.3	46.0	27.7

Notes: (1) Includes Anzac, Cheechum, Embarras Portage, Fort Chipewyan, and Waterways.

(2) Outlying Settlement average income divided by Alberta average income.

Source: Peter C. Nichols and Associates Ltd. Overview of Local Economic Development in the Athabasca Oil Sands Region Since 1961. Alberta Oil Sands Environmental Research Program. March 1979.

## 7. HOUSING

### 7.1 INTRODUCTION

In this chapter we analyze the material from Statistics Canada and other sources on the occupied private dwellings in the various communities and surrounding area of the AOSERP Study Area. As may be recalled from Chapter 2, an "occupied private dwelling" is defined as a structurally separate set of living quarters with a private entrance from outside or from a common hallway or stairway inside the building. Dwellings under construction and collective dwellings (e.g. hotels, motels, hospitals, institutions, etc.) are not included in this categorization.

### 7.2 FORT McMURRAY

In Table 84, which presents data for Fort McMurray on the number of occupied private dwellings by their structural type for the census years between 1961 and 1976, we see that there has been a rapid decline in the proportion of single detached homes. This decline is particularly evident with the introduction of each of the two oil sands developments - Great Canadian Oil Sands in 1966 and Syncrude in 1976. At the same time, there has been a continual increase in the proportion of single attached residences, apartments, and movable dwellings. With respect to movable dwellings, it is evident that their presence is related to the degree of oil sands activity in the area. For example, there were no movable dwellings in the area in 1961 - before major oil sands development had begun. But during the peak of GCOS construction in 1966, 23.3% of the housing in Fort McMurray consisted of movable dwellings. This proportion decreased to 17.9% in 1971; it was also a time when relatively little oil sands development was occurring in the area. Finally, at the peak of Syncrude construction in 1976, movable dwellings represented 30.6% of the occupied private dwellings in Fort McMurray.

Related to the reduction in the proportion of single detached homes in the community, there has been a decline in the percentage of residents in Fort McMurray who own the dwelling in which they live (Table 85). In 1961, 70.4% of Fort McMurray residents owned their own homes - a figure quite comparable to the Alberta percentage. By 1979, only 47.3% of Fort McMurray residents owned their own home, compared with a much higher figure for Alberta.

Turning to Table 86, we see that ownership patterns differ with the type of private dwelling. Although the overall ownership of occupied private dwellings declined between 1971 and 1976, ownership of single detached units increased from 69.0% to 74.6%. A more dramatic increase in ownership occurred for single attached units - from 4.3% in 1971 to 22.0% in 1976. Ownership of apartments also increased slightly between these two census years. Only for movable occupied private dwellings did the percentage owned decrease between 1971 and 1976.

Table 86 also points to the fact that the overall decrease in the ownership of occupied private dwellings in Fort McMurray between 1971 and 1976 was caused by the relative increase in the proportion of those types of dwellings which tend to be rented (such as single attached units and apartments) rather than owned.

In Chapter 3, we indicated that much of Fort McMurray's infrastructure was developed during the Second World War in order to accommodate the presence of American troops in the area. This is supported by Table 87 which shows that 60.1% of Fort McMurray's occupied private dwellings were built between 1920 and 1945. Although this period of construction is not precise, it is evident from other sources that most of the buildings in the community in 1961 were built during the war years. The 1961 information on period of construction also points to the fact that the community experienced relatively little economic growth between 1946 and 1961. Only 33.2% of Fort McMurray's occupied private dwellings in 1961 were built between 1946 and 1961 compared with 55.1% of those in Alberta.

By 1971, a rapid shift had occurred. 62.0% of Fort McMurray's private occupied dwellings in 1971 were built between 1966 and 1970, compared with only 18.0% in Alberta. In fact, 4.0% of the occupied private dwellings in existence on June 1st, 1971 were built within six months of that date, compared with only 0.8% of those in Alberta. This table illustrates, therefore, that oil sands development has had a strong impact upon the expansion of housing in Fort McMurray.

Table 88 also shows the relationship between oil sands development and the building of dwelling units in Fort McMurray. During the construction of GCOS in the mid-1960's, the number of dwelling units proposed increased dramatically from 34 total units in 1965 to 366 total units by 1967. Following the GCOS construction, the number of units proposed fell to only 13 by 1969 before increasing moderately from 125 in 1970 to 271 by 1973.

The number of dwelling units proposed in building permits increased markedly during the mid-1970's as the construction of a second oil sands plant, Syncrude, became imminent.

In addition to the number of dwelling units proposed in building permits, the total value of construction in Fort McMurray reflects the presence of oil sands development in the area (Table 89). The value of construction increased from 2.0 million dollars in 1964 to 5.7 million dollars by 1967 - the peak of GCOS construction. Construction fell quickly to a value of only one million dollars by 1969, but increased to 5.5 million in 1973 as plans for the construction of the Syncrude plant were completed.

With the first stages of Syncrude construction in 1974, the total value of construction in Fort McMurray jumped to 41.3 million dollars - nearly eight times the value of construction from the previous year. Construction reached a peak in 1976 with a total value of 87.8 million dollars, before falling to 49.8 million dollars in 1977.

In Table 89, which also delineates the total value of construction by type of infrastructural development, we see that residential construction represented 59.6% of total construction

between 1964 and 1979. This is followed by the building of institutional and government offices and commercial buildings which represent 19.4% and 19.2% of the total value of construction, respectively. Industrial development has represented an average of only 1.8% of the total value of construction in Fort McMurray between 1964 and 1979.

Turning to Table 90, we see that there was considerable development of the municipal and residential infrastructure relating to water supply, bath and toilet facilities between 1961 and 1971. In 1961, over two-thirds (68.8%) of Fort McMurray residents had no running water compared with only 21.4% in Alberta. By 1971, only 5.6% of Fort McMurray residents had no running water compared with 9.9% for Alberta.

Similar changes may be seen with respect to bath and toilet facilities. Specifically, the majority of Fort McMurray dwellings had no bath or toilet facilities in 1961. By 1971, a larger percentage of occupied private dwellings in Fort McMurray than in Alberta had such facilities.

The average number of rooms per dwelling increased between 1961 and 1971 in Fort McMurray from 4.1 rooms to 4.9 rooms (Table 91). The greatest changes occurred in the decrease in the number of one and two room dwellings from 22.5% of all dwellings in 1961 to only 4.0% of all dwellings by 1971. The greatest increase occurred in the number of five room dwellings which represented 36.7% of all occupied private dwellings in 1971 compared with 23.3% in 1961.

In Table 92, we see that the average number of persons per room in Fort McMurray has decreased from 1.14 in 1961 to 0.84 by 1971. While this is a considerable decrease in the average number of persons per room, the 1971 figure remains above that of Alberta.

To summarize the housing characteristics of Fort McMurray, it may be said that there has been a rapid decrease in the proportion of single detached homes with a corresponding increase in the percentage of apartments and movable dwellings. This shift in housing is particularly noticeable during the two oil sands

construction periods - GCOS construction during the mid-1960's and Syncrude construction during the mid-1970's. Because of the increase in the typically rental-type of dwellings, there has been a marked decrease in the percentage of dwellings owned by the inhabitants.

Since the mid-1960's, there has been a 'construction boom' in Fort McMurray. This 'boom' is particularly noticeable during the mid-1970's with the introduction of Syncrude construction when the value of construction in Fort McMurray increased eight fold in one year. Most construction was residential, although there has been an increase in recent years in the development of commercial and government buildings. There has been very little construction of industrial buildings in Fort McMurray over the past 15 years.

With the 'construction boom', a rapid change occurred in the nature of occupied private dwellings in Fort McMurray. Rapid development of hot and cold running water, bath and toilet facilities occurred between 1961 and 1971 to the point that Fort McMurray has more advanced facilities in this respect than is typically found in Alberta. Moreover, there were more rooms per dwelling and fewer persons per room in occupied private dwellings in Fort McMurray in 1971 compared with 1961.

### 7.3 FORT CHIPEWYAN

Between 1966 and 1976 in Fort Chipewyan there has been a slight decline in the percentage of single detached homes and an increase in the percentage of single attached and movable dwellings (Table 93). Notably, movable dwellings represented 10.4% of all occupied private dwellings in Fort Chipewyan in 1976 - a remarkable increase when one considers that there were no movable dwellings in the area in 1966.

With respect to the tenure of occupied private dwellings in Fort Chipewyan, ownership decreased from 84.9% in 1966 to 64.6% by 1976 which, for the latter year, is comparable to the

Alberta figure (Table 94).

As may be seen from Table 95, ownership of single detached homes decreased only slightly between 1971 and 1976. Due to the distortion caused by random rounding used by Statistics Canada, little interpretation may be made of the tenure of other categories of housing from this table.

To summarize, housing in Fort Chipewyan may be characterized as consisting mostly of single detached homes with an increasing presence of movable dwellings. Approximately two-thirds of the dwellings are owned by the inhabitants - a figure comparable to Alberta and much higher than for Fort McMurray.

#### 7.4 ANZAC, FORT MACKAY AND SURROUNDING AREA

As may be seen from Table 96, single detached homes represent the majority of occupied private dwellings in Anzac, Fort Mackay, and the surrounding area. However, there has been a decrease in the percentage of single detached dwellings between 1966 and 1976 with a relative increase in the percentage of single attached and movable dwellings. There are no occupied apartments in the area.

As with Fort McMurray and Fort Chipewyan, there has been a rapid increase in the use of movable dwellings as occupied private residences in this area. In fact, there were 15 occupied movable dwellings in 1976 representing 15.8% of all occupied private dwellings in the area, compared with none in 1966.

Turning to Table 97, we see that there has been a decrease in the percentage of occupied private dwellings in the area which are owned from 80.7% in 1966 to 63.2% by 1976. This reduces the percentage of occupied private dwellings which are owned by the inhabitants to a figure which is quite comparable to that of Alberta.

The percentage of single detached homes which are owned by the inhabitants has decreased from 82.6% in 1971 to 66.7% in 1976. Because of the use of random rounding by Statistics Canada,



we are unable to accurately interpret the data for the tenure of other types of occupied private dwellings in Anzac, Fort Mackay and the surrounding area.

The housing in Anzac, Fort Mackay and the surrounding area may be characterized as being mostly single detached dwellings with a recent increase in the percentage of movable dwellings. While the majority of occupied private dwellings in the area are owned, this percentage has decreased in recent years.

Table 84. Fort McMurray: occupied private dwellings by type for selected years.

Type of Dwelling	1961		1966		1971		1976	
	N	%	N	%	N	%	N	%
Single Detached	276	91.7	373	61.1	1015	62.5	1575	37.4
Single Attached								
Double House (1)	15	5.0	15	2.5	85	5.2	350	8.3
Row House							95	2.3
Attached to Non-Res. Structure	10	3.3	17	2.8	30	1.9	5	0.1
<u>Subtotal:</u>	<u>25</u>	<u>8.3</u>	<u>32</u>	<u>5.3</u>	<u>115</u>	<u>7.1</u>	<u>450</u>	<u>10.7</u>
Apartments								
Duplex	-	-	22	3.6	25	1.5	875	20.8
Apt/Flat & Other	-	-	41	6.7	175	10.8	30	0.7
<u>Subtotal: Apartments</u>	<u>-</u>	<u>-</u>	<u>63</u>	<u>10.3</u>	<u>200</u>	<u>12.3</u>	<u>905</u>	<u>21.5</u>
Movable Dwellings	-	-	142	23.3	290	17.9	1290	30.6
<b>TOTAL DWELLINGS</b>	<b>301</b>	<b>100%</b>	<b>610</b>	<b>100%</b>	<b>1620</b>	<b>100%</b>	<b>4215</b>	<b>100%</b>

Notes: (1) Includes 'semi-detached' dwellings for 1971 figures.

Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #20000, page 166.

b) Statistics Canada. 1966 Census of Canada. Microfilm #27001, page 201.

c) Statistics Canada. 1971 Census of Canada. Microfilm #20001, page 1900.

d) Statistics Canada. 1976 Census of Canada. Microfiche #SDDHH11, page 1162.

Table 85. Fort McMurray and Alberta: occupied private dwellings by tenure for selected years.

Year	<u>Owned</u>			<u>Rented</u>			<u>Total Dwellings</u>			
	Ft.McMurray		Alberta	Ft.McMurray		Alberta	Ft.McMurray		Alberta	
	N	%	%	N	%	%	N	%	N	%
1961	212	70.4	71.0	89	29.6	29.0	301	100%	349809	100%
1966	343	56.2	67.9	267	43.8	32.1	610	100%	393707	100%
1971	890	55.1	63.9	735	44.9	36.1	1615	100%	464240	100%
1976	2085	49.5	64.8	2130	50.0	35.2	4215	100%	575280	100%
1979 <sup>(1)</sup>	3496	47.3	N/A	3892	52.7	N/A	7388	100%	N/A	N/A

Notes: (1) Lease/purchase arrangements are categorized as "owned".  
The 109 "other" tenures and 223 non-responses are excluded.

- Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #
- b) Statistics Canada. 1966 Census of Canada. Microfilm #
- c) Statistics Canada. 1966 Census of Canada. Supply and Services Canada: Ottawa. Cat. #93-607, page 43-1.
- d) Statistics Canada. 1971 Census of Canada. Microfilm #20001, page 1900.
- e) Statistics Canada. 1976 Census of Canada. Microfiche #SDDHALL, page 1162.
- f) Statistics Canada. 1976 Census of Canada. Supply and Services Canada: Ottawa, Cat. #93-802, page 5-5.
- g) New Town of Fort McMurray. 1979 Municipal Census. December, 1979. page 9.

Table 86. Fort McMurray and Alberta: occupied private dwellings by type and tenure for selected years.

Type of Dwelling	1971			1976		
	Ft.McMurray		Alberta	Ft.McMurray		Alberta
	N	%	%	N	%	%
Single Detached						
Owned	700	69.0	82.4	1175	74.6	86.3
Rented	315	31.0	17.6	400	25.4	13.7
<u>Total: Single Detached</u>	<u>1015</u>	<u>100%</u>	<u>100%</u>	<u>1575</u>	<u>100%</u>	<u>100%</u>
Single Attached						
Owned	5	4.3	23.4	100	22.0	28.5
Rented	110	95.7	76.6	355	78.0	71.5
<u>Total: Single Attached</u>	<u>115</u>	<u>100%</u>	<u>100%</u>	<u>455</u>	<u>100%</u>	<u>100%</u>
Apartments						
Owned	5	2.5	9.8	40	4.5	10.6
Rented	195	97.5	90.2	855	95.5	89.4
<u>Total: Apartments</u>	<u>200</u>	<u>100%</u>	<u>100%</u>	<u>895</u>	<u>100%</u>	<u>100%</u>
Movable Dwellings						
Owned	180	62.1	N/A	770	59.7	89.0
Rented	110	37.9	N/A	520	40.3	11.0
<u>Total: Movable Dwellings</u>	<u>290</u>	<u>100%</u>	<u>N/A</u>	<u>1290</u>	<u>100%</u>	<u>100%</u>
All Dwellings						
Owned	890	54.9	63.8	2085	49.5	64.8
Rented	730	45.1	36.2	2130	50.5	35.2
<u>TOTAL DWELLINGS</u>	<u>1620</u>	<u>100%</u>	<u>100%</u>	<u>4215</u>	<u>100%</u>	<u>100%</u>
			(N=464,240)			(N=575,280)

Sources: a) Statistics Canada. 1971 Census of Canada. Microfilm #20001, page 1900.

b) Statistics Canada. 1971 Census of Canada. Supply and Services Canada: Cat. #93-738, page 27-10.

c) Statistics Canada. 1976 Census of Canada. Microfiche #SDDH11, page 1162.

d) Statistics Canada. 1976 Census of Canada. Supply and Services Canada: Ottawa. Cat. #93-802, page 5-5.

Table 87. Fort McMurray and Alberta: occupied private dwellings by period of construction for selected years.

Period of Construction	1961		1971	
	Ft. McMurray	Alberta	Ft. McMurray	Alberta
	%	%	%	%
Before 1920	6.6	18.6	8.3	10.4
Between 1920-1945	60.1	26.4		16.4
Between 1946-1950	33.2	55.1	2.8	11.0
Between 1951-1960			7.7	27.6
Between Jan. 1, 1961-June 1, 1961	-	N/A	14.8	15.7
Between June 1, 1961-1965	N/A			
Between 1966-1970	N/A	N/A	62.0	18.0
Between Jan. 1, 1971-June 1, 1971	N/A	N/A	4.0	0.8
TOTAL DWELLINGS %	100%	100%	100%	100%
(N)	(301)	(349809)	(1620)	(464610)

Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #20000, page 166.

b) Statistics Canada. 1961 Census of Canada. Supply and Services Canada: Ottawa., Cat. #93-523.

c) Statistics Canada. 1971 Census of Canada. Microfilm #20007, page 49.

d) Statistics Canada 1971 Census of Canada. Supply and Services Canada: Ottawa., Cat. #93-731.

Table 88. Fort McMurray: number of dwellings units proposed in building permits issued for selected years.

Year	Single Dwellings (1) and Cottages		Double Dwellings		Row Housing		Apartments (2) and Conversions		Total Units	
	No.	%	No.	%	No.	%	No.	%	No.	%
1964	17	24.3	-	-	-N/A-		53	75.7	70	100
1965	34	100.0	-	-	-N/A-		-	-	34	100
1966	103	56.6	42	23.1	-N/A-		37	20.3	182	100
1967	234	63.9	80	21.9	-N/A-		52	14.2	366	100
1968	145	97.3	4	2.7	-N/A-		-	-	149	100
1969	13	100.0	-	-	-N/A-		-	-	13	100
1970	66	52.8	-	-	-N/A-		59	47.2	125	100
1971	102	68.9	1	0.7	-N/A-		45	30.4	148	100
1972	138	55.9	32	13.0	-N/A-		77	31.2	247	100
1973	86	31.7	4	1.5	-	-	181	66.8	271	100
1974	527	40.5	88	6.8	7	0.5	680	52.2	1302	100
1975	317	45.9	80	11.6	-	-	293	42.5	690	100
1976	302	18.8	14	0.9	579	36.0	713	44.3	1608	100
1977	102	8.8	24	2.1	318	27.6	709	61.5	1153	100
1978	257	68.4	54	14.4	-	-	65	17.3	376	100
1979	425	76.9	76	13.7	52	9.4	-	-	553	100
Average %	56.7%		7.0%		5.9%		31.3%		100%	

- NOTES: (1) Separate data on cottages not available before 1972. Only one cottage registered (in 1972) between 1972-1979.
- (2) Only three conversions registered between 1964-1979: one in 1966, two in 1974.

Sources: a) Statistics Canada. Building Permits, Monthly Summary.  
Supply and Services Canada: Ottawa. Cat. #64-001.  
(for 1964, 1965, 1979.)

b) Statistics Canada. Building Permits, Annual Summary.  
Supply and Services Canada: Ottawa. Cat. #64-203.  
(for 1966-1978.)

Table 89. Fort McMurray: estimated value of construction from building permits issued for selected years (\$000's) (1).

Year	Residential		Industrial		Commercial		Institutional & Government		Total Value of Construction	
	\$	%	\$	%	\$	%	\$	%	\$	%
1964	666	32.8	68	3.3	1158	57.0	141	6.9	2033	100
1965	461	19.6	-	-	332	14.1	1565	66.4	2358	100
1966	2258	93.9	38	1.6	109	4.5	-	-	2405	100
1967	4692	82.3	15	0.3	251	4.4	740	13.0	5698	100
1968	2103	64.6	22	0.7	641	19.7	490	15.0	3256	100
1969	271	27.0	-	-	41	4.1	690	68.9	1002	100
1970	1551	83.1	46	2.5	28	1.5	242	13.0	1867	100
1971	2278	78.0	21	0.7	404	13.8	216	7.4	2919	100
1972	3298	52.9	392	6.3	2015	32.3	536	8.6	6239	100
1973	3979	72.7	8	0.1	1124	20.5	365	6.7	5476	100
1974	29082	70.5	1086	2.6	5099	12.4	5986	14.5	41253	100
1975	25452	58.7	185	0.4	4820	11.1	12868	29.7	43324	100
1976	70109	79.9	3630	4.1	11892	13.5	2155	2.5	87786	100
1977	25586	51.4	974	2.0	16688	33.5	6578	13.2	49826	100
1978	18791	33.4	1353	2.4	22864	40.7	13186	23.5	56194	100
1979	30025	52.2	1387	2.4	14208	24.7	11901	20.7	57521	100
Average %		59.6%		1.8%		19.2%		19.4%		100%

Note: (1) In current dollars.

Sources: a) Statistics Canada, Building Permits, Monthly Summary.  
Supply and Services Canada: Ottawa. Cat. #64-001.  
(1964, 1965, 1979).

b) Statistics Canada. Building Permits Annual Summary.  
Supply and Services Canada: Ottawa. Cat #64-203.  
(For 1966-1978).

Table 90. Fort McMurray and Alberta: occupied private dwellings by water supply, bath and toilet facilities for selected years.

Water Supply	1961		1971	
	Fort McMurray	Alberta	Fort McMurray	Alberta
	%	%	%	%
Hot and Cold Running Water	21.3	75.3	93.2	90.8
Cold Running Water Only	10.0	3.3	0.9	1.7
No Running Water	68.8	21.4	5.6	9.9
TOTAL DWELLINGS % (N)	100% (301)	100% (349,809)	100% (1620)	100% (464,240)
Bath Facilities				
	%	%	%	%
Exclusive Facilities	22.9	69.4	93.2	88.6
Shared Facilities	-	5.0	0.3	2.3
No Facilities, Dwelling with Running Water	8.3	4.2	1.2	1.6
No Facilities, Dwellings without Running Water	68.8	21.4	5.6	7.4
TOTAL DWELLINGS % (N)	100% (301)	100% (349,809)	100% (1620)	100% (464,240)
Toilet Facilities				
	%	%	%	%
One Exclusive Flush Toilet	17.9	57.4	75.0	71.2
Two or More Exclusive Flush Toilets	-	9.4	18.5	17.7
Shared Flush Toilets	1.7	7.7	0.3	1.9
Chemical Toilets	11.6	1.9	] 6.2	] 9.2
Outhouse/No Toilets	68.8	23.6		
TOTAL DWELLINGS % (N)	100% (301)	100% (349,809)	100% (1620)	100% (464,240)

Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #20000, page 166.b) Statistics Canada. 1961 Census of Canada. Supply and Services Canada: Ottawa. Cat. #93-525.c) Statistics Canada. 1971 Census of Canada. Microfilm #20007, page 172.d) Statistics Canada. 1971 Census of Canada. Supply and Services Canada. Cat. #93-735.



Table 91. Fort McMurray: number of rooms per dwelling for selected years.

Number of Rooms	1961		1971	
	N	%	N	%
1	29	9.5	25	1.5
2	39	13.0	40	2.5
3	30	10.0	180	11.1
4	78	25.9	290	17.9
5	70	23.3	595	36.7
6	40	13.3	305	18.8
7	10	3.3	115	7.1
8	-	-	40	2.5
9	-	-	10	0.6
10	-	-	10	0.6
11	-	-	-	-
12 or more	5	1.7	5	0.3
TOTAL DWELLINGS	301	100%	1620	100%
TOTAL ROOMS	1234		7995	
AVERAGE ROOMS PER DWELLING	4.1		4.938	

Sources: a) Statistics Canada. 1961 Census of Canada.  
Microfilm #20000, page 166.

b) Statistics Canada. 1971 Census of Canada.  
Microfilm#20004, pages 1901A-1901B.

Table 92. Fort McMurray and Alberta: occupied private dwellings by persons per room for selected years.

Persons Per Room	1961		1971	
	Ft.McMurray	Alberta	Ft.McMurray	Alberta
	%	%	%	%
0.0 - 0.5	19.9	31.6	20.1	43.5
0.6 - 1.0	31.2	50.9	59.0	48.2
1.1 - 1.5	21.6	12.1	15.7	6.2
1.6 - 2.0	14.6	3.7	3.7	1.4
2.1 - 2.5	4.7	0.7		
2.6 +	8.0	1.1	1.5	0.7
TOTAL DWELLINGS % (N)	100% (301)	100% (349809)	100% (1620)	100% (464240)
AVERAGE PERSONS PER ROOM	1.14	0.76	0.84	0.63

Sources: a) Statistics Canada. 1961 Census of Canada.  
Microfilm #20000, page 166.

b) Statistics Canada. 1961 Census of Canada.  
Supply and Services Canada: Ottawa.  
Cat. #93-523.

c) Statistics Canada. 1971 Census of Canada.  
Microfilm #20008, page 1715.

d) Statistics Canada. 1971 Census of Canada.  
Supply and Services Canada: Ottawa.  
Cat. #93-730.

Table 93. Fort Chipewyan: occupied private dwellings by type for selected years.

Type of Dwelling	1966		1971		1976	
	N	%	N	%	N	%
Single Detached	195	95.1	175	92.1	200	83.3
Single Attached						
Double House (1)	-	-	5	2.6	5	2.1
Row House	1	0.5	5	2.6	5	2.1
Attached to Non-Res. Structure						
<u>Subtotal: Single Attached</u>	1	0.5	10	5.3	15	6.3
Apartments						
Duplex	8	3.9	5	2.6	5	2.1
Apt/Flat and Other	1	0.5	-	-	-	-
<u>Subtotal: Apartments</u>	9	4.4	5	2.6	5	2.1
Movable Dwellings	-	-	5	2.6	25	10.4
<u>TOTAL DWELLINGS</u>	205	100%	190	100%	240	100%

Notes: (1) Includes 'semi-detached' dwellings for 1971 figures.

Sources: a) Statistics Canada. 1966 Census of Canada.  
Microfilm #27008, page 1189.

b) Statistics Canada. 1971 Census of Canada.  
Microfilm #20015, page 3864.

c) Statistics Canada. 1976 Census of Canada.  
Microfiche #EADH11, pages 6779-6780.

Table 94. Fort Chipewyan and Alberta: occupied private dwellings by tenure for selected years.

Year	<u>Owned</u>			<u>Rented</u>			<u>Total</u>			
	Ft. Chipewyan		Alberta	Ft. Chipewyan		Alberta	Ft. Chipewyan		Alberta	
	N	%	%	N	%	%	N	%	N	%
1966	174	84.9	67.9	31	15.1	32.1	205	100%	393707	100%
1971	135	71.1	63.9	60	28.9	36.1	190	100%	464240	100%
1976	155	64.6	64.8	85	35.4	35.2	240	100%	575280	100%

Sources: a) Statistics Canada. 1961 Census of Canada. Microfilm #27008, page 118.

b) Statistics Canada. 1966 Census of Canada. Supply and Services Canada: Ottawa. Cat. #93-607. p.43-1.

c) Statistics Canada. 1971 Census of Canada. Microfilm #20015, page 386.

d) Statistics Canada. 1976 Census of Canada. Microfiche #EADH11, pages 6779-6780.

e) Statistics Canada. 1976 Census of Canada. Supply and Services Canada: Ottawa. Cat. #93-802, p.5-5.

Table 95. Fort Chipewyan and Alberta: occupied private dwelling by type and tenure for selected years.

Type and Tenure	1971			1976		
	Ft. Chipewyan		Alberta	Ft. Chipewyan		Alberta
	N	%	%	N	%	%
Single Detached						
Owned	125	73.5	82.4	145	72.5	86.3
Rented	45	26.5	17.6	55	27.5	13.7
<u>Total: Detached</u>	<u>170</u>	<u>100%</u>	<u>100%</u>	<u>200</u>	<u>100%</u>	<u>100%</u>
Single Attached						
Owned	-	-	23.4	5	25.0	28.5
Rented	10	100	76.6	15	75.0	71.5
<u>Total: Attached</u>	<u>10</u>	<u>100%</u>	<u>100%</u>	<u>20</u>	<u>100%</u>	<u>100%</u>
Apartments						
Owned	-	-	9.8	-	-	10.6
Rented	5	100	90.2	5	100	89.4
<u>Total: Apartments</u>	<u>5</u>	<u>100%</u>	<u>100%</u>	<u>5</u>	<u>100%</u>	<u>100%</u>
Movable Dwellings						
Owned	5	100	N/A	5	25	89.0
Rented	-	-	N/A	15	75	11.0
<u>Total Movable Dwellings</u>	<u>5</u>	<u>100%</u>	<u>N/A</u>	<u>20</u>	<u>100%</u>	<u>100%</u>
All Dwellings						
Owned	130	68.4	63.8	155	63.3	64.8
Rented	60	31.6	36.2	90	36.7	35.2
<u>TOTAL DWELLINGS</u>	<u>190</u>	<u>100%</u>	<u>100%</u> (N=464,240)	<u>245</u>	<u>100%</u>	<u>100%</u> (N=575,280)

Sources: a) Statistics Canada. 1971 Census of Canada. Microfilm #20015, page 3864.

b) Statistics Canada. 1971 Census of Canada. Supply and Services Canada: Ottawa. Cat. #93-738, page 27-10.

c) Statistics Canada. 1976 Census of Canada. Microfiche #EADHA11, pages 6779-6780.

d) Statistics Canada. 1976 Census of Canada. Supply and Services Canada: Ottawa. Cat. #93-802, page 5-5.

Table 96. Anzac, Fort Mackay, and Surrounding Area: occupied private dwellings by type for selected years.

Type of Dwelling	1966		1971		1976	
	N	%	N	%	N	%
Single Detached	105	96.3	115	92.0	75	78.9
Single Attached						
Double House (1)	-	-	-	-	-	-
Row House	-	-	-	-	-	-
Attached to Non-Res. Structure	4	3.7	5	4.0	5	5.3
<u>Subtotal: Single Attached</u>	<u>4</u>	<u>3.7</u>	<u>5</u>	<u>4.0</u>	<u>5</u>	<u>5.3</u>
Apartments						
Duplex	-	-	-	-	-	-
Apt./Flat and other	-	-	-	-	-	-
<u>Subtotal: Apartments</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Movable Dwellings	-	-	10	8.0	15	15.8
<b>TOTAL DWELLINGS</b>	<b>109</b>	<b>100%</b>	<b>125</b>	<b>100%</b>	<b>95</b>	<b>100%</b>

Notes: (1) Includes 'semi-detached' dwellings for 1971 figures.

Sources: a) Statistics Canada. 1966 Census of Canada. Microfilm #27008, page 1189.

b) Statistics Canada. 1971 Census of Canada. Microfilm #20015, page 3864.

c) Statistics Canada. 1976 Census of Canada. Microfiche #EADHALL, pages 6779-6780.

Table 97. Anzac, Fort Mackay, and Surrounding Area and Alberta: occupied private dwellings by tenure for selected years.

Year	<u>Owned</u>			<u>Rented</u>			<u>Total</u>			
	<u>Anzac, etc.</u>		<u>Alberta</u>	<u>Anzac, etc.</u>		<u>Alberta</u>	<u>Anzac, etc.</u>		<u>Alberta</u>	
	<u>N</u>	<u>%</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
1966	88	80.7	67.9	21	19.3	29.0	109	100%	393707	100%
1971	105	84.0	63.9	20	16.0	36.1	125	100%	464240	100%
1976	60	63.2	64.9	35	36.8	35.2	95	100%	575280	100%

- Sources:
- a) Statistics Canada. 1966 Census of Canada. Microfilm #27008, page 1189
  - b) Statistics Canada. 1966 Census of Canada. Supply and Services Canada: Ottawa. Cat. #93-607, page 43-1.
  - c) Statistics Canada. 1971 Census of Canada. Microfilm #20015, page 3853.
  - d) Statistics Canada. 1976 Census of Canada. Microfiche #EADH11, page 6779.
  - e) Statistics Canada. 1976 Census of Canada. Supply and Services Canada: Ottawa. Cat. #93-802, page 5-5.

Table 98. Anzac, Fort Mackay, Surrounding Area and Alberta: occupied private dwellings by type and tenure for selected years.

Type and Tenure	1971			1976		
	Anzac, etc.		Alberta	Anzac, etc.		Alberta
	N	%	%	N	%	%
Single Detached						
Owned	95	82.6	82.4	50	66.7	86.3
Rented	20	17.4	17.6	25	33.3	13.7
<u>Total:</u>	<u>115</u>	<u>100%</u>	<u>100%</u>	<u>75</u>	<u>100%</u>	<u>100%</u>
Single Attached						
Owned	-	-	23.4	5	100	28.5
Rented	-	-	76.6	-	-	71.5
<u>Total: Single Attached</u>	<u>-</u>	<u>-</u>	<u>100%</u>	<u>5</u>	<u>100%</u>	<u>100%</u>
Apartments						
Owned	-	-	9.8	-	-	10.6
Rented	-	-	90.2	-	-	89.4
<u>Total: Apartments</u>	<u>-</u>	<u>-</u>	<u>100%</u>	<u>-</u>	<u>-</u>	<u>100%</u>
Movable Dwellings						
Owned	10	100	N/A	5	33.3	89.0
Rented	-	-	N/A	10	66.7	11.0
<u>Total: Movable Dwellings</u>	<u>10</u>	<u>100%</u>	<u>N/A</u>	<u>15</u>	<u>100%</u>	<u>100%</u>
All Dwellings						
Owned	105	84.0	63.8	60	63.2	64.8
Rented	20	16.0	36.2	35	36.8	35.2
<u>TOTAL DWELLINGS</u>	<u>125</u>	<u>100%</u>	<u>100%</u> (N=464,240)	<u>95</u>	<u>100%</u>	<u>100%</u> (N=575,280)

Sources: a) Statistics Canada 1971 Census of Canada. Microfilm #20015, page 3853.

b) Statistics Canada 1971 Census of Canada. Supply and Services Canada: Ottawa. Cat. #93-738, page 27-10.

c) Statistics Canada 1976 Census of Canada. Microfiche #EADH11, page 6779.

d) Statistics Canada 1976 Census of Canada. Supply and Services Canada: Ottawa. Cat. #93-802. page 5-5.



## 8. SOCIAL PATTERNS, SERVICES AND INFRASTRUCTURE

### 8.1 INTRODUCTION

In this chapter, we analyze the statistics on business and social services, transportation systems, reported crimes, and related socioeconomic material not elsewhere presented in this report for the AOSERP Study Area.

Since most of the statistics presented here are relevant to Fort McMurray, this chapter is not delineated by community as was the case in the previous chapters. Rather, the discussion is divided into four major subject areas: retail, business service, and manufacturing activities; social services and facilities; reported crimes and offences; and transportation, infrastructure and activity.

We now turn to the discussion of business in the AOSERP Study Area.

### 8.2 RETAIL, BUSINESS SERVICE AND MANUFACTURING ACTIVITY

Table 99 presents data on the distribution of sales by the type of retail business group for selected years in Fort McMurray. As may be seen from this table, overall retail sales in the community have risen dramatically from 3.8 million dollars in 1966 to 74.5 million dollars by 1976. This increase has been particularly dramatic beginning with the planning stages of the Syncrude oil sands plant in 1973. (Unfortunately, we are unable to determine the effect of GCOS upon retail sales in Fort McMurray since 1966 is the first year for which the statistics are available.)

While the distribution of sales has varied considerably over the years, there has been a trend in recent years for automotive sales to represent an increasing proportion of total retail sales. In 1976 (the latest year for which statistics are available), 38.3% of all retail sales in Fort McMurray were in the automotive group. Although this category includes a variety of

retail outlets including accessories stores, service stations, car washes, paint and body shops, and motor vehicle dealers, over two-thirds (67.3%) of all automotive sales were reported by the four motor vehicle dealers in the community. An additional 27.8% of automotive sales was claimed by the five gasoline service stations.

In comparison, the hardware and home furnishings and apparel and accessories retail business groups have received a decreasing proportion of total retail sales in Fort McMurray. Retail sales for these two groups decreased from 17.1% in 1966 to only 7.9% by 1976. It is noteworthy that within the hardware and home furnishings group, major sales tended to be on the smaller items and in the home improvement categories such as paint, glass and wallpaper stores. This is consistent with the findings of Vay Dyke and Loberg (1978) who quoted several people who stated that they shopped for major appliances and much of their apparel in Edmonton. In fact, between 75% and 80% of the respondents to the above-mentioned report indicated that they shop as much as possible in Edmonton.

Turning to Table 100, we see that the number of retail business outlets in Fort McMurray has increased from 30 in 1966 to 91 in 1976. While this is a considerable increase in the number of outlets, it is not as large as the increase in retail sales during this period, suggesting that, on average, there has been an increase in retail sales per store. There has not been any major change in the distribution of retail outlets by retail business groups between 1966 and 1976.

Business services in Fort McMurray have not increased as quickly as have retail businesses. The number of locations has only increased from 22 in 1966 to 36 in 1976 (Table 101). Although net sales and receipts have doubled over this ten year period, much of this increase is undoubtedly due to inflation. The fact that business services have not increased considerably between 1966 and 1976 is also supported by the fact that the number of paid employees has increased only slightly from 169 in 1966 to 199 in 1976.

Table 102 compares the differences between Fort McMurray

and Alberta in the 1976 value of sales for retail and business service groups. As may be seen from this table, a much higher proportion of Fort McMurray's retail sales are spent on food than in Alberta. Although several explanations for this may exist, it is probable that food prices are higher in Fort McMurray, particularly since the community is not in an agricultural area. Retail sales in general merchandise, apparel and accessories, and hardware and home furnishings are lower in Fort McMurray than in Alberta, which may support our above suggestion that much shopping is still carried out in Edmonton. Also, automotive sales are somewhat higher in Fort McMurray. This should not be unexpected, considering the consumer behaviour of the large cohort of young people living in the area. Accommodation and food services represent a higher proportion of service trade sales for Fort McMurray than for Alberta in 1976.

With respect to manufacturing in Fort McMurray, Table 103 illustrates that there has been little change since 1972. The number of establishments in manufacturing has increased from 3 in 1972 to 5 by 1976. In fact, the Index of Manufacturers in Alberta (Alberta Business Development and Tourism, 1977) listed only 4 manufacturing establishments in 1977: a publishing company, a newspaper, a cement mixing company, and a dairy processor. Employment in manufacturing in Fort McMurray is also very low with only 75 people engaged in manufacturing in 1976. This represents less than 1% of total employment in the community in 1976. Finally, although value added has increased to 1.6 million dollars in 1976 (up from 354 thousand dollars in 1972), this is a very low value relative to the size of the Fort McMurray population.

The statistics on manufacturing in Fort McMurray, therefore, indicate that the community has not relied upon manufacturing as a major form of economic growth. While manufacturing must develop if Fort McMurray is to diversify its economic base, high costs of transportation and labour in the area may inhibit such diversification in the short run.

### 8.3 SOCIAL SERVICES AND FACILITIES

As may be seen in Table 104, the number of police personnel in Fort McMurray has increased from one constable without a police automobile in 1960 to 23 constables and 17 civilian personnel with 8 police cruisers by 1977. This increase in protective service in the community has been particularly rapid with the introduction of the Syncrude project into the area in 1974.

It is evident from Table 105, that hospital facilities in Fort McMurray have been lagging behind demand. Between 1961 and 1977, for example, the number of beds per 1,000 population decreased from 22.5 to only 2.7. At the same time, the number of adult and children admissions increased from about 700 during the early 1960's to about 4,000 during the mid-1970's. The number of newborns, in-patient and out-patient operations, and mothers delivered also increased dramatically during this period.

As this table shows, there were 25 hospital beds for the population of Fort McMurray during the early 1960's. This increased to 64 in 1966 with the addition of another hospital. The number of available beds in the community was reduced to 54 in 1970, however, because the new hospital ceased to exist as a separate operation. Although the number of hospital beds has remained at 54 between 1970 and 1977, new hospital facilities which, at the time of this report, are near completion, will include 300 beds and will have the capacity to serve a community of nearly 60,000 people (Syncrude Canada Limited, 1978).

Turning to Table 106, we see that the public assistance caseload in Fort McMurray has increased between 1965 and 1977. It is difficult to determine, however, what proportion of this increase is due to population increase, increase in the staff available, and increase in the need for this social assistance.

The statistics on the public library in Fort McMurray indicate that this facility is not keeping pace with the growth in the area (Table 107). For example, following the GCOS construction, the number of volumes per capita has decreased from 2.0 in 1969 to

only 1.2 by 1977. Although the number of volumes in the Fort McMurray Public Library approached 30,000 in 1979, the rapid increase in population has continued to reduce the number of volumes per resident to less than 1.15. Circulation has increased from 8,299 items in 1966 to 76,820 items in 1977. The 1979 estimate of circulation for the library is over 100,000.

Although public library memberships have kept pace with the growth of the Fort McMurray population (representing between 15% to 20% of the population for most years) the number of staff in the library has not increased as quickly. For instance, while one library staff served 263 members in 1966, each staff member in 1977 served an average of 767 members.

Another indication that the Fort McMurray Public Library lags behind the growth of the area is that the Alberta Ministry of Culture suggest that libraries should have 0.7 square feet per capita. Based upon Fort McMurray's population of 26,000 in 1979, the library should have more than 18,000 square feet; it has only 6,000 square feet. As one source indicated, funding is a major constraint as the library receives \$3.00 per person in grants from the provincial and municipal governments and supplementary donations from public and private sources are not as readily available in the community as they are in other Alberta municipalities (Syncrude Canada Limited, 1978).

As may be seen in Table 108, student enrolment in the Fort McMurray school system has increased quickly during the 1970's with most of the increase occurring since 1975. For example, student enrolment in the school year 1977-78 was up almost 25% from the previous year. It is also evident from this table that student enrolment is shifting from the separate school system to the public school system. This is consistent with our finding in Chapter 3 that the religious background of the population has shifted somewhat over the past decade from Roman Catholic to Protestant.

Government services in Fort McMurray have increased quickly over the past decade, as exhibited in Table 109. As noted by Peter C. Nichols and Associates Ltd. (1979), the growth in

public administration reflects both the rapid growth of the town and the demands for a higher level and broader range of services. In 1964, for example, only Alberta Government Telephones, the Department of Lands and Forests, and the Department of Industry and Development represented the provincial government in the area. By 1979, 16 provincial departments - including those representing environment, justice, health, social services, recreation, and housing - were located in Fort McMurray. In fact, most provincial and federal government departments serving the AOSERP Study Area are located in Fort McMurray, although government service has also grown in Fort Chipewyan.

The number of telephones in Fort McMurray has increased from 209 in 1961 to 8,875 by 1978 (Table 110). This is equivalent to an increase from 176.2 telephones per 1,000 population in 1961 to 361.1 telephones per 1,000 population in 1978. While the increased use in telephones has occurred for both residential and business purposes, the number of telephones for residential use has increased more quickly over this period.

Although the number of telephones in Fort Chipewyan has more than doubled between 1964 and 1978, the number of telephones per 1,000 population did not increase until after 1971 (Table 111). On a per capita basis, there are fewer than one-third as many telephones in Fort Chipewyan as in Fort McMurray.

Table 112, presents data on the major recreational and cultural facilities available in Fort McMurray between 1971 and 1979. As may be seen from this table, there has been a rapid expansion in recreational facilities between 1976 and 1979. In particular, facilities for curling, tennis, baseball, racquet ball and hand ball, and soccer have developed quickly during the past 3 years. Not surprisingly, most of these are the favourite recreational activities of the Fort McMurray population (Professional Environmental Recreation Consultants Ltd., 1976; M.T.B. Consultants Limited, 1980).

In spite of the rapid development of leisure facilities in Fort McMurray, it is evident that the growth of the community has

easily outpaced the expansion of the leisure infrastructure. For example, when an additional indoor arena was constructed, it almost immediately began operation at near capacity. In addition, while 43.4% of Fort McMurray residents indicated that they participate in swimming, only one indoor swimming pool exists for the entire community. It is evident that the leisure delivery system did not respond well to this particular recreational need, particularly since the existing pool was constructed before 1971. Development of further swimming pool facilities is currently one of Fort McMurray's higher recreational priorities (M.T.B. Consultants Limited, 1980). Finally, the relative lack of recreational facilities is manifested by the various comments reprinted in Van Dyke and Loberg (1978), such as "Recreation is lacking. I can't go to the bar every night and drink for six hours either." (page 89). Table 112 also suggests that cultural facilities are seriously underdeveloped in Fort McMurray.

As may be seen in Table 113, liquor sales have traditionally been higher in Fort McMurray per person than in Alberta. Note, in particular, that per capita liquor sales in Fort McMurray were over three times the per capita liquor sales for Alberta during the GCOS construction period. Much of this increase in sales relative to Alberta sales may be due, however, to the increase in the 'shadow' (i.e. temporary) population living in the area during this construction phase. Liquor sales also increased in Fort McMurray relative to Alberta during the Syncrude construction period. This increase is not as large as during the GCOS construction phase, possibly because the 'shadow' population has not been as large during the 1970's. (Compared with GCOS workers in the 1960's, a larger percentage of Syncrude workers during the 1970's have made Fort McMurray their permanent residence. Notably, a large permanent construction work force now lives in the community.)

For most years since 1961, per capita beer sales in Fort McMurray have been below that of Alberta. As with liquor sales, however, beer sales increased quickly during the construction and early operational phases of the GCOS plant, rising from 76.6% of Alberta sales in 1964 to 266.9% of Alberta sales by 1967 (Table 114).

As mentioned in our discussion of liquor sales, much of this increase in beer sales during the mid-1960's may be due to the existence of a large 'shadow' population at this time. Beer sales per capita have increased somewhat during the construction phase of Syncrude, although these sales have remained below that of Alberta for all years except 1978.

### 8.3 REPORTED CRIMES AND OFFENCES

Before analysing the statistics on crime offences in Fort McMurray between 1961 and the present, it is necessary to discuss three methodological issues which affect these data. First, it should be recognized that crime statistics only represent those activities known to the protective services in a given community; they do not represent the actual number of crimes committed. Consequently, these statistics may vary from one jurisdiction to another based upon such factors as differences in the degree of enforcement, tolerance levels of the protective service, size of the force relative to the population, and even the fundamental policies and practices of the police force and the government responsible.

Since various crime rates are commonly used, crime statistics may vary from one community to another or from one year to another based upon the degree to which the permanent population accurately represents the actual (i.e. permanent and temporary) population in the community. This factor is particularly important in Fort McMurray where a large 'shadow' population has been present, especially during the GCOS construction period. Where a 'shadow' population is present, the resultant crime rate becomes inflated since the number of crimes is attributed to a smaller population base than actually exists.

Finally, crime statistics reported by Statistics Canada may be distorted because each police force is requested to report only the most serious offence where an offender has committed multiple offences. This is a contentious issue with many police forces. It tends to greatly underestimate the number of less



serious offences in the community and may be considered to be inappropriate since the police must file each offence separately for its own records. This procedure of reporting to Statistics Canada only the most serious offence may also distort the crime statistics because different communities may experience different combinations of offences for multiple offenders. This methodological issue is also important because of the large number of multiple offences that occur.

With respect to total crime offences, the Fort McMurray crime rate has increased from a figure slightly above that of Alberta during the early 1960's to an average of twice the Alberta rate in more recent years (Table 115). During the peak of the GCOS construction, in fact, the crime rate was over three times the Alberta rate. As mentioned above, however, some of this increase may have been due to the presence in the area of the large temporary construction work force.

Following the completion of the GCOS plant, the crime rate for Fort McMurray stabilised while the Alberta rate continued to rise. However, the Fort McMurray rate is still over 50% higher than the Alberta rate.

Criminal code offences in Fort McMurray represented about one-third of all crime offences during the early 1960's; since the introduction of oil sands development into the area, however, these crimes have increased to represent nearly 60% of all crimes in the area (Table 116). Moreover, the criminal code offence rate has increased from a level which was comparable to the Alberta rate during the early 1960's to a level over 50% higher than the Alberta rate during the late 1970's.

As Table 117 illustrates, differences exist in the magnitude and direction of Fort McMurray crime rates for various types of offences under the criminal code category. For example, crimes of violence have continued to decrease during the 1970's from a level which was nearly three times the Alberta rate in 1972 to a rate which was less than twice the Alberta rate in 1978. The property crime rate for Fort McMurray increased between 1972 and 1976 but has since decreased to a level only slightly above the

Alberta rate. Similarly, other criminal code offences have decreased since 1976.

Table 118 presents data on the number of persons charged under the criminal code by age group and sex for selected years. As may be seen from this table, adult males represented the majority of criminal code offenders between 1962 and 1971 (the last year for which the statistics are available).

Turning to Table 119, we see that there has been a great deal of fluctuation in Fort McMurray in the crime rate for federal statute offences. Using the statistical technique of averaging the crime rate for overlapping years, we see that federal statute offences decreased quickly between 1962 and 1969 from a level which was just over twice the Alberta rate to a level which was just over one-third of the Alberta rate. During the 1970's, however, the crime rate for federal statute offences increased very quickly along with the Alberta rate. For instance, the average federal statute crime rate in Fort McMurray for 1968-1971 was 149.5; by 1976-1978, it has risen to 1,044.0. While the decrease in the federal statute crime rate during the 1960's is not easily explained, the increase in recent years is most likely due to the increased use of illegal drugs in Fort McMurray and Alberta. For example, approximately one-half of the federal statute offences in Alberta in 1978 were drug related.

Based upon the statistical material presented in Table 120, several interesting points are evident with respect to provincial statute crime rates for Fort McMurray. First, the crime rate for this type of offence has traditionally been higher in Fort McMurray than in Alberta, although the Alberta rate is approaching that of Fort McMurray. It is probable that these statistics reflect the observations made in the previous section with respect to alcohol consumption and the popularity of tavern going as a recreational activity in the community because nearly 85% of provincial statute offences are violations of the Liquor Act (based upon statistics for the province of Alberta).

Second, Table 120 illustrates that provincial statute

crime offences were very high during the GCOS construction period but not during the Syncrude construction period. This may be explained by the fact that a larger percentage of the work force during the Syncrude construction phase had a permanent residency status in Fort McMurray, compared with the large temporary population during the GCOS construction period. Finally, this table clearly illustrates that the crime rate for provincial statute offences (and, therefore, Liquor Act violations) has decreased between 1971 and 1978.

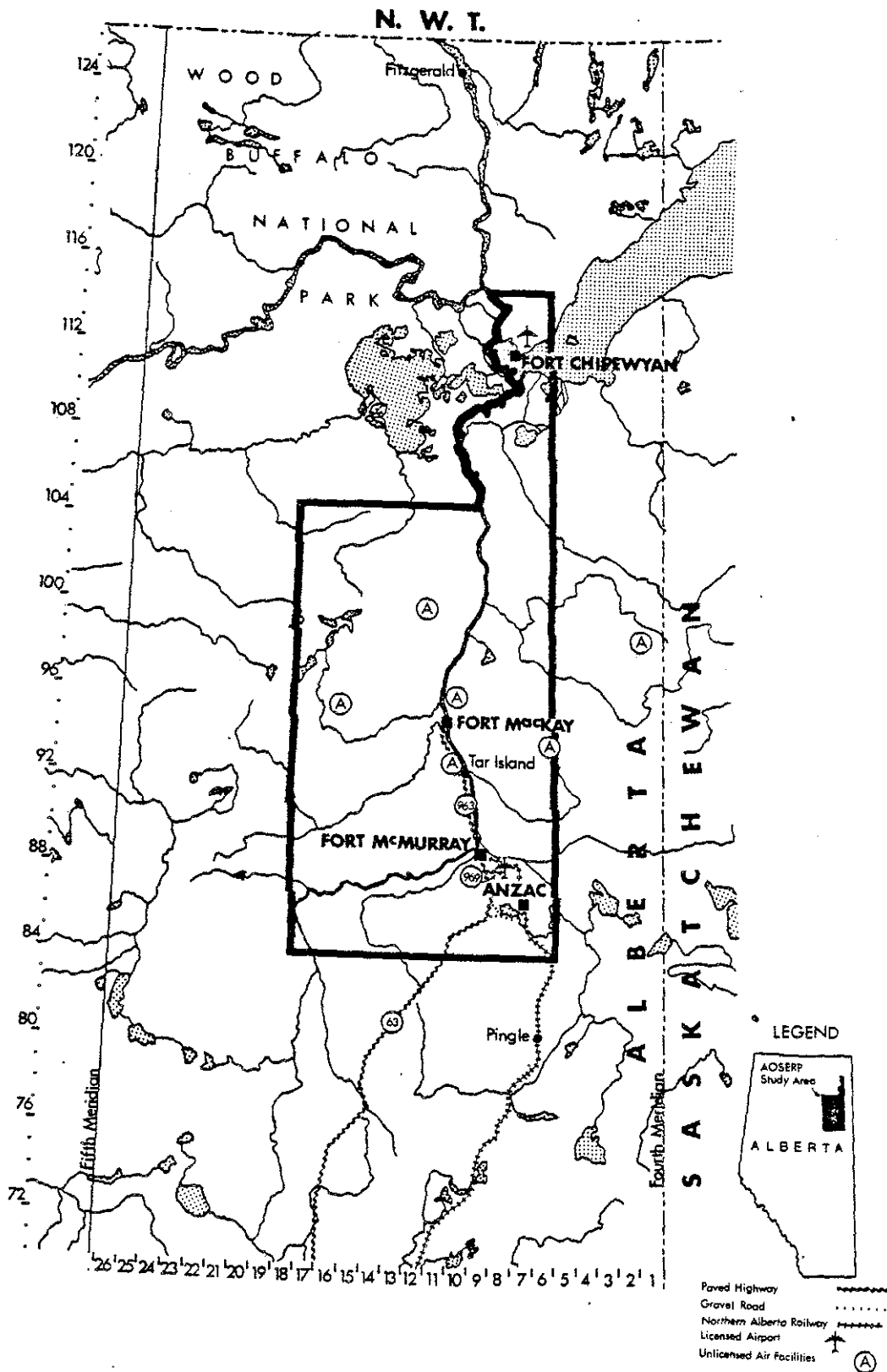
With respect to municipal by-law offences in Fort McMurray, the crime rate has varied considerably over the years between 1962 and 1978. While this is the only crime rate in Fort McMurray which has traditionally been below the Alberta rate, there has been a relative increase in the number of municipal by-law offences in Fort McMurray during the 1970's.

#### 8.4 TRANSPORTATION INFRASTRUCTURE AND ACTIVITY

Figure 6 illustrates the existing transportation infrastructure in the AOSERP Study Area in 1979. As may be seen from this map, there is only one all weather access road, Highway 63, joining the AOSERP Study Area to communities in the more southern part of the province. As the only paved two-lane highway extending to Edmonton (via Highway 28), it is not surprising that Highway 63 serves as a major link for the study area. Built in 1966, this road is presently in heavy use as a means of bringing inbound cargo by truck and for private and public passenger travel to the more developed areas in the south. Driver behaviour on Highway 63, particularly on weekends, has been an issue of some notoriety as large numbers of people (especially temporary residents working at the oil sands plants) head for Edmonton on Friday and return to Fort McMurray on Sunday (Humphreys, 1979).

On the west side of the Athabasca River, a gravelled extension of Highway 63, Highway 963, extends north to Fort Mackay and is regularly used by Fort McMurray commuters to the GCOS and

# Transportation Infrastructure



Syncrude plants.

Highway 969 is a paved secondary highway linking the Fort McMurray Airport and the Northern Alberta Railway at Lynton with Highway 63. Also south of Fort McMurray is an unpaved road (Park Road 119) which connects Anzac and Gregoire Lake Provincial Park with Highway 63.

There are no all weather roads north of Fort Mackay. However, it is anticipated that a four lane paved highway will be built north from Fort McMurray to a New Town if such a town is built (Alsands Project Group, 1979). While there are no all weather highways connecting Fort Chipewyan to other communities, winter road access is available south to Fort Mackay and east to Uranium City.

The only rail company serving the AOSERP Study Area is the Northern Alberta Railway (N.A.R.) which is owned jointly by the C.N.R. and C.P.R. The one track in the area was built in the early 1920's and passes through Pingle (south of the Study Area) and Anzac, and ends at Waterways near Fort McMurray. Although the N.A.R. provides a limited passenger service, it primarily transports ingoing freight such as construction material and petroleum products and outgoing sulphur shipments from the GCOS plant.

Fort McMurray is the southern terminus for the Athabasca River transport system. Although water transport has historically been an important form of transportation serving northeastern Alberta, northwestern Saskatchewan, and the southern part of the Northwest Territories, the volume of freight moved by barge service on the Athabasca River and Lake Athabasca decreased in recent years. The barge service is operated by the Northern Transportation Company Limited and operates from about May to September.

Figure 6 also illustrates that two licensed airports and several unlicensed air facilities exist within the AOSERP Study Area. The airports at Fort McMurray and Fort Chipewyan are the only airports within the AOSERP Study Area which are able to permit service by commercial jets. Although basic air facilities

have been available at Fort McMurray airport since World War II, the airport terminal building was not erected until the early 1960's. The facilities at this airport were upgraded in 1967 and, again, in 1975 to accommodate the increase in traffic stimulated by oil sands development in the area. The Fort McMurray runway is presently paved and extends 1,829 meters.

Because of the lack of road and rail service in connecting Fort Chipewyan to other communities, this settlement relies heavily on air service to move passengers in and out. The Fort Chipewyan airport was built in 1967 and scheduled service began in 1973. The runway was paved in the summer of 1977 and presently extends over 1,500 meters. Pacific Western Airlines, a Calgary based operation, is responsible for the regularly scheduled passenger and freight service for both the Fort McMurray and Fort Chipewyan airports.

Several unlicensed landing strips exist, serving the less accessible locations within the region. All of these unlicensed air facilities are turf landing strips and accommodate only V.F.R. (visual flight rules) air traffic.

Turning to Table 122, which presents data on the municipal land area and public thoroughfares in Fort McMurray, we see that the number of miles of public thoroughfares increased rapidly during both the GCOS and Syncrude construction periods. During the GCOS construction period, the total extent of public thoroughfares in Fort McMurray increased from 16 miles in 1964 to 31 miles by 1967. Road facilities expanded more quickly during the Syncrude construction period, from 32 miles in 1972 to 79 miles in 1977.

Until 1971, Fort McMurray was contained within approximately 3 square miles. Following the annexation of part of I.D. 18 in 1973, however, the community's total land area expanded to 16 square miles.

Motor vehicle registrations for both passenger and commercial vehicles have increased dramatically over the past decade, as shown in Table 123. Although these registrations are

not based exclusively upon the population of Fort McMurray, there is little doubt that the rapid increase in the number of people in this community has caused most of the increase in the number of registrations.

Turning to Table 124, we see that the traffic accident rate for the jurisdiction in and around Fort McMurray increased ten fold in 1967 from the previous year. This, of course, is due to the fact that Highway 63 was completed in 1966. Since that time, the traffic accident rate remained relatively high throughout the construction and early operational phases of GCOS. In 1970, however, the traffic accident rate decreased over 40% and remained at this low level until the beginning of the Syncrude construction period in 1974. Note, in particular, the only traffic fatalities experienced in Fort McMurray occurred during the Syncrude construction period. There were ten traffic fatalities between 1974 and 1977.

The statistics on traffic fatalities and injuries in the jurisdiction around Fort McMurray shows that the number of persons killed or injured per capita was higher during the GCOS and Syncrude construction periods than at any other times (Table 125). For example, the highest traffic fatality and injury rate occurred during the peak construction period of Syncrude (in 1975) when there were five fatalities and one hundred injuries resulting in a rate of 800.8 per 100,000 population for that year. Since 1975, the number of traffic fatalities and injuries has decreased relative to the size of the Fort McMurray population.

As may be seen from Table 126 and Table 127, there has been a rapid increase in the use of Fort McMurray airport facilities since 1968 (the first year for which these statistics are available). Moreover, the number of inbound and outbound passengers to and from Fort McMurray has varied with the degree of oil sands activity. The number of inbound and outbound passengers decreased between 1968 and 1970, reflecting the completion of GCOS construction and the beginning of its early operational phases. The beginning of the Syncrude construction phase is also evident from these tables by the

rapid increase in the number of passengers to and from the area since 1973. In fact, between 1972 and 1977, the number of inbound and outbound passengers increased ten fold. The downturn in the number of passengers between 1977 and 1978 reflects the completion of the construction of Syncrude during that year. These tables also indicate that the majority of air passengers at Fort McMurray airport are either going to (as a final destination) or have come from (as a place of origin) other communities within Alberta. However, these statistics do not account for stopovers which commonly occur.

Table 128 and Table 129 present information on the most common centers that inbound passengers to Fort McMurray arrive from and that outbound passengers indicate as their final destination. Between 1968 and 1978, Edmonton has been the most travelled center to and from Fort McMurray, although the percentage of passengers going to or coming from this city has decreased in recent years. Conversely, the number of passengers going to and coming from Calgary has increased markedly. While the percentage of air travellers at Fort McMurray airport going to or coming from Fort Chipewyan was quite high between 1970 and 1972, this group now represents a very small proportion of all Fort McMurray air travellers - only 2.6% in 1978. Note, however, that the actual number of people flying to Fort Chipewyan from Fort McMurray or vice versa has neither increased nor decreased significantly since 1970. This may reflect the lack of growth in Fort Chipewyan.

The number of inbound and outbound air passengers to and from Fort Chipewyan between 1968 and 1978 has increased only marginally (Table 130 and Table 131). In fact, since 1972, there has been virtually no increase in the number of inbound and outbound passengers reported by this airport.

Between 1968 and 1978, there has been a relative decline in the percentage of passengers from Fort Chipewyan to Edmonton and vice versa (Table 130 and Table 131). Perhaps because of the relative decline in the economic activity in Uranium City, there has also been a decline in the percentage of air passengers



to Fort Chipewyan from this community and vice versa. Conversely, the percentage of Fort Chipewyan passengers going to or coming from Fort McMurray has increased between 1968 and 1978.

Table 99. Fort McMurray: distribution of sales by retail business group for selected years.

Retail Business Group	1966	1971	1972	1973	1974	1975	1976 <sup>(2)</sup>
	%	%	%	%	%	%	%
Food	8.4	25.9	N/A	21.2	22.6	21.9	24.0
Hardware and Home Furnishings	7.6		6.6	7.6	14.1	12.0	7.9
Apparel and Accessories	9.5	5.1	N/A	4.8	13.6	3.0	
General Merchandise	25.4	26.8	26.6	25.6	17.5	17.3	10.9
Automotive	17.7	18.4	20.3	14.9	16.7	20.5	38.3
Other Retail Stores <sup>(1)</sup>	31.5	23.8	21.6	25.9	25.4	25.2	19.0
TOTAL RETAIL SALES %	100%	100%	100%	100%	100%	100%	100%
(\$000's) <sup>(3)</sup>	(\$3,806.8)	(\$8,221.0)	(\$11,038.0)	(\$12,259.0)	(\$21,851.0)	(\$33,401.0)	(\$74,526.0)

Notes. (1) Includes Business Equipment and Supplies for 1966, 1971, 1972. This category has been removed for 1973-1976 because of its wholesale business characteristics.

(2) May not be completely comparable with previous years because of changes in surveying.

(3) All values in current dollars.

Sources: a) Statistics Canada. 1966 Census of Canada. Supply and Services Canada: Ottawa. Cat. #97-603.

b) Alberta Treasury Bureau of Statistics. Retail and Service Trade Statistics (various years).

Table 100. Fort McMurray: retail business groups by number of outlets for selected years.

Retail Business Group	1966		1976	
	N	%	N	%
Food	4	13.3	9	9.9
General Merchandise	3	10.0	5	5.5
Automotive	6	20.0	18	19.8
Apparel and Accessories	4	13.3	12	13.2
Hardware and Home Furnishings	4	13.3	17	18.7
Other Retail Stores	9	30.0	30	33.0
TOTAL RETAIL OUTLETS	30	100%	91	100%

Sources: a) Statistics Canada. 1966 Census of Canada. Supply and Services Canada: Ottawa. Cat. #97-603

b) Alberta Treasury. Bureau of Statistics. Retail and Service Trade Statistics, 1976. February, 1978.

Table 101. Fort McMurray: business service statistics for selected years.

	1966	1971	1976
Number of Locations	22	26	36
Net Sales and Receipts (\$000's)	2,513.6	1,943.0	5,355.0
Number of Working Proprietors	8	16	-N/A-
Number of Paid Employees	169	130	199
Total Payroll for the Year (\$000's)	693.5	516.0	1,070.0

Sources: (a) Statistics Canada. 1966 Census of Canada. Cat. #97-645, page 4-26.

(b) Statistics Canada. 1971 Census of Canada. Cat. #97-743, page 31.

(c) Alberta Treasury. Bureau of Statistics. Retail and Service Trade Statistics, 1976. February 1978.

Table 102. Fort McMurray and Alberta: retail and business service groups by value of sales, 1976.

Business Group	Fort McMurray		Alberta	
	\$000's	%	\$000's	%
<u>Retail Trade</u>				
Food	17,850	24.0	967,985	13.9
General Merchandise	8,138	10.9	1,548,888	22.3
Automotive	28,536	38.3	2,388,340	34.4
Apparel and Accessories	5,864	7.9	335,747	4.8
Hardware & Home Furnishings			521,891	7.5
Other Retail Stores	14,140	19.0	1,185,064	17.1
TOTAL RETAIL SALES	74,526	100%	6,947,915	100%
<u>Service Trade</u>				
Accommodation & Food Services	4,420	82.5	725,607	77.4
Personal Services	935	17.5	101,944	10.9
Miscellaneous Services			36,758	3.9
Amusement & Recreational Services	-	-	73,275	7.8
TOTAL SERVICE SALES	5,355	100%	937,584	100%

Source: Alberta Treasury. Bureau of Statistics. Retail and Service Trade Statistics, 1976. February, 1978.

Table 103. Fort McMurray: manufacturing statistics for selected years.

	1972		1973		1975		1976	
Number of Establishments	3		4		5		5	
Number of Employees	N	%	N	%	N	%	N	%
Male	16	64.0	- N/A -		61	66.3	46	61.3
Female	9	36.0	- N/A -		31	33.7	29	38.7
Total	25	100%	73	100%	92	100%	75	100%
Value Added (\$000's)	354		1221		1764		1571	

- Sources: a) Alberta Treasury. Bureau of Statistics. Principal Manufacturing Statistics (various years).
- b) Statistics Canada. The Manufacturing Industries of Canada. Supply and Services Canada: Ottawa. Cat. #31-209. (various years)

Table 104. Fort McMurray: police personnel by type and sex and police automobiles for selected years.

Year	Police Personnel							Police Automobiles
	Police (1)		Civilian		Total			
	M	F	M	F	M	F	T	
1960	1	-	-	-	1	-	1	-
1961 (2)	-N/A-		-N/A-		-N/A-			-N/A-
1962	2	-	-	-	2	-	2	1
1963	1	-	-	-	1	-	1	1
1964	2	-	-	-	2	-	2	1
1965 (3)	-N/A-		-N/A-		-N/A-			-N/A-
1966	5	-	-	-	5	-	5	2
1967	5	-	-	-	5	-	5	2
1968	5	-	-	-	5	-	5	2
1969	6	-	-	-	6	-	6	2
1970	6	-	-	2	6	2	8	2
1971	8	-	3	2	11	2	13	2
1972	8	-	3	2	11	2	12	2
1973	10	-	3	3	13	3	16	3
1974	13	-	3	4	16	4	20	3
1975	27	2	1	8	28	10	38	4
1976	17	1	2	11	19	12	31	5
1977	21	2	3	14	24	16	40	8

NOTES: (1) Includes police cadets

(2) 1961 issue did not include data on Ft. McMurray (called McMurray until 1965)

(3) 1965 issue did not include data on police personnel or transport.

Source: Statistics Canada. Police Administration Statistics.  
Supply and Services Canada: Ottawa. Cat. #85-204.  
Various years.

Table 105. Fort McMurray: hospital service statistics for selected years.

Year	Hospital Beds		Admissions		Operations		Number of Mothers Delivered
	Number	Beds per 1,000 Population	Adults & Children	Newborns	In-Patient	Out-Patient	
1961	25	22.5	756	58	94	-	62
1962	25	21.0	702	59	57	-	59
1963	23	19.4	695	40	12	38	40
1964	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1965	23	12.7	1200	92	85	2	93
1966	64	25.4	1588	115	6	-	116
1967	64	18.9	2240	186	336	53	186
1968	64	12.8	2457	190	315	-	190
1969	64	10.7	2236	210	208	-	211
1970	54	8.8	2028	217	330	-	217
1971	54	8.1	2383	242	385	12	243
1972	54	7.6	2563	286	447	49	284
1973	54	6.6	2780	246	424	11	244
1974	54	5.7	2961	259	475	25	254
1975	54	4.1	3424	341	482	47	342
1976	54	3.1	3764	437	517	362	437
1977	54	2.7	4666	541	499	461	541

Source: Syncrude Canada Ltd. Environmental Impact Assessment:  
Volume C - Socio-Economic Aspects. November, 1978.



Table 106. Fort McMurray Regional Office: number of public assistance caseloads for selected months and years.

	January	February	March	April	May	June	July	August	September	October	November	December
1965	N/A <sup>(1)</sup>	N/A <sup>(1)</sup>	31	27	23	19	19	12	10	13	11	13
1966	23	43	46	26	25	22	24	25	25	29	39	43
1967	47	51	55	43	42	42	41	36	29	50	57	59
1968	64	61	70	73	50	34	48	65	67	67	76	46
1969 <sup>(2)</sup>	55	63	50	41	32	20	27	N/A	N/A	N/A	N/A	N/A
1970	N/A	N/A	120	131	125	118	114	114	109	110	113	111
1971	118	120	116	105	113	109	109	103	110	114	115	115
1972	123	148	156	157	160	133	147	140	172	178	196	209
1973	202	203	192	209	204	202	206	191	199	196	196	195
1974	212	223	137	139	154	136	167	152	169	180	164	169
1975	182	206	199	206	200	175	171	178	181	193	213	234
1976	204	212	207	207	181	185	174	188	194	187	191	191
1977	211	234	229	209	224	220	198	195	189	215	223	219 <sup>(3)</sup>

Notes: (1) Fort McMurray office not opened until March, 1965.

(2) No data available for August through December because the system was being changed from a manual operation to a computer system.

(3) Caseloads increased dramatically in 1978 with January 255, February 282 and March 276 figures reported.

Source: (a) Co-west Associates. Social Planning Implications for Health and Social Services: Northeast Alberta Region Northeast Alberta Region Commission. July, 1978, page 91.

Table 107. Fort McMurray: public library statistics for selected years.

Year	<u>Circulation</u>		<u>Volumes</u>		<u>Memberships</u>		<u>Staff</u>
	Number	Per Resident	Number	Per Resident	Number	% of Population	N
1966	8299	3.2	3480	1.3	263	10.1	1
1967	17416	5.5	4841	1.5	641	20.0	1
1968	28124	7.3	6768	1.8	754	19.6	2
1969	26168	7.7	9107	2.0	858	18.4	2
1970	33113	5.8	10686	1.9	785	13.9	2
1971	30747	4.5	12772	1.9	915	13.4	3
1972	38055	4.7	14436	1.8	1186	14.7	3
1973	55413	5.8	16614	1.8	1573	16.6	3
1974	57363	5.1	18354	1.6	2039	18.3	3
1975	64375	4.9	19859	1.5	2640	20.1	4
1976	67543	4.4	22120	1.4	3078	20.0	4
1977	76820	3.8	24868	1.2	3836	18.9	5
<u>Average</u>							
1966-1969	22501	5.9	6049	1.7	629	17.0	2
1968-1971	32038	6.3	9833	1.9	838	16.3	2
1970-1973	39332	5.2	13627	1.9	1115	14.7	3
1972-1975	53802	5.1	17316	1.7	1860	17.4	3
1974-1977	66525	4.6	21300	1.4	2898	19.3	4

Source: Syncrude Canada Ltd. Environmental Impact Assessment: Volume C - Socio-Economic Aspects. November, 1978.

Table 108. Fort McMurray: student enrollments by grade levels and school system for selected years.

Grade Level	1972-73		1973-74		1974-75		1975-76		1976-77		1977-78	
	N	%	N	%	N	%	N	%	N	%	N	%
<u>PUBLIC SCHOOL SYSTEM</u>												
Grades 1 - 6	888	37.2	966	37.6	- N/A -		1378	36.8	1673	38.0	2152	39.4
Grades 7 - 9	329	13.8	331	12.9	- N/A -		593	15.8	690	15.7	901	16.5
Grades 10-12	319	13.3	337	13.1	- N/A -		542	14.5	635	14.4	781	14.3
<u>Subtotal: Public School System</u>	1536	64.3	1634	63.7	- N/A -		2513	67.1	2998	68.1	3834	70.2
<u>SEPARATE SCHOOL SYSTEM</u>												
Grades 1 - 6	629	26.3	657	25.6	- N/A -		863	23.1	975	22.1	1203	22.0
Grades 7 - 9	225	9.4	275	10.7	- N/A -		363	9.7	428	9.7	423	7.7
Grades 10-12	-	-	-	-	- N/A -		5	0.1	4	0.1	2	-
<u>Subtotal: Separate School System</u>	854	35.7	932	36.3	- N/A -		1231	32.9	1403	31.9	1628	29.8
<u>TOTAL</u>	2390	100%	2566	100%	- N/A -		3744	100%	4405	100%	5462	100%

Sources: a) Alberta Education. Annual Report. (various years)

Table 109. Fort McMurray: government employees by level of government for selected years.

	1971	1972	1973	1974	1975	1976	1977	1978
	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>
Provincial	89	113	113	142	211	262	282	280 <sup>(1)</sup>
Municipal	52	NA	NA	133	185	245	306	331
Federal	NA	NA	NA	NA	NA	NA	NA	146

Notes: (1) Estimates of the number of Keyano College employees have been included to make 1978 figures compatible with earlier years.

Source: Peter C. Nichols and Associates Ltd. Overview of Local Economic Development in the Athabasca Oil Sands Region Since 1961.  
Alberta Oil Sands Environmental Research Program. March, 1979.

Table 110. Fort McMurray: number of telephones by type for selected years.

Year	Residential		Business		Total	
	Number	Rate <sup>(1)</sup>	Number	Rate <sup>(1)</sup>	Number	Rate <sup>(1)</sup>
1961	- N/A -		- N/A -		209	176.2
1962	174	125.3	52	37.4	226	162.7
1963	183	112.5	62	38.1	245	150.6
1964	236	123.8	99	51.9	335	175.8
1965	390	174.7	184	82.4	574	257.2
1966	546	208.9	215	82.2	761	291.1
1967	991	312.7	247	77.9	1238	390.7
1968	1202	312.9	271	70.5	1473	383.4
1969	1253	269.0	288	61.8	1541	330.8
1970	1356	240.1	296	52.4	1652	292.5
1971	1595	232.9	331	48.3	1926	281.3
1972	1811	224.8	420	52.1	2231	277.0
1973	2056	217.0	575	60.7	2631	277.7
1974	2585	231.9	845	75.8	3430	307.7
1975	3705	282.6	1079	82.3	4784	364.9
1976	4544	294.6	1241	80.5	5785	375.1
1977	6237	306.6	1500	73.7	7737	380.4
1978	7139	290.4	1736	70.6	8875	361.1

Notes: (1) Per 1,000 population.

Source: Peter C. Nichols and Associates Ltd. Overview of Local Economic Development in the Athabasca Oil Sands Region Since 1961. Alberta Oil Sands Environmental Research Program. March, 1979.

Table 111. Fort Chipewyan: number of telephones by type for selected years.

Year	Residential		Business		Total	
	Number	Rate <sup>(1)</sup>	Number	Rate <sup>(1)</sup>	Number	Rate <sup>(1)</sup>
1964 <sup>(2)</sup>	52	N/A	15	N/A	67	N/A
1965	50	N/A	17	N/A	67	N/A
1966	56	54.6	20	19.5	76	74.1
1967	53	N/A	24	N/A	77	N/A
1968	45	N/A	25	N/A	70	N/A
1969	48	N/A	30	N/A	78	N/A
1970	53	N/A	28	N/A	81	N/A
1971	55	48.9	29	25.8	84	74.7
1972	60	N/A	33	N/A	93	N/A
1973	65	N/A	37	N/A	102	N/A
1974	70	N/A	36	N/A	106	N/A
1975	90	N/A	39	N/A	129	N/A
1976	98	82.4	38	31.9	136	114.3
1977	106	N/A	46	N/A	152	N/A
1978	104	N/A	40	N/A	144	N/A

Notes: (1) Per 1,000 population.

(2) Fort Chipewyan received telephone exchange in 1964.

Source: Peter C. Nichols and Associates Ltd. Overview of Local Economic Development in the Athabasca Oil Sands Region Since 1961. Alberta Oil Sands Environmental Research Program. March, 1979.

Table 112. Fort McMurray: major recreational and cultural facilities by type for selected years.

Facility	1971	1976	1979
Major Indoor Arenas (including rinks)	1	1	3
Curling (# of sheets)	4	4	12
Swimming Pools, Indoor (# of pools)	1	1	1
Swimming Pools, Outdoor (# of pools)	-	-	-
Golf Courses (# of holes)	9	9	9
Golf Driving Ranges (# of locations)	-	1	1
Miniature Golf (# of locations)	-	-	1
Tennis Courts (# of courts)	3	6	12
Baseball Diamonds (# of locations)	7	8	19
Skiing, Downhill (# of locations)	-	1 (2 runs)	1
Skiing, Cross-Country (# of locations)	N/A	N/A	1
Raquetball/Handball (# of courts)	-	-	13
Squash (# of courts)	-	-	2
Soccer Fields (# of locations)	2	3	8
Cricket Pitches (# of locations)	-	-	1
Bowling (# of locations)	N/A	1	1
Gymnasiums (# of locations)	N/A	1	4 (estimated)
Go-Cart Tracks (# of locations)	-	-	1
Billiards (# of locations)	N/A	2	2
Movie Theatres (# of cinemas)	1	1	2
Library (# of locations)	1	1	1 (plus bookmobile)
Community Halls (# of locations)	1	4 (estimated)	6 (estimated)
Museums (# of locations)	N/A	1	1
Drive-In Theatre	-	-	1

Source: MTB Consultants Ltd. Study of the Leisure Delivery System in the AOSERP Study Area. Alberta Oil Sands Environmental Research Program.  
January 30, 1980.

Table 113. Fort McMurray and Alberta: liquor sales for selected years.

Year	Fort McMurray		Alberta		Ft. McMurray \$ per Person as a % of Alberta \$ per Person
	\$ (000's)	\$ per person	\$ (000's)	\$ per person	%
1961	69.3	58.43	38673	29.03	201.3
1962	61.6	44.35	40922	29.89	148.4
1963	65.5	40.26	43555	31.04	129.7
1964	68.5	35.94	45971	32.15	111.8
1965	141.7	63.49	48165	33.22	191.1
1966	316.6	121.12	54528	37.27	325.0
1967	450.7	142.22	62588	42.01	338.5
1968	435.8	113.43	69452	45.57	248.9
1969	438.4	94.12	76889	49.32	190.8
1970	423.1	74.91	85308	53.48	140.1
1971	492.6	71.94	92728	56.96	126.3
1972	634.6	78.78	107810	65.05	121.1
1973	779.1	82.23	129817	76.84	107.0
1974	1016.8	91.23	144308	83.78	108.9
1975	1668.5	127.25	174757	98.27	129.5
1976	2695.7	174.77	207608	112.95	154.7
1977	4032.4	198.25	234944	123.89	160.0
1978	4887.9	198.86	267410	136.99	145.2

Source: Alberta Liquor Control Board. Annual Report. (Various years)



Table 114. Fort McMurray and Alberta: beer sales for selected years.

Year	Fort McMurray		Alberta		Ft. McMurray \$ per Person as a % of Alberta \$ per Person
	\$ (000's)	\$ per person	\$ (000's)	\$ per person	%
1961	37.8	31.87	33609.8	25.23	126.3
1962	33.8	24.33	34877.1	25.48	95.5
1963	33.0	20.28	36672.5	26.14	77.6
1964	39.6	20.78	38814.7	27.14	76.6
1965	62.8	28.14	39229.5	27.05	104.0
1966	152.9	58.49	40538.5	27.71	211.1
1967	243.5	76.84	42898.7	28.79	266.9
1968	216.3	56.30	46753.4	30.68	183.5
1969	197.1	42.31	48899.6	31.37	134.9
1970	174.9	30.97	55180.1	34.60	89.5
1971	190.9	27.88	63662.7	39.11	71.3
1972	217.6	27.01	71142.0	42.93	62.9
1973	235.9	24.90	73698.9	43.62	57.1
1974	290.3	26.05	81246.0	47.17	55.2
1975	442.4	33.74	91688.5	51.56	65.4
1976	805.5	52.22	113062.2	61.51	84.9
1977	1162.1	57.13	123044.9	64.88	88.1
1978	1754.2	71.37	138443.2	68.91	103.6

Source: a) Alberta Liquor Control Board. Annual Report. (various years)

Table 115. Fort McMurray and Alberta: Total Crime Offences for Selected Years.

Year	FT. McMURRAY		ALBERTA
	No.	Rate <sup>(1)</sup>	Rate <sup>(1)</sup>
1962	146	10,511.2	7,595.6
1963	145	8,912.2	7,872.0
1964	142	7,450.2	8,598.5
1965	504	22,580.7	8,356.4
1966	124	4,743.7	9,483.9
1967	1,149	36,257.4	10,080.4
1968	851	22,149.9	10,704.0
1969	976	20,953.2	11,569.5
1970	1,039	18,395.9	12,471.3
1971	1,670	24,390.3	12,745.2
1972	1,790	22,222.2	11,452.4
1973	1,735	18,311.4	11,947.1
1974	2,363	21,200.4	12,731.5
1975	2,821	21,514.6	13,506.1
1976	3,457	22,413.1	14,457.7
1977	4,491	22,142.9	14,558.7
1978	4,461	18,136.1	13,784.2
<u>Average</u>			
1962-1965	234	12,363.5	8,105.5
1964-1967	480	17,758.0	9,129.5
1966-1969	775	21,025.8	10,459.0
1968-1971	1,134	21,472.3	11,872.5
1970-1973	1,559	20,829.8	12,153.8
1972-1975	2,177	20,812.0	12,409.3
1974-1977	3,283	21,817.8	13,813.3
1976-1978	4,136	20,897.3	14,267.0

NOTES: (1) Per 100,000 population. Rates for Ft. McMurray may differ from those in source because updated estimates are used here.

(2) Excluding traffic offences.

Source: Statistics Canada. Crime and Traffic Enforcement Statistics. Supply and Services Canada: Ottawa. Cat. #85-205. Various years.

Table 116. Fort McMurray and Alberta: criminal code offences for selected years.

Year	FT. McMURRAY		ALBERTA
	No.	Rate <sup>(1)</sup>	Rate <sup>(1)</sup>
1962	41	2,951.8	4,730.8
1963	55	3,380.5	5,019.1
1964	52	2,728.2	4,200.9
1965	175	7,840.5	4,798.6
1966	61	2,333.6	5,576.0
1967	579	18,270.7	6,044.8
1968	420	10,931.8	6,496.2
1969	582	12,494.6	7,006.2
1970	615	10,888.8	7,958.5
1971	787	11,494.1	8,215.8
1972	897	11,135.9	N/A
1973	870	9,182.1	7,595.9
1974	1,246	11,178.9	8,031.4
1975	1,760	13,422.8	8,621.1
1976	2,253	14,607.1	8,949.3
1977	2,758	13,586.2	8,969.6
1978	2,932	11,408.5	8,474.3
<hr/>			
<u>Average</u>			
1962-1965	81	4,225.3	4,937.4
1964-1967	217	7,793.3	5,405.1
1966-1969	411	11,007.7	6,280.8
1968-1971	601	11,452.3	7,419.2
1970-1973	792	10,675.2	6,923.4
1972-1975	1,193	11,229.3	8,082.8
1974-1977	2,004	13,198.8	8,642.9
1976-1978	2,648	13,200.6	8,797.7

NOTES: (1) Per 100,000 population. Rates for Ft. McMurray may differ from those in source because updated estimates are used here.

(2) Excluding traffic offences.

Source: Statistics Canada: Crime and Traffic Enforcement Statistics. Supply and Services Canada: Ottawa. Cat. #85-205. Various years.

Table 117. Fort McMurray and Alberta: criminal code offence rates by type for selected years.

Year	<u>Crimes of Violence</u>		<u>Property Crimes</u>		<u>Other Criminal Code Offences</u>		<u>Total Criminal Code Offences</u>	
	Ft. McMurray	Alta.	Ft. McMurray	Alta.	Ft. McMurray	Alta.	Ft. McMurray	Alta.
1972	2,247.1	N/A	5,251.4	N/A	3,637.5	N/A	11,135.9	N/A
1973	2,226.9	807.1	3,641.2	5,136.7	3,314.0	1,652.1	9,182.1	7,595.9
1974	2,153.2	789.0	5,849.6	5,247.7	3,176.0	1,994.7	11,178.9	8,031.4
1975	1,746.5	807.2	7,397.8	5,643.5	4,278.5	2,170.4	13,422.8	8,621.1
1976	1,705.1	823.0	7,870.9	4,733.4	5,031.1	2,392.9	14,607.1	8,949.3
1977	1,655.2	793.0	7,610.8	5,792.8	4,320.2	2,383.6	13,586.2	8,969.6
1978	1,303.5	778.4	6,610.8	5,486.4	3,494.1	2,209.4	11,408.5	8,474.3
<u>Average</u>								
1972-1975	2,093.3	801.0	5,535.0	5,342.3	3,601.8	1,939.0	11,229.3	8,082.8
1974-1977	1,815.0	803.0	7,182.5	5,604.5	4,201.5	2,235.3	13,198.8	8,642.9
1976-1978	1,554.5	798.0	7,364.0	5,671.7	4,281.7	2,328.7	13,200.6	8,797.7

NOTES: (1) Per 100,000 population. Rates for Ft. McMurray may differ from those in source because updated estimates are used here.

(2) Excluding traffic offences.

Source: Statistics Canada. Crime and Traffic Enforcement Statistics.  
Supply and Services Canada: Ottawa. Cat. #85-205. Various Years.

Table 118. Fort McMurray: number of persons charged under criminal code by age group and sex for selected years.

Year	ADULTS		JUVENILES		TOTAL			Rate <sup>(2)</sup>
	Male	Female	Male	Female	Male	Female	Total	
1962	38	2	6	2	44	4	48	35.3
1963	40	4	5	-	45	4	49	30.1
1964	42	1	-	-	42	1	43	22.6
1965	102	2	26	-	128	2	130	58.2
1966	32	-	1	-	33	-	33	12.6
1967	189	24	12	-	201	25	226	71.3
1968	144	8	16	1	160	9	169	44.0
1969	104	12	33	-	137	12	149	32.0
1970	172	6	11	1	183	7	190	33.6
1971	173	9	8	8	181	17	198	28.9
<u>Average</u>								
1962-1965	56	2	9	-	65	3	68	36.5
1964-1967	91	7	10	-	101	7	108	41.2
1966-1969	117	11	16	1	133	12	144	40.0
1968-1971	148	9	17	3	165	11	177	34.6

NOTES: (1) Data only available until 1971

(2) Per 1,000 population

Source: Statistics Canada. Crime Statistics. Supply and Services Canada: Ottawa.  
Cat. #85-205. Various years.

Table 119. Fort McMurray and Alberta: federal statutes offences for Selected years.

Year	FT. McMURRAY (1)		ALBERTA Rate (1)
	No.	Rate	
1962	14	1007.9	326.4
1963	16	983.4	264.0
1964	6	314.8	493.6
1965	28	1254.5	471.3
1966	-	-	419.3
1967	7	220.9	310.1
1968	8	208.2	272.8
1969	4	85.9	364.2
1970	4	70.8	400.2
1971	16	233.7	399.2
1972	14	173.8	N/A
1973	28	295.5	374.6
1974	56	502.4	767.4
1975	96	732.1	702.6
1976	131	849.3	980.6
1977	281	1384.2	1057.7
1978	231	898.8	1006.5
<hr/>			
<u>Average</u>			
1962-1965	16	890.2	388.8
1964-1967	10	447.5	423.5
1966-1969	5	128.8	341.5
1968-1971	8	149.5	359.0
1970-1973	16	193.5	391.3
1972-1975	49	426.0	584.7
1974-1977	141	867.0	854.5
1976-1978	214	1044.0	1015.0

NOTES: (1) Per 100,000 population. Rates for Ft. McMurray may differ from those in source because updated estimates are used here.  
 (2) Excluding traffic offences.

Source: Statistics Canada. Crime and Traffic Enforcement Statistics. Supply and Services Canada: Ottawa. Cat. #85-205. Various years.

Table 120. Fort McMurray and Alberta: provincial statute offences for selected years.

Year	FT. McMURRAY		ALBERTA
	No.	Rate <sup>(1)</sup>	Rate <sup>(1)</sup>
1962	83	5,975.5	2,208.1
1963	73	4,486.8	2,282.0
1964	83	4,354.7	2,570.0
1965	297	13,306.5	2,716.7
1966	61	2,333.6	3,069.7
1967	561	17,702.7	3,247.3
1968	405	10,541.4	3,499.8
1969	384	8,243.9	3,797.3
1970	419	7,418.6	3,717.7
1971	856	12,501.8	3,678.5
1972	867	10,763.5	N/A
1973	824	8,696.6	3,568.5
1974	1,056	9,474.3	3,705.6
1975	874	6,665.6	3,838.3
1976	995	6,451.0	4,278.0
1977	1,405	6,921.1	4,299.4
1978	1,474	5,735.4	4,056.9
<hr/>			
Average			
1962-1965	134	7,030.8	2,444.3
1964-1967	251	9,424.8	2,901.0
1966-1969	353	9,705.4	3,403.5
1968-1971	516	9,676.3	3,672.8
1970-1973	742	9,845.0	3,654.0
1972-1975	905	8,899.8	3,705.0
1974-1977	1,083	7,378.0	4,030.3
1976-1978	1,291	6,369.0	4,211.7

NOTES: (1) Per 100,000 population. Rates for Fr. McMurray may differ from those in source because updated estimates are used here.

(2) Excluding traffic offences.

Source: Statistics Canada. Crime and Traffic Enforcement Statistics. Supply and Services Canada: Ottawa. Cat. #85-205. Various years.

Table 121. Fort McMurray and Alberta: municipal by-law offences for selected years.

Year	FT. McMURRAY		ALBERTA
	No.	Rate (1)	Rate (1)
1962	8	576.0	330.3
1963	1	61.5	306.9
1964	1	52.5	334.0
1965	4	179.2	369.6
1966	2	76.5	418.0
1967	2	63.1	478.2
1968	18	468.5	435.2
1969	6	128.8	401.8
1970	1	17.7	394.9
1971	11	160.7	453.8
1972	12	149.0	N/A
1973	13	137.2	408.1
1974	5	44.9	318.1
1975	91	694.0	344.1
1976	78	505.7	249.8
1977	51	251.2	232.0
1978	24	93.4	246.5
<u>Average</u>			
1962-1965	4	217.3	335.0
1964-1967	2	92.8	400.0
1966-1969	7	184.3	433.3
1968-1971	9	194.0	421.5
1970-1973	11	116.0	419.0
1972-1975	30	256.3	356.7
1974-1977	56	374.0	286.0
1976-1978	38	283.0	242.7

NOTES: (1) Per 100,000 population. Rates for Ft. McMurray may differ from those in source because updated estimates are used here.

(2) Excluding traffic offences.

Source: Statistics Canada. Crime and Traffic Enforcement Statistics. Supply and Services Canada: Ottawa. Cat. #85-205. Various years.



Table 122. Fort McMurray: municipal land area and public thoroughfares for selected years.

Years	Miles of Public Thoroughfares	Land area in Square Miles	Miles of Public Thoroughfares per Square Mile of Municipal Land Area
1960	16	3	5.3
1969 <sup>(2)</sup>	-N/A-	-N/A-	-N/A-
1962	16	3	5.3
1963	16	3	5.3
1964	16	3	5.3
1965	21	3	7.0
1966	21	3	7.0
1967	31	3	10.3
1968	31	3	10.3
1969	31	3	10.3
1970	29	3	9.7
1971	29	3	9.7
1972	32	6	5.3
1973	42	16	2.6
1974	42	16	2.6
1975	48	16	3.0
1976	48	16	3.0
1977	79	16	4.9

NOTES: (1) Date for all years are estimations based upon "area policed".

(2) 1961 issue did not include data on Ft. McMurray (called McMurray until 1965).

Source: Statistics Canada. Police Administration Statistics.  
Supply and Services Canada: Ottawa. Cat.#85-204.  
Various years.

Table 123. Fort McMurray: motor vehicle registrations by type of vehicle for selected years.

Year	Passenger Automobile		Commercial Vehicle		Total Motor Vehicle Registrations	
	No.	%	No.	%	No.	%
1968	1462	71.7	578	28.3	2040	100
1969	1583	74.0	555	26.0	2138	100
1970	1685	77.5	488	22.5	2173	100
1971	1921	74.8	646	25.2	2567	100
1972	2156	73.2	789	26.8	2945	100
1973	2618	70.4	1100	29.6	3718	100
1974	3836	63.5	2206	36.5	6042	100
1975	5201	72.6	1959	27.4	7160	100
1976	7960	78.9	2124	21.1	10084	100
1977 <sup>(2)</sup>	-N/A-		-N/A-		-N/A-	
1978	10661	78.9	2851	21.1	13512	100

NOTES: (1) Also includes registration for motor vehicles in area surrounding Ft. McMurray.

(2) Data not available due to problems with computer.

Source: Statistics Canada. Road Motor Vehicle Registrations.  
Supply and Services Canada: Ottawa. Cat. #53-219.

Table 124. Fort McMurray: traffic accidents by type for selected years.

Year	Fatal Accidents	Non-Fatal Accidents With Injury	Property Damage Done Over (2) \$100/\$200	Total Accidents (3)	
	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Rate</u>
1961					
1962	-	-	-	-	-
1963	-	1	2	3	184.4
1964	-	3	-	3	157.4
1965	-	3	10	13	582.4
1966	-	-	8	8	306.0
1967	-	9	99	100	3155.6
1968	-	18	127	145	3774.1
1969	-	11	142	153	3284.7
1970	-	12	98	110	1947.6
1971	-	12	71	83	1212.2
1972	-	22	104	126	1564.3
1973	N/A	N/A	N/A	N/A	N/A
1974	1	58	368	427	3831.0
1975	5	68	627	700	5338.6
1976	3	67	542	612	3967.8
1977	1	79	880	960	4719.8
1978	-	83	966	1049	4267.7

Average

1961 - 1964					
1963 - 1966					
1965 - 1968 -		8	61	61	1954.5
1967 - 1970 -		13	117	127	3040.5
1969 - 1972 -		14	104	118	2002.2
1971 - 1974 -		31	181	212	2202.5
1973 - 1976 3		64	512	580	4379.1
1975 - 1978 2		74	754	830	4573.5

- NOTES: (1) To avoid double counting, each accident was categorized by the most serious event, beginning with fatalities.
- (2) Categorized as "over \$100" before 1972. Has been "over \$200" between 1972 and 1978.
- (3) Includes only accidents categorized in this table. For example, does not include accidents involving property damage \$100 or less (1961-1971).
- (4) Per 100,000 population.
- Source: a) Statistics Canada. Traffic Enforcement Statistics. Supply and Services Canada: Ottawa. Cat.#85-206. For years 1961-1972.
- b) Statistics Canada. Crime and Traffic Enforcement Statistics. Supply and Services Canada: Ottawa. Cat #85-205. For years 1974-1978.

Table 125. Fort McMurray: traffic fatalities and injuries for selected years.

Year	Persons Killed	Persons Injured	Total Persons Killed or Injured	
	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Rate (1)</u>
1961	-	-	-	-
1962	-	-	-	-
1963	-	1	1	61.5
1964	-	3	3	157.4
1965	-	4	4	179.2
1966	-	-	-	-
1967	-	10	10	315.6
1968	-	22	22	572.6
1969	-	16	16	343.5
1970	-	16	16	283.3
1971	-	15	15	219.1
1972	-	22	22	273.1
1973	N/A	N/A	N/A	N/A
1974	1	78	79	708.8
1975	5	100	105	800.8
1976	3	83	86	557.6
1977	1	95	96	472.0
1978	-	110	110	447.5
<hr/>				
<u>Average</u>				
1961 - 1964				
1963 - 1966				
1965 - 1968	-	9	9	266.9
1967 - 1970	-	16	16	378.8
1969 - 1972	-	17	17	279.8
1971 - 1974	-	38	38	400.3
1973 - 1976	3	87	90	689.1
1975 - 1978	2	97	99	569.5

NOTES: (1) Per 100,000 population

Sources: a) Statistics Canada. Traffic Enforcement Statistics. Supply and Services Canada: Ottawa. Cat. #85-206. For years 1961 - 1972.

b) Statistics Canada. Crime and Traffic Enforcement Statistics. Supply and Services Canada: Ottawa. Cat. #85-205. For years 1974 - 1978.

Table 126. Fort McMurray Airport: inbound passengers by area of Departure for selected years.

Area of Departure	1968		1969		1970		1971		1972	
	N	%	N	%	N	%	N	%	N	%
Within Canada										
Alberta	7814	87.6	5605	85.2	4440	84.9	5370	86.8	6415	89.3
British Columbia	95	1.1	125	1.9	115	2.2	140	2.3	170	2.4
Ontario	275	3.1	150	2.3	100	1.9	55	0.9	65	0.9
Saskatchewan	135	1.5	375	5.7	375	7.2	380	6.1	330	4.6
Manitoba	50	0.6	50	0.8	10	0.2	35	0.6	15	0.2
Quebec	55	0.6	35	0.5	10	0.2	40	0.6	30	0.4
Other Canadian Areas	65	0.7	110	1.7	80	1.5	80	1.3	50	0.7
<u>Subtotal: Canada</u>	<u>4890</u>	<u>95.2</u>	<u>6450</u>	<u>98.1</u>	<u>5130</u>	<u>98.1</u>	<u>6100</u>	<u>98.5</u>	<u>7075</u>	<u>98.5</u>
From United States										
California	110	1.2	10	0.2	60	1.1	10	0.2	30	0.4
Texas	10	0.1	-	-	-	-	-	-	10	0.1
Other U.S. Areas	295	3.3	55	0.8	30	0.6	50	0.8	65	0.9
<u>Subtotal: U.S.</u>	<u>405</u>	<u>4.5</u>	<u>65</u>	<u>1.0</u>	<u>90</u>	<u>1.7</u>	<u>60</u>	<u>1.0</u>	<u>105</u>	<u>1.5</u>
From Other Areas of <sup>(1)</sup> Departure	25	0.3	60	0.9	10	0.2	30	0.5	-	-
 TOTAL INBOUND PASSENGERS	 8920	 100%	 6575	 100%	 5230	 100%	 6190	 100%	 7180	 100%

NOTES: (1) Includes all areas of departure outside of Canada and United States.

Sources: a) Statistics Canada. Air Passenger Origin and Destination.  
Supply and Services Canada: Ottawa. Cat. #51-204. Various Years.

b) Statistics Canada. Air Passenger Origin and Destination: Canada-U.S. Report.  
Supply and Services Canada: Ottawa. Cat. #51-205. Various Years.

Table 126 cont'd. Fort McMurray Airport: inbound passengers by area of departure for selected years.

Area of Departure	1973		1974		1975		1976		1977		1978	
	N	%	N	%	N	%	N	%	N	%	N	%
Within Canada												
Alberta	12080	91.9	28840	91.1	42040	88.6	48640	86.8	58290	83.6	50500	82.0
British Columbia	335	2.5	1200	3.8	2350	5.0	2560	4.6	3420	4.9	3460	5.6
Ontario	140	1.1	380	1.2	790	1.7	1510	2.7	2660	3.8	2220	3.6
Saskatchewan	240	1.8	450	1.4	510	1.1	570	1.0	600	0.9	690	1.1
Manitoba	90	0.7	260	0.8	340	0.7	460	0.8	520	0.7	490	0.8
Quebec	10	0.1	90	0.3	240	0.5	460	0.8	980	1.4	550	0.9
Other Canadian Areas	75	0.6	100	0.3	250	0.5	570	1.0	1470	2.1	1840	3.0
Subtotal: Canada	12970	98.7	31320	99.0	46520	98.0	54770	97.8	67940	97.4	59750	97.0
From United States												
California	60	0.5	130	0.4	540	1.1	450	0.8	550	0.8	380	0.6
Texas	15	0.1	20	0.1	40	0.1	70	0.1	260	0.4	240	0.4
Other U.S. Areas	95	0.7	140	0.4	290	0.6	510	0.9	810	1.2	970	1.6
Subtotal: U.S.	170	1.3	290	0.9	870	1.8	1030	1.8	1620	2.3	1590	2.6
From Other Areas of Departure <sup>(1)</sup>	-	-	40	0.1	80	0.2	210	0.4	200	0.3	220	0.4
TOTAL INBOUND PASSENGERS	13140	100%	31650	100%	47470	100%	56010	100%	69760	100%	61560	100%

NOTES: (1) Includes all areas of departure outside of Canada and United States.

Sources: a) Statistics Canada. Air Passenger Origin and Destination. Supply and Services Canada: Ottawa. Cat. #51-204. Various years.

b) Statistics Canada. Air Passenger Origin and Destination. Supply and Services Canada: Ottawa. Cat. #51-205. Various years.

Table 127. Fort McMurray Airport: outbound passengers by area of final destination for selected years.

Final Destination	1968		1969		1970		1971		1972	
	N	%	N	%	N	%	N	%	N	%
Within Canada										
Alberta	8480	86.3	5755	84.4	4820	86.1	5520	87.6	6385	90.6
British Columbia	100	1.0	95	1.4	130	2.3	120	1.9	160	2.3
Ontario	270	2.7	180	2.6	135	2.4	75	1.2	45	0.6
Saskatchewan	385	3.9	485	7.1	355	6.3	310	4.9	235	3.3
Manitoba	40	0.4	35	0.5	10	0.2	50	0.8	30	0.4
Quebec	70	0.7	35	0.5	15	0.3	45	0.7	20	0.3
Other Canadian Areas	45	0.5	80	1.2	45	0.8	75	1.2	35	0.8
<u>Subtotal: Canada</u>	<u>9385</u>	<u>95.5</u>	<u>6665</u>	<u>97.8</u>	<u>5510</u>	<u>98.5</u>	<u>6195</u>	<u>98.3</u>	<u>6930</u>	<u>98.4</u>
To United States										
California	115	1.2	5	0.1	10	0.2	25	0.4	30	0.4
Texas	-	-	10	0.1	5	0.1	-	-	-	-
Other U.S. Areas	290	3.0	95	1.4	60	1.1	45	0.7	85	1.2
<u>Subtotal: U.S.</u>	<u>405</u>	<u>4.1</u>	<u>110</u>	<u>1.6</u>	<u>75</u>	<u>1.3</u>	<u>70</u>	<u>1.1</u>	<u>115</u>	<u>1.6</u>
To Other Destinations <sup>(1)</sup>	35	0.4	40	0.6	10	0.2	35	0.6	-	-
<b>TOTAL OUTBOUND PASSENGERS</b>	<b>9825</b>	<b>100%</b>	<b>6815</b>	<b>100%</b>	<b>5595</b>	<b>100%</b>	<b>6300</b>	<b>100%</b>	<b>7045</b>	<b>100%</b>

NOTES: (1) Includes all destinations outside of Canada and the United States.

Sources: a) Statistics Canada. Air Passenger Origin and Destination. Supply and Services Canada: Ottawa. Cat. #51-204. Various years.

b) Statistics Canada. Air Passenger Origin and Destination: Canada-U.S. Report. Supply and Services Canada: Ottawa. Cat. #51-205. Various years.

Table 127 cont'd. Fort McMurray Airport: outbound passengers by area of final destination for selected years.

Final Destination	1973		1974		1975		1976		1977		1978	
	N	%	N	%	N	%	N	%	N	%	N	%
Within Canada												
Alberta	13270	90.9	29990	91.1	40870	89.3	49150	86.3	55380	81.5	47840	81.1
British Columbia	305	2.1	1080	3.3	1630	3.6	2730	4.8	3750	5.3	3660	6.2
Ontario	150	1.0	390	1.2	800	1.7	1520	2.7	2610	3.8	2310	3.9
Saskatchewan	360	2.5	570	1.7	550	1.2	590	1.0	830	1.2	700	1.2
Manitoba	145	1.0	310	0.9	370	0.8	530	0.9	520	0.8	550	0.9
Quebec	40	0.3	70	0.2	260	0.6	630	1.1	1470	2.2	650	1.1
Other Canadian Areas	120	0.8	80	0.2	210	0.5	350	0.6	1510	2.2	1150	1.9
<u>Subtotal: Canada</u>	<u>41390</u>	<u>98.6</u>	<u>32490</u>	<u>98.7</u>	<u>44690</u>	<u>97.7</u>	<u>55500</u>	<u>97.5</u>	<u>65890</u>	<u>97.0</u>	<u>56860</u>	<u>96.4</u>
To United States												
California	70	0.5	100	0.3	540	1.2	470	0.8	560	0.8	400	0.7
Texas	5	-	60	0.2	30	0.1	90	0.2	250	0.4	370	0.6
Other U.S. Areas	135	0.9	220	0.7	430	0.9	630	1.1	930	1.4	1030	1.7
<u>Subtotal: U.S.</u>	<u>210</u>	<u>1.4</u>	<u>380</u>	<u>1.2</u>	<u>1000</u>	<u>2.2</u>	<u>1190</u>	<u>2.1</u>	<u>1740</u>	<u>2.6</u>	<u>1800</u>	<u>3.1</u>
To Other Destinations <sup>(1)</sup>	-	-	40	0.1	70	0.2	220	0.4	310	0.5	350	0.6
<b>TOTAL OUTBOUND PASSENGERS</b>	<b>14600</b>	<b>100%</b>	<b>32910</b>	<b>100%</b>	<b>45760</b>	<b>100%</b>	<b>56910</b>	<b>100%</b>	<b>67940</b>	<b>100%</b>	<b>59010</b>	<b>100%</b>

NOTES: (1) Includes all destinations outside of Canada and United States.

Sources: a) Statistics Canada. Air Passenger Origin and Destination. Supply and Services Canada: Ottawa. Cat. #51-204. Various years.

b) Statistics Canada. Air Passenger Origin and Destination: Canada-U.S. Report. Supply and Services Canada: Ottawa. Cat. #51-205. Various years.



Table 128. Fort McMurray Airport: inbound passengers by most travelled centres for selected years.

Year	From Edmonton		From Calgary		From Vancouver		From Toronto		From Ft. Chipewyan		From All Other Centres		Total Inbound Passengers	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
1968	7090	79.5	90	1.0	85	1.0	185	2.1	625	7.0	845	9.5	8920	100
1969	4915	74.8	35	0.5	125	1.9	130	2.0	650	9.9	720	11.0	6575	100
1970	3445	65.9	55	1.1	105	2.0	60	1.1	940	18.0	625	12.0	5230	100
1971	4310	69.6	45	0.7	90	1.5	55	0.9	1010	16.3	680	11.0	6190	100
1972	4840	67.4	385	5.4	90	1.3	65	0.9	1180	16.4	620	8.6	7180	100
1973	10060	76.6	990	7.5	150	1.1	130	1.0	955	7.3	855	6.5	13140	100
1974	23940	75.6	3660	11.6	530	1.7	280	0.9	1020	3.2	2220	7.0	31650	100
1975	35810	75.4	4950	10.4	940	2.0	590	1.2	1080	2.3	4100	8.6	47470	100
1976	42160	75.3	4730	8.4	1530	2.7	1200	2.1	1610	2.9	4780	8.5	56010	100
1977	49100	70.4	7330	10.5	1990	2.9	1930	2.8	1480	2.1	7930	11.4	69760	100
1978	41500	67.4	7170	11.6	2360	3.8	1570	2.6	1470	2.6	7390	12.0	61560	100

SOURCE: Statistics Canada. Air Passenger Origin and Destination. Supply and Services Canada: Ottawa Cat. #51-204. Various years.

Table 129. Fort McMurray Airport: outbound passengers by most travelled centres for selected years.

Year	Edmonton		Calgary		Vancouver		Toronto		Ft. Chipewyan		From All Other Centres		Total Inbound Passengers	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
1968	7665	78.0	215	2.2	55	0.6	175	1.8	590	6.0	1125	11.5	9825	100
1969	4980	73.0	85	1.2	90	1.3	120	1.8	680	10.0	860	12.6	6815	100
1970	3815	68.2	90	1.6	105	1.9	90	1.6	915	16.4	580	10.4	5595	100
1971	4385	69.6	170	2.7	95	1.5	60	1.0	965	15.3	625	9.9	6300	100
1972	4280	60.8	435	6.2	95	1.3	40	0.6	1120	15.9	1075	15.3	7045	100
1973	11040	75.6	1215	8.3	135	0.9	140	1.0	950	6.5	1120	7.7	14600	100
1974	24810	75.4	4030	12.2	550	1.7	280	0.9	910	2.8	2330	7.1	32910	100
1975	34580	75.6	5010	10.9	1020	2.2	630	1.4	1050	2.3	3470	7.6	45760	100
1976	42660	75.0	4970	8.7	1690	3.0	1240	2.2	1380	2.4	4970	8.7	56910	100
1977	46670	68.7	7010	10.3	2100	3.1	1960	2.9	1370	2.0	8830	13.0	67940	100
1978	38650	65.5	7300	12.4	2460	4.2	1700	2.9	1610	2.7	7290	12.4	59010	100

SOURCE: Statistics Canada. Air Passenger Origin and Destination.  
Supply and Services Canada: Ottawa. Cat. #51-204. Various years.

Table 130. Fort Chipewyan Airport: inbound passengers by area of departure including most travelled centres in Canada for selected years.

Area/Place of Departure	1968		1969		1970		1971		1972	
	N	%	N	%	N	%	N	%	N	%
Within Alberta										
Edmonton	810	46.3	905	43.4	840	41.1	1150	45.1	1270	46.3
Ft. McMurray	590	33.7	680	32.6	915	44.7	965	37.8	1120	40.8
Other Centres in Alberta	-	-	-	-	-	-	10	0.4	20	0.7
Subtotal: Alberta	1400	80.0	1585	76.1	1755	85.8	2125	83.3	2410	87.8
Within Saskatchewan										
Uranium City	240	13.7	310	14.8	120	5.9	220	8.6	180	6.6
Other Centres in Sask.	-	-	10	0.5	-	-	20	0.8	10	0.4
Subtotal: Sask.	240	13.7	320	15.3	120	5.9	240	9.4	190	6.9
Other Canadian Areas	110	6.3	180	8.6	170	8.3	185	7.3	145	5.3
TOTAL INBOUND PASSENGERS (1)	1750	100%	2085	100%	2045	100%	2550	100%	2745	100%

NOTES: (1) The number of passengers from areas of departure outside of Canada is negligible.

Source: Statistics Canada. Air Passenger Origin and Destination. Supply and Services Canada: Ottawa. Cat. #51-204.

Table 130 cont'd. Fort Chipewyan Airport: inbound passengers by area of departure including most travelled centres in Canada for selected years.

Area/Place of Departure	1973		1974		1975		1976		1977		1978	
	N	%	N	%	N	%	N	%	N	%	N	%
Within Alberta												
Edmonton	815	41.2	920	44.0	1140	44.7	1330	44.9	1180	42.0	870	31.6
Ft. McMurray	950	48.0	910	43.5	1050	41.2	1380	46.6	1370	48.8	1610	58.5
Other Centres in Alberta	50	2.5	30	1.4	80	3.1	80	2.7	50	1.8	30	1.1
<u>Subtotal: Alberta</u>	<u>1815</u>	<u>91.7</u>	<u>1860</u>	<u>89.0</u>	<u>2270</u>	<u>89.0</u>	<u>2790</u>	<u>94.3</u>	<u>2600</u>	<u>92.5</u>	<u>2510</u>	<u>91.3</u>
Within Saskatchewan												
Uranium City	135	6.8	130	6.2	150	5.9	110	3.7	150	5.3	140	5.1
Other Centres in Sask.	10	0.5	10	0.5	30	1.2	10	0.3	-	-	20	0.7
<u>Subtotal: Sask.</u>	<u>145</u>	<u>7.3</u>	<u>140</u>	<u>6.7</u>	<u>180</u>	<u>7.1</u>	<u>120</u>	<u>4.1</u>	<u>150</u>	<u>5.3</u>	<u>160</u>	<u>5.8</u>
Other Canadian Areas	20	1.0	90	4.3	100	3.9	50	1.7	60	2.1	80	2.9
 TOTAL INBOUND PASSENGERS (1)	 1980	 100%	 2090	 100%	 2550	 100%	 2960	 100%	 2810	 100%	 2750	 100%

NOTES: (1) The number of passengers from areas of departure outside of Canada is negligible.

Source: Statistics Canada. Air passenger Origin and Destination. Supply and Services Canada: Ottawa. Cat. #51-204. Various years.

Table 131. Fort Chipewyan Airport: outbound passengers by area of final destination including most travelling centres in Canada for selected years.

Final Destination	1968		1969		1970		1971		1972	
	N	%	N	%	N	%	N	%	N	%
Within Alberta										
Edmonton	725	43.2	835	44.1	920	43.4	1150	43.4	1225	44.8
Ft. McMurray	625	37.2	650	34.3	940	44.4	1010	38.1	1180	43.1
Other Centres in Alberta	-	-	-	-	-	-	15	0.6	45	1.6
<u>Subtotal: Alberta</u>	<u>1350</u>	<u>80.4</u>	<u>1485</u>	<u>78.4</u>	<u>1860</u>	<u>88.0</u>	<u>2175</u>	<u>82.1</u>	<u>2450</u>	<u>89.6</u>
Within Saskatchewan										
Uranium City	210	12.5	200	10.6	90	4.3	210	7.9	155	5.7
Other Centres in Saskatchewan	-	-	10	0.5	10	0.5	20	0.8	-	-
<u>Subtotal: Sask.</u>	<u>210</u>	<u>12.5</u>	<u>210</u>	<u>11.1</u>	<u>100</u>	<u>4.7</u>	<u>230</u>	<u>8.7</u>	<u>155</u>	<u>5.7</u>
Other Canadian Areas	120	7.1	200	10.6	155	7.3	245	9.2	130	4.8
<b>TOTAL OUTBOUND<sup>(1)</sup> PASSENGERS</b>	<b>1680</b>	<b>100%</b>	<b>1895</b>	<b>100%</b>	<b>2115</b>	<b>100%</b>	<b>2650</b>	<b>100%</b>	<b>2735</b>	<b>100%</b>

NOTES: (1) The number of passengers to destinations outside of Canada is negligible.

Source: Statistics Canada. Air Passenger Origin and Destination. Supply and Services Canada: Ottawa. Cat. #51-204. Various years.

Table 131 cont'd. Fort Chipewyan Airport: outbound passengers by area of final destination including most travelled centres in Canada for selected years.

Final Destination	1973		1974		1975		1976		1977		1978	
	N	%	N	%	N	%	N	%	N	%	N	%
With Alberta												
Edmonton	1090	46.3	1010	45.5	1260	40.0	1210	38.8	1210	41.0	870	31.6
Ft. McMurray	955	40.6	1020	45.9	1080	34.3	1610	51.6	1480	50.2	1570	57.1
Other Centres in Alberta	55	2.3	20	0.9	60	1.9	70	2.2	70	2.4	70	2.5
Subtotal:	2100	89.2	2050	92.3	2400	76.2	2890	92.6	2760	93.6	2510	91.3
Within Saskatchewan												
Uranium City	250	10.6	90	4.0	160	5.0	170	5.4	140	4.7	190	6.9
Other Centres in Sask.	-	-	10	0.5	40	1.3	10	0.3	-	-	30	0.7
Subtotal: Sask.	250	10.6	100	4.5	200	6.3	180	5.8	140	4.7	210	7.6
Other Canadian Areas	5	0.2	70	3.2	550	17.5	50	1.6	50	1.7	30	1.1
TOTAL OUTBOUND PASSENGERS (1)	2355	100%	2220	100%	3150	100%	3120	100%	2950	100%	2750	100%

NOTES: (1) The number of passengers to destinations outside of Canada is negligible.

Source: Statistics Canada. Air Passenger Origin and Destination. Supply and Services Canada: Ottawa. Cat. #51-205. Various years.

## 9. CONCLUSIONS AND RECOMMENDATIONS

### 9.1 INTRODUCTION

In this chapter, we summarize the major findings on the impact of oil sands development in the AOSERP Study Area since 1961 and compare these, where possible, with the trends hypothesized in recent literature on the subject of resource community development. Because much of the social impact has occurred within Fort McMurray, the discussion will be focussed upon the dynamics of this community.

Based upon the analysis of the socioeconomic changes in the AOSERP Study Area, specific proposals for planning and programming strategy will be offered in order to facilitate further oil sands development with minimum adverse social impacts.

### 9.2 IMPACT OF OIL SANDS DEVELOPMENT

#### 9.2.1 Stages of Resource Community Development

In an often-cited report to Urban Affairs Canada, Riffel (1975) developed a model which outlined the following stages of resource community development: (1) natural or prediscovery; (2) prospecting, discovery, exploration and survey; (3) industrial and community construction; (4) industrial operation and community improvement; (5) industrial and community operation, (6) community diversification; and (7) community maturity and stability. While this typology is quite useful in delineating the stages of development - in fact, it has been used in studies of Fort McMurray by several researchers (e.g. Larson, 1977; Berger, 1978; Co-West, 1978; Kasinska, n.d.) - it separates the process of change too finely for the final analysis of the statistical material available in this report. Consequently, the following modified model of resource community development is introduced: (1) baseline; (2) exploration; (3) construction; (4) operations and (5) maturity and/or decline. The modified model is compared with the Riffel model below.

Stages of Riffel's ModelStages of Modified Model

- |  |                              |
|--|------------------------------|
| 1. Natural or prediscovery.                            | Baseline                     |
| 2. Prospecting, discovery,<br>exploration, and survey. | Exploration                  |
| 3. Industrial and town<br>construction.                | Construction (of company(s)) |
| 4. a) Industrial and community<br>improvement.         |                              |
| b) Industrial and community<br>operation.              | Operational (of company(s))  |
| c) Community diversification.                          |                              |
| 5. Community maturity and<br>stability.                | Maturity and/or decline.     |

These modified stages are much easier to identify in the data than is possible using Riffel's more disaggregated typology.

Before turning to a chronological overview of the stages of resource community development in Fort McMurray, it is necessary to explain a major distinction between the model presented above and Riffel's earlier model. The modified model is based upon the activities of a specific company (or a specific industry if the activities of the respective companies are concurrent) and the impact that these activities have upon the affected community. This differs from Riffel's criterion which stipulates that his community development model is relevant primarily to the first major economic activity in the area. For example, Riffel's pre-development scenario visualizes a community where; at most, only the traditional activities of hunting and fishing occur.

We have incorporated an industry or company-specific perspective to our analysis of resource community development for several reasons. First, Riffel's "natural or prediscovery" stage (approximately equivalent to our baseline stage) represents a hypothetically virgin social system - virtually untouched or "in limited contact" with white society. While this is a theoretically ideal circumstance for social impact assessment, it is not very



realistic. Many settlements today which are being affected by resource development have previously experienced some economic development. Fort McMurray is a particularly good example of this because the community had experienced economic 'booms' as early as 1907 as a result of oil speculation. More remote localities in Canada have been impacted through trading activity, government services, and earlier resource development. And as a white society spreads its economic activity into these remote areas, it will become increasingly difficult to find a community which can be classified into Riffel's "natural or prediscovery" stage.

A second reason for using an industry or company-specific approach to resource community development is because different industries impact a given community in different ways. This is important in the social impact analysis of localities such as Fort Chipewyan which has been affected by oil sands extraction development (albeit, to a small degree) and may be affected by uranium mining in the future. In their analysis of energy development impacts in the western United States, Murdoch and Leistritz (1979) identified several socioeconomic factors which vary with the type of resource development in a given area. Perhaps the most fundamental among these is the educational and skill level of the work force required by the incoming operation. For example, oil sands extraction requires a more highly skilled workforce overall than, say, uranium or coal mining because of the nature and sophistication of the technology. This small overall difference in skill level, in turn, varies the distribution of other demographic characteristics of the migrating population, the nature of the family structure, the housing market and other community infrastructural needs, the type of social services required, and so forth. Consequently, it is important to have available a model which delineates the impact of different companies and industries.

Finally, even though a particular community may have previously experienced some community development as a result of resource extraction or other economic activities in the area, renewed community development may be statistically observed with

the introduction of another company or industry. Of course, the impact of a new operation in the area depends upon the size of that operation relative to the size of the community. For example, a small in situ oil extraction pilot project is not likely to have an observed impact upon Fort McMurray in 1979, although it might have been noticeable during the 1950's. However, social impact assessment is typically only requested when a large company (relative to the size of the locality) is expected to move into the area. When the incoming operation is of this magnitude, the community is more likely to exhibit many of the characteristics of community development, particularly beginning at the construction stage of development. Modifications of the theoretical dynamics of community development will be slight and will tend to be found in the exploration stage when the community experiences the least impact. Fort McMurray offers an excellent example of how renewed community development can occur. Although the town had developed through the exploration, construction, and operational phases of GCOS, the introduction of Syncrude into the area returned Fort McMurray to a construction phase of community development. (Although careful analysis of the data might reveal the impact of Syncrude in its exploration phase upon Fort McMurray, this impact is relatively minor.)

With respect to a chronology of resource community development in Fort McMurray, numerous operations have had an impact upon the community since the beginning of this century. As mentioned above, a minor 'boom' occurred around 1907 when speculators tried to drill for oil below the oil sands. A salt plant was built in the area, and the oil sands became a resource commodity as construction material for roads.

Within the oil sands extraction industry, however, the exploration period began in the late 1920's when serious efforts were made by the newly-formed Research Council of Alberta to find a method of extracting oil from the oil sands deposits in the area. In this respect, the exploration stage has taken two forms: geological and technological. Geological exploration of oil sands deposits has

extended well before the beginning of this century because of the use of this resource for purposes other than oil extraction. But the more crucial form of exploration in oil sands development has been technological. Specifically the exploration period for oil sands extraction in Fort McMurray began when prospectors began to search for a viable method of extracting oil from the oil sands.

Of course, Fort McMurray has subsequently experienced several exploration periods. Indeed, one might say that the town is impacted by a perpetual state of oil sands exploration. There have been several in situ plants in the area, two of which - GCOS and Syncrude - have progressed to full operations. The exploration period for GCOS began during the 1950's and ended with its construction in 1963. It is not clear when Syncrude's exploration began, but this phase of Syncrude's operation had less of an impact upon the community because GCOS was in operation. Exploration at Syncrude's Mildred Lake operation ended in 1973 when construction began.

Of the two recent oil sands developments near Fort McMurray, the first (GCOS) began its construction phase in 1963 with the building of the GCOS plant north of Fort McMurray and ended in 1967. The second construction period - representing the construction of the Syncrude plant - began in 1973 and ended in 1978. It is important to recognize that although the construction of the Syncrude plant coincided with the operational stage of the GCOS plant, the Syncrude construction activity had a greater impact in terms of resource community development because of its relative magnitude. In other words, Fort McMurray exhibited many of the characteristics of a resource community in a construction phase of community development when the Syncrude plant was being built even though the town was also affected by the operation of the GCOS plant. The sheer size of the Syncrude construction project and the workforce and its impacts upon the community dwarfed the effects of the GCOS operation.

The GCOS plant went into operation in 1967, marking the beginning of Fort McMurray's first major oil sands project in its

operational stage. As indicated above, this phase combined with the Syncrude construction phase between 1973 and 1978. Between 1978 and 1980, Fort McMurray may be classified as a community in the operational stage of resource community development.

Depending upon a myriad of factors, a resource community may follow the operational phase by community maturity, community decline, or community maturity followed by decline. In the instance of community maturity, the economic base of the community diversifies beyond the relevant resource industry and is able to sustain its existence even if the resource operation is cut back or closed. Indeed, some economic diversification may have occurred prior to the existence of the resource company in the area.

Community decline occurs in a settlement which has not diversified its economic base beyond the primary resource company or industry, and that company or industry reduces or closes its operations in the area. Community maturity followed by decline is manifested in a community where the economic base is diversified enough to sustain itself for a short time after the shutdown of the relevant resource industry but is unable, in the long term, to maintain other industries.

Fort McMurray has not yet reached either community maturity or decline with respect to the oil sands extraction industry. In fact, because of the anticipated development of more oil sands plants in the AOSERP Study Area, the town is not expected to enter this stage of community development before the beginning of the next century. As Graham Brawn and Associates Ltd. wrote in 1975:

Most booms occur over a relatively short period of time - five to ten years. But Fort McMurray has been in a boom condition for almost ten years (as of 1975) already. And the Syncrude plant is only the first of a series of anticipated similar developments in the region. Thus the boom has not yet peaked - even for Syncrude - and it will not peak for a number of years to come.

(p.13)

### 9.2.2 Population

One of the most obvious findings is that most of the population growth created by the oil sands developments in the AOSERP Study Area has been concentrated in Fort McMurray. Indeed, the population of the town relative to the size of the study area increased from about 50% in 1961 to 94% by 1979. This trend is consistent with theoretical literature on resource communities even though Fort McMurray is not the closest settlement to the worksite for either GCOS or Syncrude. Although Murdoch and Leistritz (1979) warned that questions of population distribution in impacted areas are among the most difficult to address because they are affected by many diverse variables, several factors stand out to ensure that the greatest population growth would occur in Fort McMurray. For example, the services and facilities offered in the town (including, housing, business infrastructure, and various services) are more closely alligned with the preferences of the in-migrating population, compared with the facilities and services in Fort Mackay which is closer to the work site. The fact that Fort McMurray has been a largely European community since World War II and, therefore, has cultural characteristics closest to the incoming population also explains why this community was not impacted. Finally, Fort McMurray received most of the population growth even though larger European communities such as St. Paul, Bonnyville, and Grand Centre existed in 1961 because Fort McMurray was much closer geographically, to the work site than these larger towns.

While studies on resource community development in the Western United States have found that population growth is lower during the construction phase than the operational phase (Murdoch and Leistritz, 1979), Fort McMurray's growth appears to be higher during the construction phases, particularly between the years 1961-1966 and 1971-1976. This difference may be explained by two reasons. First, Canadian resource developments tend to be more isolated from urbanized centres than in the United States. Thus, construction workers in Canadian projects are more likely to make

a nearby community a permanent residence (even if only for the years of construction) while commuting from the original residence to the work place more commonly occurs in the American projects. Second, construction workers in the Fort McMurray area are more likely to settle in the town compared with other resource projects because of the promise of future employment as several more oil sands plants have been planned and construction of infrastructure in Fort McMurray continues. This is verified by the fact that in 1979 (over one year after the Syncrude plant had been constructed) construction represented the second largest industry in terms of labour force size in the community (16.6% of the labour force).

Based upon Riffel's (1975) review of the literature, the exploration and construction phases are typified by an over-representation of males. By the time that the company begins production, however, the male/female ratio becomes more balanced, mainly because more families move into the impacted community. These trends are evident in Fort McMurray. The male/female ratio increased during the construction of the GCOS plant in 1966 but fell rapidly as it approached the operational phase. Perhaps because of the improved environment for family settlement during the 1970's, however, the ratio did not increase during the second construction periods. The percentage of family households also increased as GCOS approached the operational phase and decreased somewhat during the construction of the Syncrude plant.

Prior to the oil sands construction and operational phases in the AOSERP Study Area, Fort McMurray's population was under-represented by those between 20-44 years and over-represented by those 45 years and older. As large numbers of young working-age people settled in Fort McMurray, the community's demographic characteristics changed rapidly. Now, the community is under-represented among those 45 years and older and over-represented among those between 20-44 years. This change in the population distribution - particularly the in-migration of young (20-44 years) workers - has been confirmed elsewhere as a characteristic of resource communities (Larson, 1977).

Other changes in Fort McMurray's population since 1961 are consistent with the findings in other resource communities. The native population decreased as a percentage of the total population. The general level of education increased and mobility became a pervasive characteristic of the community during the construction stage and the first few years of the operational stage (providing new development does not interrupt the sequence).

As summarized in Chapter 3, the population characteristics of Fort Chipewyan, Fort Mackay, Anzac, and the surrounding area have not changed a great deal since 1961. The only noteworthy changes in Fort Chipewyan are that the English-speaking population has increased somewhat in recent years (probably due to the increased presence of provincial and federal government departments in the settlement) and that the educational level has improved. In particular, the percentage of males with post-secondary non-university education is quite high. For Fort Mackay, Anzac and the surrounding area, increases in the educational level, the percentage of females, and the percentage of English-speaking inhabitants has been found since 1961

### 9.2.3 Families

Aside from the prediction that more families are found in a resource community during the later stages of development, there is little knowledge of the dynamics of family characteristics caused by resource development. The trends found in this report on Fort McMurray may shed some light on this subject.

It is not surprising to learn that families are younger in more recent years in Fort McMurray than before the construction of either Syncrude or GCOS. Specifically, family heads are younger and there is a smaller percentage of children over 14 years of age. These characteristics are consistent with the population trends reported in the previous section of this chapter.

Another change in the community's family characteristics is that families have become more autonomous. They are more likely to be maintaining their own household and are less likely to have lodgers. Although housing costs are high in the town (especially in the "open market"), the rapid rise in the average income level in the community may have contributed to this increased autonomy. Also, lodgers and secondary families in households usually have strong social ties with the household head. Because of the high mobility and turnover in Fort McMurray in recent years, social bonding is less likely to develop. Consequently, fewer families would be housing lodgers or secondary families.

With respect to Fort Chipewyan, the statistics on families do not indicate that the settlement has been greatly impacted by oil sands development. Families are large and the average age of the family head has not changed since 1961. However, the percentage of families with married family heads decreased between 1966 and 1976. For Fort Mackay, Anzac, and the surrounding area, the only major change is that family heads are typically much older than they were in 1961.

#### 9.2.4 Households

Changes in the characteristics of Fort McMurray's households may be attributed largely to changes in the community's population. For example, as the GCOS plant reached the operational stage, there was a noticeable increase in the percentage of one-family households with a corresponding decrease in the percentage of non-family households. This trend was reversed, however, as Fort McMurray returned to the construction phase of resource community development between 1971 and 1976. This manifests the migration of families to the area during the GCOS operational phase followed by the migration of a large unmarried population into the town during the Syncrude construction phase. As expected between 1971 and 1976, the typical age of household heads decreased and the percentage of single household heads increased. A continual decline in the



percentage of very large households was reported for Fort McMurray between 1961 and 1976.

Although several changes occurred in the household characteristics in Fort Chipewyan, they are not believed to be due to oil sands development. The settlement has had an increase in the percentage of one-family households with additional persons and in the percentage of non-family households with two or more persons. Since 1971, there has been an increase in the percentage of small households. Only a reduction in the average number of persons per household between 1971 and 1976 has been reported as a major change in Fort Mackay, Anzac, and the surrounding area.

#### 9.2.5 Labour Force and Employment

One of the most startling statistics with respect to labour force characteristics in resource communities is the high degree of turnover that occur during the construction phase and the early years of the operational phase. Oddly enough, data on labour force turnover is neither regularly nor systematically collected by public agencies in Canada. Consequently, no time-series information on labour force turnover in Fort McMurray has been presented in this report. It is known, based upon estimates from the oil sands companies, that their labour force turnover during the construction phase was about 200% per annum. One person from GCOS estimated that 60,000 people had been recruited over the five year construction period (1963 to 1968) to maintain a work force which peaked at 9,000 (Humphreys, 1979). These figures are consistent with those from other resource communities (see for example: Siemens, 1973; Riffel, 1975; Lucas, 1971). Moreover, a study by Co-West Associates (1978) found that employers in Fort McMurray experiences similar high rates of labour turnover.

The degree of labour turnover is affected by several variables. First, it must be acknowledged that some labour turnover is unavoidable because different workers with different skills are required at each stage of development. Second, short term hiring is prevalent in resource communities in order to keep the resource

development, particularly construction, on schedule. Third, the nature of resource industry work often 'burns out' workers very quickly. Long hours of work for several days at a time often contribute to the psychology that living in Fort McMurray is a temporary affair. A fourth factor which has encouraged labour turnover in the community, particularly during the GCOS construction in the 1960's, is that workers who have left their families in their original residence may not return to work following time off to see the family. As more families have moved to the town in recent years, this factor has become less pronounced. However, the psychological strains of family living in resource communities (such as 'cabin fever', lower quality services and facilities, etc) also encourages labour turnover. Finally, high labour turnover may be attributed to the characteristics of the resource community, especially during the construction stage of development. The population tends to be young and highly mobile.

Another characteristic of resource communities is that the labour force is concentrated into the mining and construction industries. Also, depending upon the sophistication of the company's technology, there is a rapid increase in the percentage of workers in professional and technical occupations. Each of these characteristics may be seen in the data of Fort McMurray. During the operational phases, approximately 40% of the labour force is in mining and 18% is in construction. The percentage in construction jumps to over one-third of the labour force during the peak construction period. Also, professional and technical workers comprise nearly one-third of the labour force in Fort McMurray during the operational phases because of the level of skills required in the oil sands extraction industry.

While income has been known to increase with the introduction of resource operations into an area (Murdoch and Leistritz, 1979), the magnitude of this trend varies with such factors as the type of resource operation, the previous amount of economic activity and standard of living in the community, and the distance of the settlement from larger urban centres. In Fort

McMurray, the increase in the average wage rate between 1961 and 1976 is highly noticeable. Between 1961 and 1971, for example, the wage rate for males increased from a level below the Alberta average to a level well above the Alberta average.

Several other changes in Fort McMurray's labour force characteristics have occurred since 1961. Unemployment has increased in recent years to a rate which is twice the Alberta rate. Highest unemployment rates are found among the young, more mobile, less educated, and female workers. It is expected that much of this high unemployment is due to the in-migration of people with little experience, few marketable skills, and few occupational contacts in the area.

Finally, the female labour force has not experienced the same employment gains as the male labour force in Fort McMurray. In 1976, the unemployment rate for females was nearly three times the male unemployment rate. The average total income for women in 1970 was less than one-third that of male workers - a wider wage gap than existed in 1961. Also, the percentage of women in unpaid family labour jumped from 4.8% in 1961 to 10.4% by 1971.

Fort Chipewyan, Fort Mackay, Anzac, and the surrounding area has not been greatly affected by oil sands development as may be seen from the statistics on the labour force and employment characteristics in these areas. These settlements have a very high unemployment rate, a low participation rate, and a low level of income compared with Alberta.

#### 9.2.6 Housing

The greatest impact that oil sands development has had upon the housing characteristics of Fort McMurray (aside from the massive construction of new housing itself) is the shift in housing tenure from owned to rented. Between 1961 and 1979, the percentage of home ownership decreased from 70.4% of all occupied private dwellings to only 47.3%. This is unfortunate for as one study concluded (A.E. Moss in Larson, 1977: p.86), owned housing should be encouraged because tenants have no financial stake in the community

and will typically contribute little to its improvement.

Another aspect of resource community housing that has been manifested in Fort McMurray is that the percentage of mobile homes increases during the construction stage and declines during the operational stage. At both times, the percentage of mobile homes is higher than during the baseline or exploration stage. Of course, the existence of mobile housing in a resource community varies with the number of short-term residents, such as construction workers (Murdoch and Leistritz, 1979). This type of housing is also present when a resource settlement has not been able to provide enough permanent housing accommodation at an acceptable cost, such as during the construction stage when there is an 'instant' demand for housing (Larson, 1977). There were no occupied movable dwellings in Fort McMurray in 1961. But during the peak of GCOS construction in 1966, 23.3% of the town's housing consisted of mobile homes. This decreased to 17.9% in 1971 as GCOS entered its operational phase. With renewed construction activity, however, movable dwellings represented 30.6% of Fort McMurray's occupied private dwellings in 1976.

Other aspects of housing construction are evident in Fort McMurray between 1961 and 1979. For example, there has been a rapid improvement in the water and toilet facilities. In 1961, these amenities were not nearly as developed as in most dwellings elsewhere in Alberta. By 1971, Fort McMurray had more advanced facilities of this type than would be typically found in Alberta. In addition, there were more rooms per dwelling and fewer persons per room in occupied private dwellings in the town in 1971 compared with 1961.

For Fort Chipewyan, Fort Mackay, Anzac, and the surrounding area, housing has continued to be mostly resident-owned and virtually all housing is single detached. (In Fort McMurray, housing has become much more diversified.) However, there has been a recent increase in the percent of movable dwellings in these communities.

### 9.2.7 Social Patterns, Services and Infrastructure

In the literature on resource community development, it has been suggested that the community's physical plan should - and often does - imitate the characteristics of the areas where migrants move from. Writing in 1973, Siemens commented:

By and large, the designers of new mining communities are not planning for northerners, but, in large part, for professionals and para-professions who had become accustomed to a southern suburban life-style and who wish to continue living in the manner with which they are familiar. (p.7)

Other writers have simply argued that resource communities resemble southern suburbs because the towns are planned by urban designers from the southern areas. In their attempt to develop residential areas which are for the 'good' of the resource community, these planners design urban areas which reflect their own southern cultured values. As Berger (1978) commented:

In this respect, as well, resource community planning bears some similarity to historical, and currently unacceptable, planning processes in southern cities from which most of the new resource community residents come. (p.3-7)

With respect to Fort McMurray, there have been numerous complaints about the community planning (Van Dyke and Loberg, 1978) and, in particular, the physical separation of the various town components (Berger, 1978). Not unexpectedly, other resource towns, such as Norman Wells in the Northwest Territories, have also been developed in a way that lacks physical cohesion (Siemens, 1973). While this appears to be a problem which can easily be solved in future resource communities, the economic involvement of the resource company in typically building houses in only one area for its employees and the social cohesion of the employees actually place significant barriers against the physical integration of the community. Consequently, in Fort McMurray (as in Norman Wells), residents tend to live in segregated areas of the town. As one resident explained:

The way in which the companies are buying or building houses is creating company "ghettos". All the people from one company live in given areas rather than being dispersed around the town. (Van Dyke and Loberg, 1978: p.35)

And as Berger (1978) warned, the physical separation of the town into various town components has created an expensive settlement system in terms of capital and operating costs. Needless to say, community stability through social cohesion has also been a negative consequence. Although the statistics available in this report have not been able to directly address this issue of community planning, it is evident from the reports cited above that issue is of fundamental importance and, in fact, is consistent with the results of planning in other resource communities.

With respect to business in Fort McMurray, retail activity has increased the most since 1961. In 1966, for example, total retail sales were \$3.8 million; by 1976 they had reached \$74.5 million. Because of the demographic characteristics of the population, the high mobility in the area, and the relatively high cost of goods in the community, motor vehicle sales have been over-represented in the area while home furnishings and hardware sales have been under-represented. The number of retail outlets has tripled between 1966 and 1976. At the same time, business services have not increased as rapidly as expected for the population growth and manufacturing activity has not significantly increased since 1972. Clearly, Fort McMurray has not diversified its economic base to any significant degree.

As Berger (1978) correctly noted, the development of a resource community involves two major dimensions. The first dimension, the exploitation of the local resource base and related economic concerns, usually precedes the second dimension, namely, the provision of a habitable living environment accompanying that exploitation and related social concerns. Not only does the shift in emphasis occur from economic to social, but a shift occurs from the 'hardware' to the 'software'. In other words, physical social amenities such as housing and community facilities tend to precede

the soft services in the community in terms of quality and even existence. Indeed, the development of the soft services usually occurs when there is a let-up in the demand for the other economic and social needs (Brawn, 1975).

While the development of some social services - police force, public assistance, telephone services and facilities, and government administration - proceeded to develop in Fort McMurray soon after GCOS began construction (or had already been developed to some degree), most services lagged well behind the expansion of other aspects of the community. For example, the hospital had only 25 beds available until 1966, 64 beds for the years 1966-1970, and only 54 beds since 1970. The new hospital, which will house and provide recurring services for 300 beds should be near completion.

Recreational facilities, as discussed in Chapter 8, did not expand to approach the level of community needs until the construction of the Syncrude plant was nearly completed. Still, some recreational activities do not have adequate facilities (such as indoor swimming).

While recreational services and facilities have finally expanded, the same cannot be said of cultural activities in Fort McMurray. Although library membership growth has kept pace with the town's population growth, the facilities, materials, and funding have not. In fact, increase in library staff has fallen well behind the demand for the service. While 263 library members were served by one library worker in 1966, there were an average of 767 members for each library worker in 1977. Few other cultural facilities have developed at all.

Graham Brawn and Associates Ltd. suggested in a 1975 report to the Alberta Solicitor General that the lack of sufficient facilities and services to help the "casualties" in the community has placed additional pressure upon the criminal justice system in the area. The following summary was made:

Unfortunately, it is the casualties - adults as well as children - who have traditionally made up the bulk of the clients of the criminal justice system. Thus, the criminal justice professionals are asked to keep the lid on and they must do so without appropriate backup.

Furthermore, although the police force has been designed to serve the known population in Fort McMurray and the surrounding area, the existence of an usually large 'shadow' population places additional pressure upon this service. One resident stated:

for a policeman, Fort McMurray is considered a bad assignment. One works long hours and has a lot of overtime. There are 40 men now, but this number will increase in the near future. (Van Dyke and Loberg, 1978: p. 65)

Even if the size of the police force is similar to the size of other forces in communities of Fort McMurray's size, the crime rate for the area suggests that the work load is still very great. The data on the crime rates in Fort McMurray presented in this report leave no doubt that several crimes - including criminal code offences (especially crimes of violence), federal statute offences, and provincial statute offences - have been higher than the Alberta rates since the mid-1960's. In fact, only municipal by-law offences have consistently been lower than in Alberta. As expected, crime rates for most types of offences have been highest during the two stages of construction, particularly during the GCOS construction when the 'shadow' population was large relative to the size of the enumerated population in the community.

Finally, with respect to transportation infrastructure and activity in the AOSERP Study Area, much development has occurred since 1961 in the availability of road and air transportation. Several highways have been built or improved including Highway 63 which was completed during the peak of the GCOS construction period in 1966. Development and improvement of two licensed airports in the study are - at Fort McMurray and Fort Chipewyan - occurred during the late 1960's and mid-1970's. Transportation activity by road and by air has increased dramatically in the Fort



McMurray area. Air service to and from the community increased particularly quickly during the construction phase of Syncrude, but fell somewhat during the late 1970's as the project began operation. Air service in Fort Chipewyan has not increased in the past decade.

### 9.3 RECOMMENDATIONS

This study has been prepared to collect and analyse a compendium of socioeconomic statistics since 1961 for the AOSERP Study Area, particularly as they relate to the impacts of oil sands development. However, throughout this report certain factors have become evident which we have concentrated below into three proposals for planning and programming strategy for future oil sands developments. It is believed that these proposals will facilitate the introduction of these developments with minimum adverse social impact.

1. It is recommended that an agency be set up through the Alberta Government to monitor all current and future communities which are impacted by resource development. We encourage the Alberta Government to allocate this responsibility to the relevant officials and departments which are already in existence to avoid duplication of government activity. This monitoring agency should be responsible for the collection and analysis of data of all major resource community developments in Alberta so that human resources and knowledge may be concentrated for the optimal expansion of knowledge in the area of social impact assessment. The role of the agency would be to develop a better understanding of the potential impacts of resource developments upon nearby communities or settlements which have been created by resource development. More important, the agency's role would be to

advise provincial and municipal planners and administrators throughout the early stages of planning and programming activity so that adverse social impacts may be minimized. If necessary, the Alberta government should ensure that the consultative services of this monitoring agency are used wherever possible.

2. It is recommended that municipal censuses or other agencies which periodically collect information on resource communities include a set of questions which would gather data on aspects of population mobility and turnover.

Although data on population mobility are powerful indicators of community stability, there is a paucity of systematically collected statistics on this subject in Canada. Statistical material on in-migration, out-migration, labour turnover, student admissions and withdrawals, student transfers, residency changes, and other forms of mobility are also particularly useful to planners in resource communities. For these reasons, we encourage the expansion of enumeration instruments to gather statistics on this phenomenon.

3. It is recommended that social services and facilities be developed and expanded at earlier stages of resource community development. The information in this and other reports on resource community development clearly illustrates that low

priorities are typically given to the non-economic aspects of resource settlements and that this has long-term adverse social and psychological impacts. Indeed, the resulting lack of community stability and cohesion and the psychological problems which often accompany poor social development eventually become major financial burdens upon the community.

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